INITIAL STUDY/MITIGATED NEGATIVE DECLARATION
JOHN ADAMS ACADEMY
PHASE 2 IMPROVEMENTS PROJECT

Prepared For:
John Adams Academies, Inc.
One Sierra Gate Plaza
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1.0 INTRODUCTION & PURPOSE

1.1 Purpose and Scope of the Initial Study

This IS/MND has been prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Section (§) 21000 et seq.) and its Guidelines (California Code of Regulations [CCR], Title 14, §15000 et seq.), to evaluate the potential environmental effects associated with the construction and operation of the John Adams Academy (JAA) Phase 2 Improvements Project (project). Pursuant to Section 15367 of the State CEQA Guidelines, John Adams Academy Board of Directors is the lead agency for the proposed project. The lead agency has the principal responsibility for carrying out or approving a project.

As set forth in the State CEQA Guidelines Section 15070, an IS/MND can be prepared when the Initial Study has identified potentially significant environmental impacts, but revisions have been made to a project, prior to public review of the Initial Study, that would avoid or mitigate the impacts to a level considered less than significant, and there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.

1.2 Summary of Findings

Section 4.0 of this document contains the Environmental Checklist that was prepared for the proposed project pursuant to CEQA requirements. The Environmental Checklist indicates whether the proposed project would result in no impact, less than significant impacts, less than significant impacts with the implementation of mitigation measures, or potentially significant impacts. These impacts are identified and discussed within each subsequent resource area throughout this document.

Based on the environmental checklist (Section 4.0) completed for the proposed project and supporting environmental analyses, the project would primarily result in no impact or a less than significant impact to environmental issue areas identified below. The project's impacts on the following issue areas would be less than significant with mitigation incorporated: Biological Resources, Cultural Resources, Geology and Soils, Recreation, and Tribal Cultural Resources. All impacts would be less than significant after mitigation.

As set forth in the State CEQA Guidelines Section 15070 (Decision to Prepare a Negative or Mitigated Negative Declaration), a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

(a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or

(b) The initial study identifies potentially significant effects, but:

  (1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

This IS/MND contains and constitutes substantial evidence supporting the conclusion that preparation of an EIR, or other more involved environmental document is not required prior to approval of the project.

1.3 Initial Study Public Review Process

A Notice of Intent (NOI) to adopt the MND based on State CEQA Guidelines § 15072, was prepared and submitted to the State Clearinghouse for filing and circulation. The document was made available for a 30-day public review period. During this time the public, interested parties, stakeholders, and any state or local agency could provide comment on the document. The IS/MND may be viewed on John Adams Academy's website at the following link:

https://www.johnadamsacademy.org/apps/pages/eldoradohills/improvementproject

Written comments on the IS/MND should reference the "John Adams Academy Phase 2 Improvements Project," and be addressed to Joseph Benson at the following address:

John Adams Academies, Inc.
Attn: Joseph Benson, Executive Director
One Sierra Gate Plaza
Roseville, CA 95678
Or,
Joseph.benson@johnadamsacademy.org

The John Adams Academy Board of Directors, as the Lead Agency for this project, will consider comments received and in accordance with (State CEQA Guidelines § 15074(b)), decide whether to adopt the IS/MND prior to taking action to approve the project. If the IS/MND is adopted and the proposed project is approved, John Adams Academies, Inc. will adopt the MMRP, which will detail the mitigation measures, timing of mitigation implementation, and list the responsible parties.

1.4 Report Organization

This document has been organized into the following sections:

Section 1.0 – Introduction. This section provides an introduction and overview describing the conclusions of the Initial Study.

Section 2.0 – Project Description. This section identifies key project characteristics and includes a list of anticipated discretionary actions.

Section 3.0 – Initial Study Checklist. The Environmental Checklist Form provides an overview of the potential impacts that may or may not result from project implementation.

Section 4.0 – Environmental Evaluation. This section contains an analysis of environmental impacts identified in the environmental checklist.

Section 5.0 – References. The section identifies resources used to prepare the Initial Study.

2.0 DESCRIPTION OF PROPOSED PROJECT

2.1 Project Overview

The proposed project (project) would develop additional sports fields, playground areas, outdoor learning areas, and a new internal roadway located behind the existing John Adams Academy -El Dorado Hills Campus facility at 1104 Investment Boulevard in the El Dorado Hills community. Improvements would be located on approximately 5 acres and would include but is not limited to sports fields, an outdoor amphitheater, outdoor learning area, playground structure, hard courts, running trail, storage structures, restrooms, and a paved roadway providing access for drop-off/pick-up of students at the school.

2.2 Project Location and Setting

Regional Vicinity

The proposed project would be located in northern California, approximately 25 miles southeast of Sacramento, in the western portion of El Dorado County. See **Figure 1: Regional Map.** Regional access is provided from U.S. Route 50 (El Dorado Freeway). The project site is located within Section 24, Township 9 North, Range 8 East (Mount Diablo Base and Meridian, United States Geological Survey 7.5 minute “Folsom SE Quadrangle”) see **Figure 2: USGS Topographic Map**.

Local Vicinity

The project would be located immediately south of the existing John Adams Academy facility and parking lot at 1104 Investment Boulevard, in the southern portion of El Dorado Hills Community. Improvements associated with the project would be located on approximately 5 acres of the northeast portion of Accessor Parcel Number (APN) 117-720-007. The southwestern portion of the parcel is currently being developed to include a sport field that would also support John Adams Academy. The project site is bordered by office buildings and the existing John Adams Academy facilities and parking lots to the north and west, undeveloped land to the south, and Latrobe Road to the east. Local access is provided from Latrobe Road, Robert J. Matthews Parkway, and Investment Boulevard. See **Figure 3: Vicinity Map**.

The project site generally consists of undeveloped land vegetated with nonnative annual grassland and brush. Site topography includes slopes with ground surface elevations ranging from approximately 510 to 565 feet above mean sea level. Currently, utilities within this area include surficial and piped stormwater drainage culverts, irrigation lines, light posts and associated subsurface electrical lines, and underground communication (undefined) lines.

General Plan and Zoning

General Plan

The County of El Dorado General Plan (General Plan) sets forth land use designations that indicate the purpose and intended use for land within the County. The General Plan further distinguishes between urban, suburban, and rural land uses by demarcating the limits of Communities Regions, Rural Centers, Rural Regions, and Planned Communities on the General Plan Land Use Map to meet the place-making goals and intent of the County. The purpose of a Community Region is to establish the limits of urban development to focus population growth and economic expansion in established communities in order to preserve the character of surrounding rural areas. The project site is located within the El Dorado Hills Community Region, which is comprised of various land used designations including Low Density Residential, Medium Density Residential, High Density Residential, Multi-Family Residential, Commercial, Research and Development, Industrial, Open Space, Public Facilities, and Tourist Recreational.

The project site is designated as Research and Development (R&D) in the County's General Plan. The primary purpose of the Research and Development land use designation is to provide areas for the location of high technology, non-polluting manufacturing plants, research and development facilities, corporate/industrial offices, and support service facilities in a rural or campus-like setting which ensures a high quality, aesthetic environment.

Zoning

According to the County of El Dorado Municipal Code (Municipal Code) Zoning Map, the project site is within the Research and Development Design Review – Community (R&D-DC) zone. The project sites primary zone is R&D, which implements the Research and Development land use and allows non-polluting manufacturing plants, research and development facilities, corporate and industrial offices, and support service facilities in a rural or campus-like setting, such as a business park environment. The project site has a combined zoning of R&D-DC, which requires development in this combined zone to comply with specific design guidelines and standards adopted for the specific area.

Pursuant to County Code Section 130.10.040, charter schools are considered public schools and are therefore exempt from the El Dorado County Zoning Ordinance. Specifically, Section 130.10.040.B.3 exempts "[a]ctivities of a local agency, as defined by California Government Code Section 53090, as provided in Section 53091 et seq." from the provisions of the County's zoning code (EDC 2015b; California Legislative Information 2018). John Adams Academy is an independent public charter school chartered by the El Dorado County Office of Education. As an independent public charter school, John Adams Academies, Inc. is a Local Education Agency, which is a "local agency" as defined by California Government Code Section 53090(a). Therefore, the proposed project is exempt from the requirements in the R&D-DC zone.

2.3 Project Components

The conceptual site plan is provided in **Figure 4: Proposed Site Design**, which details project component locations. As proposed, the project would construct additional sports fields, playground areas, outdoor learning areas, and a new internal roadway on approximately 5 acres to support the John Adams Academy -El Dorado Hills Campus. Specifically, the project would include the following:

- Internal paved roadway
- Two artificial soccer fields
- Outdoor amphitheater(s)
- Outdoor learning area(s)
- Playground structure
- Hard court(s)
- Outdoor running trial
- Garden(s) and open space area(s)
- Retention basin(s)
- Restroom facilities
- Storage structure(s)

On-Site Circulation

The project proposes an internal roadway which would be used for school pick-up and drop-off purposes. The proposed roadway would be located along the western boundary of the project site and provide additional circulation between the existing 1102 and 1104 Investment Boulevard John Adams Academy buildings and parking lots. The roadway would connect to the existing parking lots and pedestrian facilities where appropriate.

Internal to the site, walking pathways would be located throughout to provide access to different site components. The project would also include a continuous running trail which would be located along the southern boundary of the site and wrap along the eastern boarder as well.

Landscaping and Site Lighting

Landscaping would be provided throughout the site and would be comprised of a variety of trees, drought-tolerant shrubs, ground cover, shrub masses, decorative rocks, etc. All landscaping elements would be consistent with applicable State and local regulations, specifically El Dorado County Code Chapter 130.33: Landscaping Standards.

Project lighting would include light sources typically used in park developments, including outdoor lighting for security and wayfinding. Additionally, the project would include field lighting on approximately 30' tall for the soccer fields. The field lighting would be directed and shielded down to prevent light pollution and would only be used for school sporting events which would conclude by 10 PM.

Utilities

Project implementation would require the construction of new on-site and off-site utility infrastructure connections. These utilities would be connected to existing utility infrastructure with the final sizing and design of on-site facilities to occur during final building design and plan check.

Water and Sewer. The El Dorado Irrigation District (EID) provides and would continue to provide water and wastewater service to the project site. The project would connect to an existing water line and sewer main that currently serve the surrounding John Adams Academy facilities.

Drainage and Water Quality. Regional drainage facilities are constructed, operated, and maintained by the County. Existing drainage facilities generally convey runoff from local streets to the regional facilities. Properties to the north are identified as self-retained developments. Under existing conditions, storm water sheet flows from the north end towards the south of the project site. The project proposes on site retention basins per El Dorado County code requirements throughout the southern half of the project site.

Dry Utilities and Solid Waste Management. Pacific Gas and Electric (PG&E) provides and would continue to provide electrical and natural gas service to the area. The proposed project would connect to existing utility lines, with new utility lines placed underground. El Dorado Disposal currently provides solid waste collection for John Adams Academy and would continue to provide services for the project site.

Project Construction

Project construction is anticipated to take approximately 13 months, commencing in 2024. Construction would occur in the following sequence:

- Site clearing;
- Site preparation;
- Grading
  - Earthwork would involve on-site grading which would involve cut and fill at maximum depths of five feet and would require approximately 45,000 cubic yards (CY) of cut/fill;
- Underground utility construction;
- Building construction; and
- Paving, architectural coating, and landscaping.

2.4 Project Approvals

The following approvals would be required to implement the JAA Phase 2 Improvements Project.

- **Adoption of the environmental document:** The John Adams Academy Board of Directors will act as the lead agency as defined by the State CEQA Guidelines and will have authority to determine if the environmental document is adequate under CEQA.
- **Project Approval:** The John Adams Academy Board of Directors will consider approval of the project and all related entitlements.

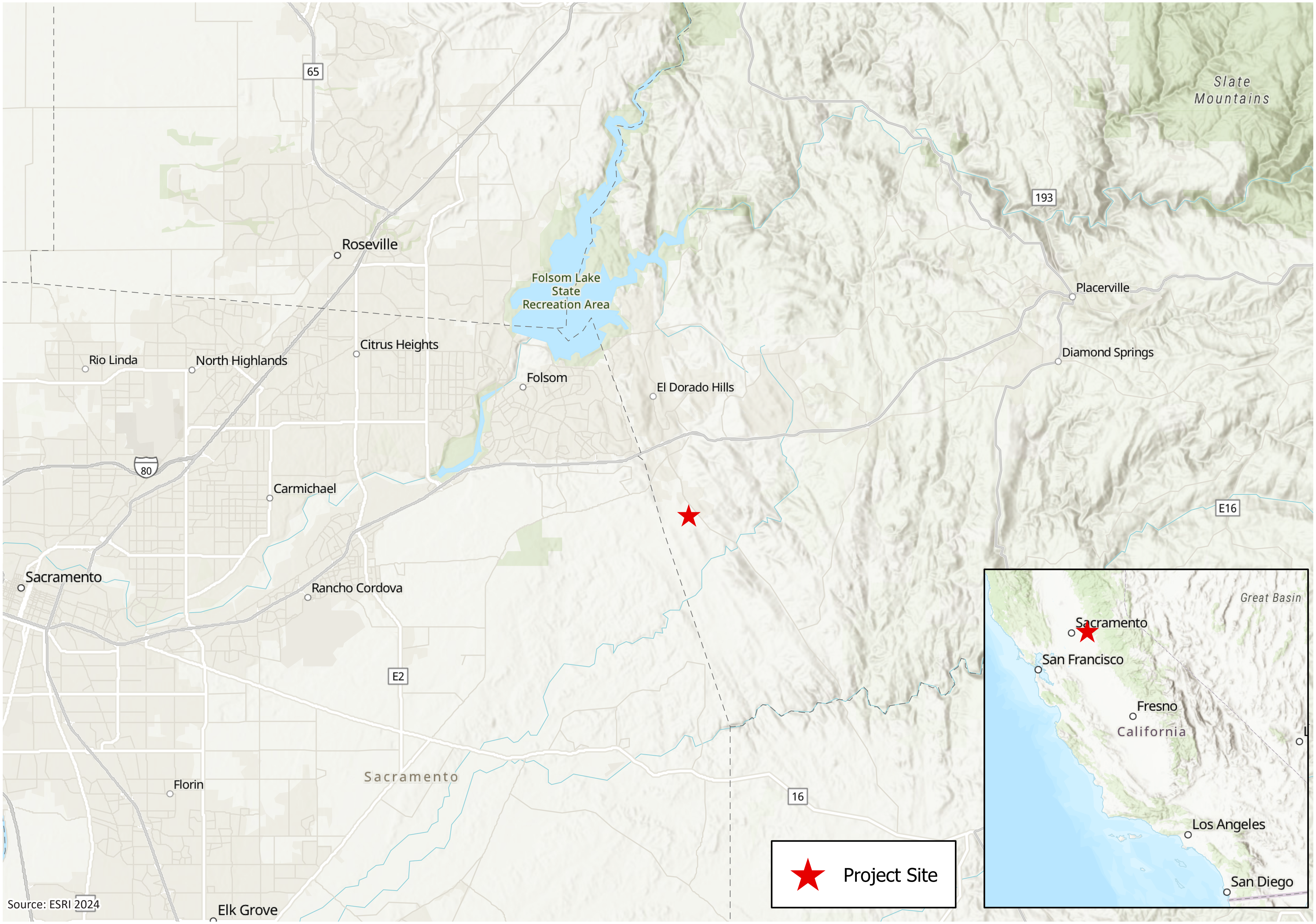

Figure 1: Regional Map

John Adams Academy Phase 2 Improvements Project

Initial Study/Mitigated Negative Declaration

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USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map OnDemand Topo

7.5-MINUTE TOPO QUADRANGLE
Custom Extent
7.5-MINUTE TOPO

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid:Universal Transverse Mercator, Zone 10S
Data is provided by The National Map (TNM), is the best available at the time of map generation, and includes data content from supporting themes of Elevation, Hydrography, Geographic Names, Boundaries, Transportation, Structures, Land Cover, and Orthoimagery. Refer to associated Federal Geographic Data Committee (FGDC) Metadata for additional source data information.

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands. Temporary data changes may have occurred since these data were collected and some data may no longer represent actual surface conditions.

Learn About The National Map: https://nationalmap.gov

UTM GRID AND 2021 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
CONTOUR SMOOTHNESS = Medium

QUADRANGLE LOCATION
ADJOINING QUADRANGLES

ROAD CLASSIFICATION

7.5-MINUTE TOPO, CA
2024

Source: USGS 2024

Figure 2: USGS Topographic Map

John Adams Academy Phase 2 Improvements Project

Initial Study/Mitigated Negative Declaration

Not to scale

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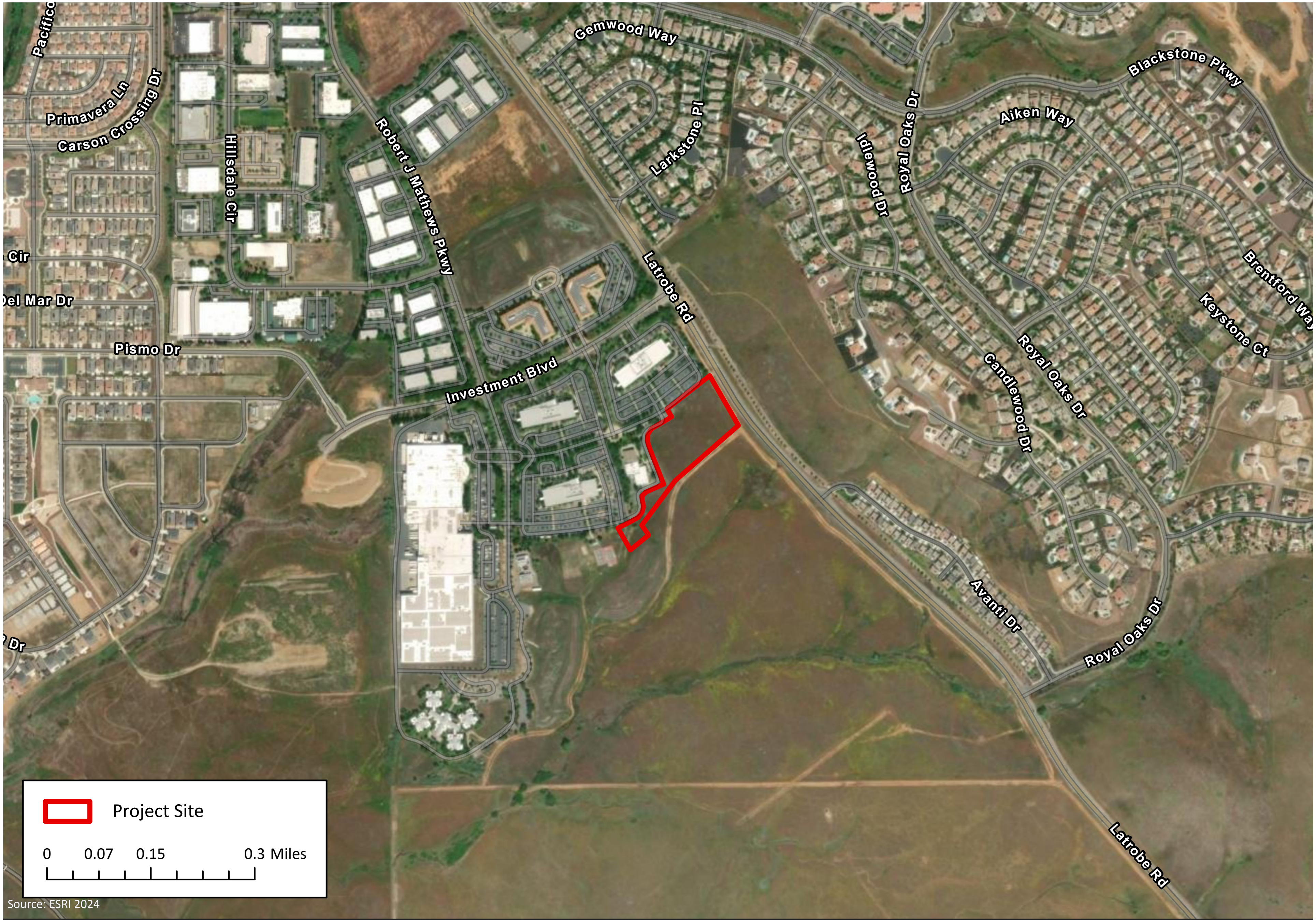

Figure 3: Vicinity Map

John Adams Academy Phase 2 Improvements Project
Initial Study/Mitigated Negative Declaration

Not to scale

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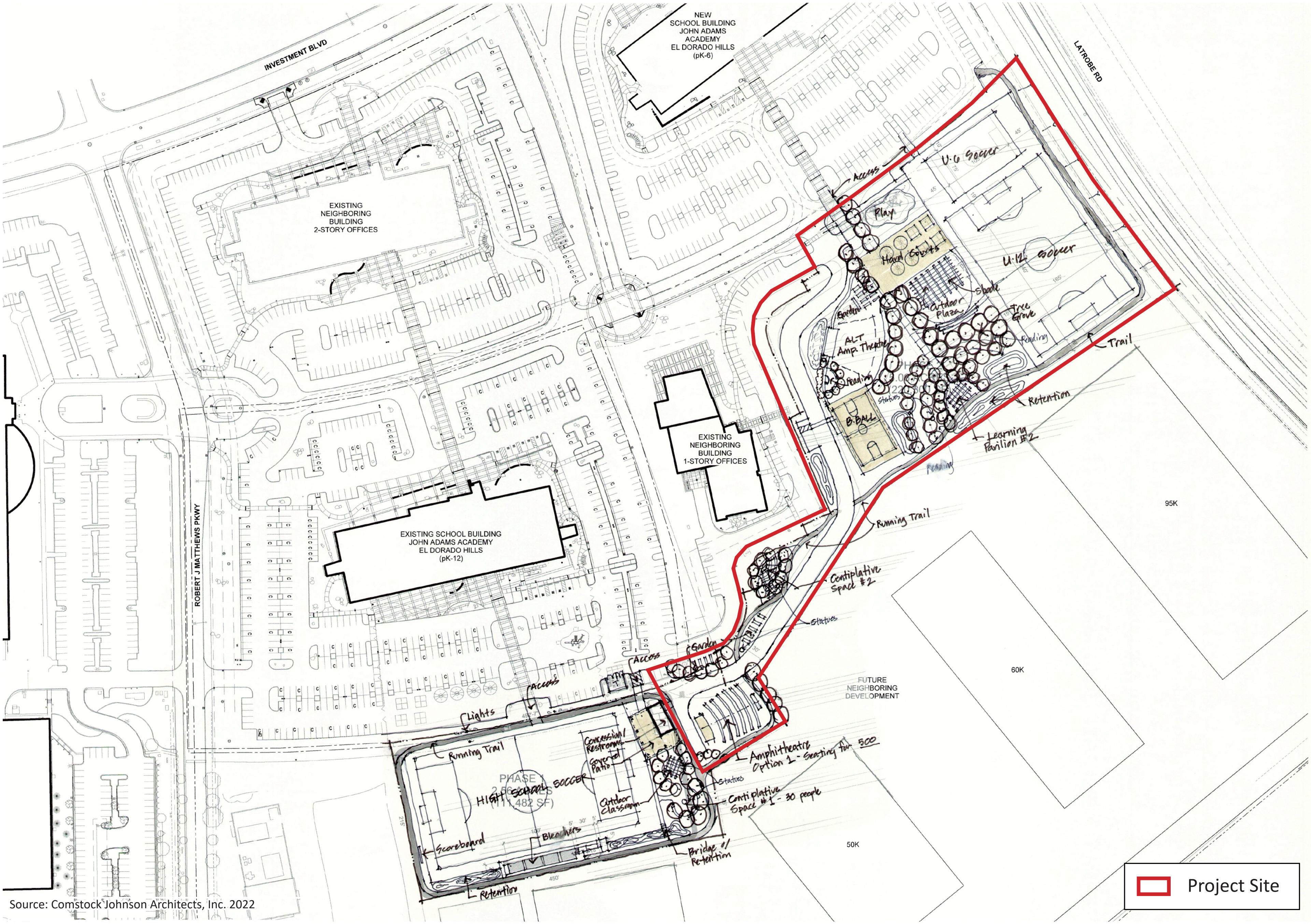

Figure 4: Proposed Site Design

John Adams Academy Phase 2 Improvements Project

Initial Study/Mitigated Negative Declaration

Kimley»Horn

3.0 INITIAL STUDY CHECKLIST

NOTE: The following is a sample form that may be tailored to satisfy individual agencies' needs and project circumstances. It may be used to meet the requirements for an initial study when the criteria set forth in CEQA Guidelines have been met. Substantial evidence of potential impacts that are not listed on this form must also be considered. The sample questions in this form are intended to encourage thoughtful assessment of impacts, and do not necessarily represent thresholds of significance.

1. Project title:

John Adams Academy Phase 2 Improvements Project

2. Lead agency name and address:

John Adams Academy Board of Directors
One Sierra Gate Plaza
Roseville, CA 95678

3. Contact person and phone number:

Joseph Benson, Executive Director
(916) 888-1343

4. Project location:

The project would be located immediately south of the existing John Adams Academy facility and parking lot at 1104 Investment Boulevard, in the southern portion of El Dorado Hills Community in El Dorado County. Improvements associated with the project would be located on approximately 5 acres of the northeast portion of Accessor Parcel Number (APN) 117-720-007.

5. Project sponsor's name and address:

Joseph Benson, Executive Director
John Adams Academies, Inc.
One Sierra Gate Plaza
Roseville, CA 95678

6. General plan designation:

The project site is designated as Research and Development (R&D) in the County's General Plan.

7. Zoning:

County of El Dorado Municipal Code Zoning Map identifies the project site within the Research and Development Design Review – Community (R&D-DC) zone. Pursuant to County Code Section 130.10.040, charter schools are considered public schools and are therefore exempt from the El Dorado County Zoning Ordinance.

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The project would include but is not limited to the implementation of sports fields, an outdoor amphitheater, outdoor learning area, playground structure, hard courts, running trail, storage structures, restrooms, and a paved roadway providing access for drop-off/pick-up of students at the school. The project would connect to existing utilities and would not include any off-site improvements.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

The project site is bordered by office buildings and the existing John Adams Academy facilities and parking lots to the north and west, undeveloped land to the south, and Latrobe Road to the east. Local access is provided from Latrobe Road, Robert J. Matthews Parkway, and Investment Boulevard. The project site generally consists of undeveloped land vegetated with nonnative annual grassland and brush. Site topography includes slopes with ground surface elevations ranging from approximately 510 to 565 feet above mean sea level.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

The John Adams Academy Board of Directors has the following discretionary powers related to the proposed project:

- Adoption of the environmental document: The John Adams Academy Board of Directors will act as the lead agency as defined by the State CEQA Guidelines and will have authority to determine if the environmental document is adequate under CEQA.
- Project approval: The John Adams Academy Board of Directors will consider approval of the project and all related entitlements.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Pursuant to AB52, on February 20, 2024 the John Adams Academy Board of Directors, acting as the CEQA Lead Agency, informed fifteen (15) different tribes of the proposed project. At the time of preparation of this document no tribes have requested formal consultation.

NOTE: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

4.0 ENVIRONMENTAL ANALYSIS

Environmental Factors Potentially Affected by the Project

The environmental factors checked below would be potentially affected by this project, involving impacts identified as "Less Than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages. No environmental factors were identified as “Potentially Significant Impact.”

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

Determination

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	
I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	**X**
I find that the proposed project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.	
I find that the proposed project MAY have a potentially significant or a potentially significant unless mitigated impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	

_____________________ 09/17/24

Signature *Date*

4.1 Aesthetics

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?			**X**	
a) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?			**X**	
b) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			**X**	
c) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			**X**	

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

OR,

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

Less Than Significant Impact. Visual resources are classified as 1) scenic resources or 2) scenic views. Scenic resources include specific features of a viewing area (or viewshed) such as trees, rock outcroppings, and historic buildings. They are specific features that act as the focal point of a viewshed and are usually foreground elements. Scenic views are elements of the broader viewshed such as mountain ranges, valleys, and ridgelines. They are usually middle ground or background elements of a viewshed that can be seen from a range of viewpoints, often along a roadway or other corridor.

A list of the County's scenic views and resources is presented in Table 5.3-1 of the El Dorado County General Plan EIR (p. 5.3-3). This list includes areas along highways where viewers can see large water bodies (e.g., Lake Tahoe and Folsom Reservoir), river canyons, rolling hills, forests, or historic structures or districts that are reminiscent of El Dorado County's heritage. Latrobe Road is listed as a public scenic viewpoint from White Rock Road south to the County line. The scenic views identified from Latrobe Road are rolling hills and occasional vistas of Sacramento Valley. The project site would be located off of Latrobe Road and is within the stretch of road identified as having scenic views.

The improvements associated with the project would have a lower impact compared to the existing adjacent uses and would not block existing view views of rolling hills or the Sacramento valley from Latrobe Road. Additionally, the project does not include any large or multi-story buildings. The project does include approximately 30-foot high light poles for field lighting. However, the light poles would not completely block views of rolling hills or the Sacramento valley and would not substantially alter or impact with views from Latrobe Road.

The project site is not located along a Caltrans designated or eligible Scenic Highway. The nearest eligible Scenic Highway would be located approximately 10.7 miles east of the project site. The project site would not be visible from the Scenic Highway.

Further, the proposed project would not require the removal of any rock outcroppings or historic buildings. While tree removal is anticipated, none of the trees marked for removal carry any designation as a scenic resource. All tree removal would be conducted in compliance with County regulations. The proposed project would have less than significant impacts related to views of scenic vistas or damaging scenic resources visible from a scenic highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact. The proposed project would be located adjacent to an existing business park in an urbanized area. The project site's land use designation and zoning is currently Research and Development which allows for non-polluting manufacturing plants, research and development facilities, corporate/industrial offices, and support service facilities in a rural or campus-like setting.

The proposed outdoor recreation facilities would result in a lower impact to scenic quality than what the project site is currently zoned for. The project does not include any multi-story buildings, manufacturing plants, or corporate/industrial offices. Further, the project would include landscaping throughout the site including tree-plantings and ornamental features to improve the visual quality of the area.

The project does include light-poles for the proposed soccer fields, however they would not substantially block existing views as the poles would be of a small diameter (particularly as viewed from a distance) and the light silver/grey color of the steel poles would to blend in with the sky/background when not in use. Overall, the proposed project would not substantially degrade the existing visual character or scenic quality of the site and surrounding area.

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

Less Than Significant Impact. The proposed project would not require nighttime construction, for this reason, the proposed project would have a less than significant impact related to creation of a new source of substantial light or glare which would adversely affect day or nighttime views in the area during construction. The project would include lighting for wayfinding and safety on the project site near walking paths, restrooms, and shade shelters. Additional lighting on-site could occur from the proposed amphitheater(s), which would support John Adams Academy activities and could conclude by 10 PM. Lighting would be shielded to direct the source of light downward, consistent with the County's outdoor lighting ordinance (Ordinance 130.34, El Dorado County Code 2022).

The project would include field lighting using approximately 30 foot tall light poles for the proposed soccer fields on the east boundary of the project site. The field lighting would be directed and shielded down to prevent light pollution and would only be used for school sporting events which would conclude by 10 PM. As noted above, the field lighting would be constructed and operated in compliance with applicable El Dorado County outdoor lighting ordinances. The project would be required to adequately shield, and direct lighting such that no direct light falls outside the property line, or into the public right-of-way. The field lighting would be designed to be focused on the soccer fields and to minimize offsite spillage and glare.

Further, the project site is located adjacent to an existing industrial park with no uses that would be sensitive to the proposed field lighting. The nearest residential use is approximately 900 feet to the east and would not experience light spillover from the project due to the intervening distance. Overall, the project's compliance with applicable Federal, State, and local regulations, including El Dorado County's Municipal Code, reduces potential impacts related to light or glare from the proposed project to less than significant.

Cumulative Impacts

The potential aesthetic impacts related to views, aesthetics, and light and glare are generally site-specific. As discussed above, project-related changes would be minimal and impacts to scenic vistas would be less than significant. The proposed project would not substantially change the on-site visual character because the new visual elements would not be dissimilar from the existing visual environment. The project also would not alter the balance of the surrounding areas and they would retain their exiting character. New potential sources of light and glare from the field lighting would constructed and operated in compliance with El Dorado County Ordinance 130.34, Outdoor Lighting, and therefore would not result in a substantial contribution to new light sources in the area. Similar to the proposed project, other projects would be required to use lights that are shielded and directed. Therefore, while the proposed would make minor change the appearance of the site, this project in conjunction with other past, present, and reasonably foreseeable projects in the vicinity would follow applicable Federal, State, and local regulations pertaining to aesthetics. This would serve to minimize the effects to aesthetic resources and cumulative impacts would be less than significant.

4.2 Agriculture and Forestry Resources

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The California Department of Conservation Important Farmland Monitoring and Mapping Program (FMMP), designates the project site as Grazing Land. The project site is not currently used as grazing land for livestock. The project would not covert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance nor would the project convert any farmland to non-agricultural use. Overall, the proposed project would have no impact in this regard.

b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Impact. The project site is designated as Research and Development (R&D) in the El Dorado Hills Community Region, and zoned Research and Development Design Review – Community (R&D-DC). Additionally, the project site is not under a Williamson Act land use contract. Therefore, the proposed project would not conflict with existing zone for agricultural use or a Williamson Act contract and would result in no impact.

c) *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?*

No Impact. The project is not zoned as forest land, timberland, or timberland production and no land in the project vicinity is. Therefore, the proposed project would not conflict or cause rezoning of any forest land (as defined in Public Resource Code section 12220(g)) timberland (as defined by Public Resources Code section 4526), or zoned Timberland Production (as defined by Government Code section 51104(g)). Therefore, there is no impact from the implementation of the project related to forest land, timberland, or timberland production.

d) *Result in the loss of forest land or conversion of forest land to non-forest use?*

No Impact. Refer to c), above.

e) *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*

No Impact. Refer to a) and c)

Cumulative Impacts

The project site does not contain zoning or land use designations for agriculture, farmland, or forestland. Thus, the proposed project would not result in new impacts related to agricultural resources, nor would the proposed project result in an increase in the severity of an impact related to agricultural resources previously disclosed in the General Plan EIR. Therefore, the proposed project would not result in a cumulative impact related to agricultural land, farmland, or forestland.

4.3 Air Quality

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

Regulatory Setting

Federal

Federal Clean Air Act

Air quality is federally protected by the Federal Clean Air Act (FCAA) and its amendments. Under the FCAA, the EPA developed the primary and secondary National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants including ozone, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead. Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or “nonattainment.” Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment. Proposed projects in or near nonattainment areas could be subject to more stringent air-permitting requirements. The FCAA requires that each state prepare a State Implementation Plan (SIP) to demonstrate how it will attain the NAAQS within the federally imposed deadlines.

The U.S. Environmental Protection Agency (EPA) has designated enforcement of air pollution control regulations to the individual states. Applicable federal standards are summarized in **Table 1: State and Federal Ambient Air Quality Standards**.

State

California Air Resources Board (CARB)

CARB administers California's air quality policy. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in **Table 1**, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates.

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the SIP for meeting federal clean air standards for the State of California. Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events such as wildfires, volcanoes, etc. are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment. The applicable State standards are summarized in **Table 1**.

Table 1: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	State Standards[1]		Federal Standards[2]	
		Concentration	Attainment Status	Concentration[3]	Attainment Status
Ozone (O_3)	8 Hour	0.070 ppm (137 μg/m³)	N[9]	0.070 ppm	N[4]
	1 Hour	0.09 ppm (180 μg/m³)	N	NA	N/A[5]
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m³)	A	9 ppm (10 mg/m³)	A[6]
	1 Hour	20 ppm (23 mg/m³)	A	35 ppm (40 mg/m³)	A
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 μg/m³)	A	0.100 ppm[11]	U
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	-	0.053 ppm (100 μg/m³)	A
Sulfur Dioxide[12] (SO_2)	24 Hour	0.04 ppm (105 μg/m³)	A	0.14 ppm (365 μg/m³)	A
	1 Hour	0.25 ppm (655 μg/m³)	A	0.075 ppm (196 μg/m³)	A
	Annual Arithmetic Mean	NA	-	0.03 ppm (80 μg/m³)	A
Particulate Matter (PM_{10})	24-Hour	50 μg/m³	N	150 μg/m³	-U
	Annual Arithmetic Mean	20 μg/m³	N[7]	NA	-
Fine Particulate Matter ($PM_{2.5}$) [15]	24-Hour	NA	-	35 μg/m³	U/A
	Annual Arithmetic Mean	12 μg/m³	N[7]	12 μg/m³	N
Sulfates (SO_{4-2})	24 Hour	25 μg/m³	A	NA	-
Lead (Pb)[13, 14]	30-Day Average	1.5 μg/m³	-	NA	A
	Calendar Quarter	NA	-	1.5 μg/m³	A

Pollutant	Averaging Time	State Standards[1]		Federal Standards[2]	
		Concentration	Attainment Status	Concentration[3]	Attainment Status
	Rolling 3-Month Average	NA	-	0.15 $\mu g/m^3$	-
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 $\mu g/m^3$)	U	NA	-
Vinyl Chloride (C_2H_3Cl)	24 Hour	0.01 ppm (26 $\mu g/m^3$)	-	NA	-
Visibility Reducing Particles[8]	8 Hour (10:00 to 18:00 PST)	-	U	-	-

A = attainment; N = nonattainment; U = unclassified; N/A = not applicable or no applicable standard; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; – = not indicated or no information available.

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.
2. National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 $\mu g/m_3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 $\mu g/m^3$.
   Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.
3. National air quality standards are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.
4. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.
5. The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.
6. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
7 In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.
8 Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
9. The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.
10. On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as “nonattainment” for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to EPA, and EPA approves the proposed redesignation.
11. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010). The US Environmental Protection Agency (EPA) expects to make a designation for the Bay Area by the end of 2017.
12. On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following U.S. EPA initial designations of the new 1-hour SO_2 NAAQS.
13. CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure below which there are no adverse health effects determined.
14. National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.
15. In December 2012, EPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter ($\mu g/m^3$). In December 2014, EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated “unclassifiable/attainment” must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

Source: Bay Area Air Quality Management District, *Air Quality Standards and Attainment Status*, 2017 http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status.

Hazardous Air Pollutants and Toxic Air Contaminants

Toxic Air Contaminants (TACs), or in federal parlance, Hazardous Air Pollutants (HAPs), are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term acute effects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established. According to the OEHHA, cancer risk can be expressed both in terms of expected incremental incidence population-wide and as the maximum incremental increase in lifetime for an individual receptor[1].

Regional

El Dorado County Air Quality Management District (EDCAQMD)

The proposed project lies within the Mountain Counties Air Basin (MCAB). The El Dorado County Air Quality Management District (EDCAQMD) has jurisdiction over most air quality matters in El Dorado County and is tasked with implementing programs and regulations required by the federal and State Clean Air Acts. If a project is found to interfere with the region's ability to comply with federal and State air quality standards, local governments then need to consider project modifications or provide mitigation measures to eliminate the inconsistency of the project plans. The EDCAQMD has adopted rules and regulations as a means of implementing the air quality plans for El Dorado County and has also prepared the Guide to Air Quality Assessment, which provides quantitative emission thresholds and established protocols for the analysis of air quality impacts from project and plans. The Guide to Air Quality Assessment outlines quantitative and qualitative significance criteria, methodologies for the estimation of construction and operational emissions and mitigation measures to reduce significant impacts.

The EDCAQMD rules applicable to the project include the following:

- Rule 205 – Nuisance. This rule prohibits the discharge from any source such as quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, repose, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property.

[1] California Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidance Manual for Preparation of Health Risk Assessments*, February 2015. https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, page 8-15, Accessed December 4, 2023.

- Rule 215 – Architectural Coatings. This rule requires manufacturers, distributors, and users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of use of these coatings by placing limits on the VOC content of various coating categories.
- Rule 223 – Fugitive Dust. This rule governs the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. It applies to any construction or construction related activities including but not limited to, land clearing, grubbing, scraping, travel on site, and travel on access roads.
- Rule 223-1 – Fugitive Dust – Construction. This rule requires a Fugitive Dust Control Plan be submitted to the Air Pollution Control Officer prior to the start of any construction activity for which a grading permit was issued by El Dorado County.
- Rule 223-2 – Fugitive Dust – Asbestos Hazard Mitigation. This rule reduces the amount of asbestos particulate matter that may be released as a result from construction related activities through the use of required actions or mitigation.
- Rule 224 – Cutback and Emulsified Asphalt Paving Materials. This rule governs the use of asphalt and limits the VOC content in asphalt.

Clean Air Plans

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM_{10} standard). The EDCAQMD is responsible for developing Clean Air Plans, which guide the region's air quality planning efforts to attain the CAAQS. The EDCAQMD along with the other air districts which comprise the Sacramento Federal Ozone Nonattainment Area (SFONA) adopted the *2017 Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Ozone Attainment Plan). Additionally, the EDCAQMD and associated air districts within the Sacramento Federal Nonattainment Area for $PM_{2.5}$ (SFNA-$PM_{2.5}$) adopted the *$PM_{2.5}$ Implementation/Maintenance Plan and Redesignation Request for Sacramento $PM_{2.5}$ Nonattainment Area* ($PM_{2.5}$ Maintenance Plan).

Local

El Dorado County General Plan

The El Dorado County General Plan 2019 Update Public Health, Safety, and Noise Element includes the following goals, policies, and objectives for Air Quality:

Goal 6.7. Air Quality Maintenance: Strive to achieve and maintain ambient air quality standards established by the EPA and CARB and minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.

Objective 6.7.1.: Adopt and enforce Air Quality standards to reduce the health impacts caused by harmful emissions.

Policy 6.7.1.1.: Improve air quality through land use planning decisions.

Policy 6.7.1.2.: Support local and regional air quality improvement efforts.

Objective 6.7.2.: Reduce motor vehicle air pollution by developing programs aimed at minimizing congestion and reducing the number of vehicle trips made in the County and encouraging the use of clean fuels.

Policy 6.7.2.2.: Encourage, both through County policy and discretionary project review, the use of staggered work schedules, flexible work hours, compressed work weeks, teleconferencing, telecommuting, and carpool/van pool matching as ways to reduce peak-hour vehicle trips.

Policy 6.7.2.3.: To improve traffic flow, synchronization of signalized intersections shall be encouraged as a means to reduce congestion, conserve energy, and improve air quality.

Policy 6.7.2.5.: Upon reviewing projects, the County shall support and encourage the use of, and facilities for, alternative-fuel vehicles to the extent feasible. The County shall develop language to be included in County contract procedures to give preference to contractors that utilize low-emission heavy-duty vehicles.

Policy 6.7.2.6.: The County shall investigate the replacement of its fleet vehicles with more fuel-efficient alternative fuel vehicles (e.g., liquid natural gas, fuel cell vehicles).

Objective 6.7.2.: Reduce motor vehicle air pollution by developing programs aimed at minimizing congestion and reducing the number of vehicle trips made in the County and encouraging the use of clean fuels.

Policy 6.7.6.1.: Ensure that new facilities in which sensitive receptors are located (e.g., schools, childcare centers, playgrounds, retirement homes, and hospitals) are sited away from significant sources of air pollution.

Objective 6.7.7.: Reduce construction related, short-term emissions by adopting regulations which minimize their adverse effects.

Thresholds

El Dorado Hills, including the project site, is located within the Mountain Counties Air Basin (Basin) and is within the jurisdictional boundaries of the El Dorado County Air Quality Management District (EDCAQMD). The western El Dorado County portion of the MCAB is designated as a non-attainment area for the State and federal ozone, federal particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State particulate matter 10 microns in diameter (PM_{10}) standards. El Dorado County is designated attainment or unclassified for all other ambient air quality standards (AAQS).

In compliance with regulations, due to the non-attainment designations of the area, the EDCAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The EDCAQMD along with the other air districts which comprise the Sacramento Federal Ozone Nonattainment Area (SFONA). The most recent ozone plan for the SFONA is the *2017 Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Ozone Attainment Plan), which was adopted by the EDCAQMD on August 24, 2017. The California Air Resources Board (CARB) subsequently conducted a public meeting to consider approval of the Ozone Attainment Plan and approved the plan on November 16, 2017.

Additionally, air districts within the Sacramento Federal Nonattainment Area for $PM_{2.5}$ (SFNA-$PM_{2.5}$) prepared the *$PM_{2.5}$ Implementation/Maintenance Plan and Redesignation Request for Sacramento $PM_{2.5}$ Nonattainment Area* ($PM_{2.5}$ Maintenance Plan) to address how the region attained and would continue to attain the 24-hour $PM_{2.5}$ standard. Further, on May 10, 2017, EPA found that the SFNA-$PM_{2.5}$ attained the 2006 24-hour $PM_{2.5}$ NAAQS by the attainment date of December 31, 2015. The $PM_{2.5}$ Maintenance Plan will be updated and submitted in the future based on the clean data finding made by the EPA.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures (TCMs) to be implemented in the region to attain the State and federal standards within the EDCAQMD. Adopted EDCAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated non-attainment, consistent with applicable air quality plans. The EDCAQMD's adopted thresholds of significance for criteria pollutant emissions are presented in **Table 2: EDCAQMD Criteria Pollutant Thresholds of Significance**. The EDCAQMD Guide to Air Quality Assessment provides these quantitative emission thresholds and established protocols for the analysis of air quality impacts from projects and plans. Project related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in **Table 2** are exceeded.

A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3, which is a nonattainment pollutant, if the project's construction or operational emissions would exceed the EDCAQMD ROG or NO_x thresholds shown in **Table 2**. These emission-based thresholds for O_3 precursors are intended to serve as a surrogate for an "O_3 significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly (see the previous discussion of O3 and its sources), and the effects of an individual project's emissions of O_3 precursors (ROG and NO_x) on O_3 levels in ambient air cannot be reliably and meaningfully determined through air quality models or other quantitative methods. According to the EDCAQMD, if ROG and NO_X are less than significant during construction and operations, then exhaust CO, SO_X, PM_{10}, and $PM_{2.5}$ would also be less than significant.[2]

Table 2: EDCAQMD Criteria Pollutant Thresholds of Significance

Criteria Air Pollutants	Construction-Related	Operational-Related
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)
Reactive Organic Gases (ROG)	82	82
Nitrogen Oxides (NO_X)	82	82

Source: EDCAQMD 2022
Notes: EDCAQMD = El Dorado County Air Quality Management District; lb/day = pounds per day; ROG = Reactive Organic Gases; NOx = nitrogen oxides

[2] El Dorado County Air Quality Management District, *Guide to Air Quality Assessment*, February 2022. Available at: https://www.edcgov.us/Government/AirQualityManagement/Pages/guide_to_air_quality_assessment.aspx. Accessed December 5, 2023.

a) *Conflict with or obstruct implementation of the applicable air quality plan?*

Less than Significant Impact. The proposed project includes the construction of additional park and recreational facilities and associated improvements at an existing park site. No permanent on-site generators or other on-site sources of air quality emissions are required for operation. As a recreational facility, sources of emissions would generally be from leaf blowers, small hand tools, or other small to moderately sized equipment used for regular maintenance, but the associated emissions would be only for the duration of use and would be intermittent.

During construction, various grading and earth-moving activities would take place. Disturbance associated with the proposed project would include road paving, limited digging to build fences, and construction of the playground area. Dust emissions from soil disturbance would take place; however, the project would be required to obtain a standard Fugitive Dust Plan approval from the EDCAQMD. In addition, the proposed project would not exceed any quantitative emission threshold (see discussion below) indicating that the project would not make a cumulatively considerable contribution to a new or existing violation of an air quality standard. Along with implementation of standard Best Management Practices during project construction, there would be a less than significant impact with regard to air quality plans.

b) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

Less than Significant Impact.

Construction Emissions

Project construction activities would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the project area include ozone-precursor pollutants (i.e., ROG and NO_X). Construction-generated emissions are short term and temporary, lasting only while construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the EDCAQMD's thresholds of significance. According to the EDCAQMD, if ROG and NO_X are less than significant during construction and operations, then exhaust CO, SO_X, PM_{10}, and $PM_{2.5}$ would also be less than significant.[3]

Construction results in the temporary generation of emissions during site preparation, site grading, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities, as well as weather conditions and the appropriate application of water.

The duration of construction activities associated with the project are estimated to last approximately 13 months, beginning in 2024 and concluding in 2025. The project's construction-related emissions were calculated using the EDCAQMD-approved CalEEMod computer program[4], which is designed to model emissions for land use development projects, based on typical

[3] El Dorado County Air Quality Management District, *Guide to Air Quality Assessment*, February 2022. Available at: https://www.edcgov.us/Government/AirQualityManagement/Pages/guide_to_air_quality_assessment.aspx. Accessed December 5, 2023.
[4] California Emissions Estimator Model (CalEEMod) Version 2022.1.1.

construction requirements. Project site preparation is anticipated to begin in summer 2024. Project grading, building construction, paving and architectural coating is anticipated to occur in phases after the completion of site preparation. The project would include approximately 45,000 cubic yards (cy) of balanced cut and fill. Construction is modeled to be completed summer 2025. The exact construction timeline is unknown; however, to be conservative, earlier dates were utilized in the modeling. This approach is conservative given that emissions factors decrease in future years due to regulatory and technological improvements and fleet turnover. See **Appendix A** for additional information regarding the construction assumptions used in this analysis. The project's predicted maximum daily construction-related emissions are summarized in **Table 3: Construction-Related Emissions**.

Table 3: Construction-Related Emissions

Construction Year	Pollutant (maximum tons per year)[1]	
	Reactive Organic Gases (ROG)	**Nitrogen Oxides (NO_X)**
2024	0.22	2.04
2025	0.03	0.30
Maximum	**0.22**	**2.04**
EDCAQMD Significance Threshold [2]	*82*	*82*
Exceed EDCAQMD Threshold?	**No**	**No**

1. These emissions reflect CalEEMod "unmitigated" output, which does not account for implementation of the project's fugitive dust control strategies, including watering of the project site and unpaved roads three times per day, and restricting vehicle speed on unpaved roads to 15 miles per hour.
2. EDCAQMD, February 2002.

Source: Refer to the CalEEMod version 2022.1.1.21 outputs provided in **Appendix A**.

Fugitive Dust Emissions. Fugitive dust emissions are associated with land clearing, cut-and-fill operations, and truck travel on unpaved roadways. Dust emissions also vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions. Fugitive dust emissions may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project vicinity. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. However, the project would be consistent with EDCAQMD's Rule 223-1 screening approach in alignment with the South Coast Air Quality Management District's Rule 403 (Best Available Fugitive Dust Control Measures), including watering of the project site and unpaved roads every two hours or as necessary based on earth-moving, and restricting vehicle speed on unpaved roads to 15 miles per hour. Furthermore, the project would be required to obtain a standard Fugitive Dust Plan approval from the EDCAQMD, which would reduce fugitive dust impacts to less than significant for project construction.

Construction Equipment and Worker Vehicle Exhaust. Exhaust emission factors for typical diesel-powered heavy equipment are based on the CalEEMod program defaults. Variables factored into estimating the total construction emissions include: level of activity, length of construction period, number of pieces/types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported onsite or offsite. Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on site as the equipment is used, and emissions from trucks transporting materials and workers to and from the site. Emitted pollutants would include ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$. As detailed in **Table 3**, project construction emissions would not exceed the EDCAQMD thresholds and construction emissions would not result in a potentially significant impact. Therefore, construction air quality impacts would be less than significant.

ROG Emissions. In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. In accordance with the methodology prescribed by the EDCAQMD, the ROG emissions associated with paving have been quantified with CalEEMod. The highest concentration of ROG emissions would be generated from grading. However, ROG emissions in this phase would be below the significance threshold of 82 tons per year. Therefore, construction air quality impacts from ROG emissions would be less than significant.

Summary. As shown in **Table 3**, ROG and NO_X construction-related emissions would not exceed the EDCAQMD significance thresholds during construction; therefore, the project would have a less than significant impact. According to the EDCAQMD, if ROG and NO_X are less than significant during construction, then exhaust CO, SO_X, PM_{10}, and $PM_{2.5}$ would also be less than significant. As such, the proposed project's construction would not worsen ambient air quality, create additional violations of federal and state standards, or delay the Basin's goal for meeting attainment standards. Impacts would be less than significant.

Operational Emissions

Operational emissions for the project would be generated from mobile sources (burning of fossil fuels in cars); energy sources (lighting and water heating); and area sources (landscape equipment and household products). **Table 4: Project Operational Emissions** shows that the project's maximum emissions would not exceed EDCAQMD operational thresholds.

Table 4: Project Operational Emissions

Emissions Source	Pollutant (maximum tons per year)[1]	
	Reactive Organic Gases (ROG)	**Nitrogen Oxides (NO_X)**
Area	0.01	0.00
Energy	0.00	0.00
Mobile	0.03	0.02
Total Project Emissions	**0.04**	**0.02**
EDCAQMD Significance Threshold[2]	*82*	*82*
EDCAQMD Threshold Exceeded?	**No**	**No**
1. Emissions were calculated using CalEEMod version 2022.1.1.21. 2. ECAQMD, February 2002.		
Source: Refer to the CalEEMod outputs provided in **Appendix A**.		

Area Source Emissions. Area source emissions would be generated due to the use consumer products, architectural coating, and landscaping.

Energy Source Emissions. Energy source emissions would be generated as a result of electricity and natural gas usage associated with the project. The primary use of electricity and natural gas by the project would be for water heating, lighting, and appliances.

Mobile Source Emissions. Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport PM_{10} and $PM_{2.5}$). However, CO tends to be a localized pollutant, dispersing rapidly at the source. Project-generated vehicle emissions have been estimated using CalEEMod. The project site is adjacent to and would predominantly serve an existing school. Trips are not expected to increase during weekdays as students would still be attending school and the project would not increase school enrollment. As discussed in Section 4.17, Transportation, the project would generate approximately 4 new net external trips on the weekends (Saturday) for the soccer complex that would be constructed as part of the project.

Total Operational Emissions. As shown in **Table 4**, operational emissions for ROG and NO_X would not exceed the EDCAQMD significance thresholds during construction; therefore, the project would have a less than significant impact. According to the EDCAQMD, if ROG and NO_X are less than significant during operations, then exhaust CO, SO_X, PM_{10}, and $PM_{2.5}$ would also be less than significant. Therefore, the project would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts would occur. Project operational emissions would be less than significant.

Cumulative Short-Term Emissions

The Mountain Counties Air Basin is designated nonattainment for O_3, PM_{10}, and $PM_{2.5}$ for State standards and nonattainment for O_3 and $PM_{2.5}$ for federal standards. As discussed above, the project's construction-related emissions would not have the potential to exceed the EDCAQMD significance thresholds for criteria pollutants.

Since these thresholds indicate whether an individual project's emissions have the potential to affect cumulative regional air quality, it can be expected that the project-related construction emissions would not be cumulatively considerable. The EDCAQMD recommends consistency Rule 223-1 for all projects whether or not construction-related emissions exceed the thresholds of significance. Compliance with EDCAQMD construction-related mitigation requirements is considered to reduce cumulative impacts at a Basin-wide level. As a result, construction emissions associated with the project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Cumulative Long-Term Impacts

The EDCAQMD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The EDCAQMD developed the operational thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. Therefore, a project that exceeds the EDCAQMD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.

As shown in **Table 4**, the project's operational emissions would not exceed EDCAQMD thresholds. As a result, operational emissions associated with the project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. Sensitive land uses are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The nearest sensitive receptors to the project site include the school structures and a medical office approximately 100 feet to the north.

Toxic Air Contaminants

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust which is a known Toxic Air Contaminants (TAC). Diesel exhaust from construction equipment operating at the site poses a health risk to nearby sensitive receptors. However, the use of diesel-powered construction equipment would be episodic and would occur in various phases throughout the project site. Construction is subject to and would comply with California regulations (e.g., California Code of Regulations, Title 13, Division 3, Article 1, Chapter 10, Sections 2485 and 2449), which reduce DPM and criteria pollutant emissions from in-use off-road diesel-fueled vehicles and limit the idling of heavy-duty construction equipment to no more than five minutes. These regulations would further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions.

The duration of construction activities for the project is estimated to take approximately 13 months. Construction-related activities would result in project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations. Diesel exhaust from construction equipment operating at the site would be temporary and short in duration for nearby sensitive receptors. The nearest sensitive receptors include the school structures and a medical office approximately 100 feet to the north. Based on the short duration of construction activities and the AQMD CEQA Guide, potential diesel exhaust impacts would be considered less than significant.

Operational emission sources would be related to regular maintenance, such as leaf blowers, hand tools, and maintenance vehicles. Therefore, operational emissions would not be considered a substantial source of TACs and this impact related to operational TAC emissions would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact. The project would include the development of a park and associated facilities. EDCAQMD lists common facilities that produce odors, including wastewater treatment plants, landfills, refineries, manufactories, processing plants, petroleum refineries, and coffee roasters. The project would not include any of the listed facilities. During project construction, equipment and vehicles that utilize diesel fuels would create localized odors on-site. Construction odors would be temporary, ceasing upon construction completion, and would not likely be noticeable for extended periods of time beyond the boundaries of the project site. Operation of the proposed project would not result in the generation of adverse odors. Moreover, the project is not located in the vicinity of any existing or planned land uses that would be considered major sources of odors. Therefore, the odor impact would be less than significant.

Cumulative Impacts

As described in the EDCAQMD Guide to Air Quality Assessment, EDCAQMD's primary criterion for determining whether a project has significant cumulative impacts is whether the project is consistent with an approved plan or mitigation program of District-wide or regional application in place for the pollutants emitted by the project. This criterion is applicable to both the construction and operation phases of the project.

As discussed in Threshold b) above, the project would not exceed the any EDCAQMD criteria pollutant thresholds during construction or operations. Therefore, the project would not conflict with or delay the implementation of EDCAQMD attainment plans and would result in a less than significant impact. The EDCAQMD notes that the nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size by itself to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. Therefore, the project's cumulative contribution of air quality emissions would be less than significant, and the project's cumulative air quality impacts would also be less than cumulatively considerable.

4.4 Biological Resources

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		**X**		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?			**X**	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological			**X**	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			**X**	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			**X**	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				**X**

a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Less Than Significant Impact with Mitigation. Special-status species includes plant and/or wildlife species that are legally protected under the Federal Endangered Species Act, the California Endangered Species Act (ESA), or other regulations, or are considered rare enough by the scientific community and trustee agencies to warrant special consideration. A *Biological Resources Assessment* (BRA) for the proposed project site was prepared by ECORP Consulting, Inc. in January 2024, and is included as **Appendix B** to this IS/MND. The BRA conducted a literature review, including California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) data, and a site reconnaissance visit in October 2023 for the project site/Biological Study Area (BSA).

Special Status Plants

Vegetation communities on the site include previously disturbed nonnative annual grassland and a small portion of urban/developed landscape where the project would connect to adjacent parking lots. The BRA analyzed the potential of 22 special status plant species, identified through literature review, to occur on the project site. See Table 2 in **Appendix B** for the list of species analyzed. The BRA found no special-status plant species observed or mapped on the project site. Additionally, due to the lack of suitable habitat and historic occurrences within the project site footprint and 5-mile vicinity, no impacts to special-status plants are anticipated as a result of the proposed project. In addition, reconnaissance level plant surveys were conducted in October 2023 and no special-status plant species were observed. Accordingly, no impacts to special-status plant species are anticipated from the proposed project.

Special Status Wildlife

The BRA analyzed the potential of 42 special status wildlife species, identified through literature review, to occur on the project site, however, no special-status wildlife have been mapped on the project site. See Table 2 in **Appendix B** for the list of species analysis. A number of these species require specialized habitats such as vernal pools, marshes, ponds, lakes, rivers, ocean, forest, and caves, among others, which are not found on the project site. Due to lack of suitable habitat and/or lack of recent occurrences in the project vicinity, 34 of these species are not anticipated to occur and are therefore not discussed further in this analysis. Descriptions and discussion of potential for occurrence for the remaining eight (8) wildlife species—Crotch's bumble bee, Blainville's horned lizard, white-tailed kite, Cooper's hawk, Swainson's hawk, burrowing owl, yellow-billed magpie, and tricolored blackbird—are provided in more detail below.

Crotch's bumble bee (Bombus crotchii)

The Crotch's bumble bee is a candidate for listing as endangered under the California ESA. There are no CNDDB occurrences of this species within 5 miles of BSA (**Appendix B**). However, the annual grassland onsite represents potentially suitable habitat for Crotch's bumble bee. Therefore, Crotch's bumble bee has potential to occur onsite. Though no impact is anticipated to occur, project development could result in an impact Crotch's bumble bee or their nests. To ensure potential impacts to the species would be less than significant, Mitigation Measure (**MM**) **BIO-1** would be implemented. **MM BIO-1** would require surveying of the project site during the blooming season prior to ground disturbing activities and compliance with all applicable laws for the protection of the species. Thus, impacts to Crotch's bumble bee would be less than significant.

Blainville's Horned Lizard (Phrynosoma blainvillii)

Blainville's horned lizard is considered a CDFW Species of Special Concern (SSC). This diurnal species can occur within a variety of habitats including scrubland, annual grassland, valley-foothill woodlands and coniferous forests, though it is most common along lowland desert sandy washes and chaparral (**Appendix B**). There is one CNDDB occurrence of this species within 5 miles of BSA (**Appendix B**). The annual grassland onsite represents marginally suitable habitat for Blainville's horned lizard. Thought the Blainville's horned lizard has low potential to occur onsite, project development could result in impacts to individual Blainville's horned lizard. To ensure potential impacts to the species would be less than significant, **MM BIO-2** would be implemented. **MM BIO-2** would require preconstruction surveys 72 hours prior to the start of ground or vegetation disturbing activities. Thus, impacts to Blainville's horned lizard would be less than significant.

Nesting Birds and Raptors

Trees and shrubs within and adjacent to the project site provide suitable nesting substrate for bird species protected by Migratory Bird Treaty Act (MBTA). Impacts to active nests belonging to MBTA- and California Fish and Game Code (CFGC)-protected bird species could occur from construction activities. Indirect effects including project-related noise and vibration generated from nearby construction activities may disrupt nesting activity or nest fitness that could result in nest abandonment, potentially to the point of nestling mortality. Therefore, active nests of MBTA-protected species could be impacted by the project.

As noted in the BRA completed for the project site, three (3) raptor species: Cooper's hawk, Swainson's hawk, and white-tailed kite, and two (2) non-raptor species: yellow-billed magpie and tricolored blackbird, were found to have potential to occur on the project site due to mapped CNDDB occurrences in the area and/or suitable habitat. Burrowing Owl were also found to have potential to occur on-site and are analyzed further below.

Potential impacts to raptor species, which includes the Cooper's hawk, Swainson's hawk, and white-tailed kite would be reduced to less than significant with the implementation of **MM BIO-3**. **MM BIO-3** would require preconstruction surveys for raptor nests within 14 days prior to the start of ground or vegetation-disturbing activities. In addition, potential impacts to no-raptor species, which includes yellow-billed magpie and tricolored blackbird would be reduced to less than significant with the implementation of **MM BIO-4. MM BIO-4** would require preconstruction nesting bird surveys within 14 days prior to the start of ground or vegetation-disturbing activities.

Therefore, with the implementation of **MM BIO-3** and **MM BIO-4**, impacts to nesting birds and raptors from development of the proposed project would be considered less than significant.

Burrowing Owl (Athene cunicularia)

There are two CNDDB occurrences of this species within 5 miles of BSA (**Appendix B).** No burrows potentially suitable for burrowing owl were observed during the reconnaissance survey, and no burrowing owls, whitewash, or other evidence of occupation by burrowing owls were observed.

However, the annual grasslands on-site are a potentially suitable burrow habitat, additionally, Burrowing owl could forage within the vicinity of the project site. Project construction and vibration could disturb burrowing owls through noise, visual distraction, or direct impacts to occupied habitat. Implementation of **MM BIO-5** would reduce potential impacts to burrowing owls to less than significant. **MM BIO-5** would require preconstruction surveys, appropriate avoidance buffers, or exclusion protocol should individuals be detected. Overall, impacts to special status species would be less than significant with mitigation incorporated.

<u>Mitigation Measures:</u>

MM BIO-1: If the Crotch's bumble bee is legally protected under the California ESA as a Candidate or Listed species at the time ground-disturbing activities are scheduled to begin, preconstruction surveys shall be conducted in accordance with CDFW's Survey Considerations for California ESA Candidate Bumble Bee Species during the blooming period immediately prior to commencement of project ground disturbing activities.

A minimum of three Crotch's bumble bee preconstruction surveys shall be conducted at 2- to 4-week intervals during the colony active period (April through August) when Crotch's bumble bees are most likely to be detected. Non-lethal surveys shall be completed by a biologist who either holds a Memorandum of Understanding to capture and handle Crotch's bumble bee (if netting and chilling protocol is to be utilized), or by a CDFW-approved biologist who is experienced in identifying native bumble bee species (if surveys are restricted to visual surveys that will provide high-resolution photo documentation for species verification). The surveyor shall walk through all areas of suitable habitat focusing on areas with floral resources. Surveys shall be completed at a minimum of one person-hour of searching per 3 acres of suitable habitat during suitable weather conditions (sustained winds less than 8 miles per hour, mostly sunny to full sun, temperatures between 65° and 90°F) at an appropriate time of day for detection (at least 1 hour after sunrise and at least 2 hours before sunset, though ideally between 9 AM and 1 PM).

If Crotch's bumble bees are detected, CDFW shall be notified by the designated biologist as further coordination may be required to avoid or mitigate certain impacts. If an active Crotch's bumble bee nest is detected, an appropriate no-disturbance buffer zone (including foraging resources and flight corridors essential for supporting the colony) shall be established around the nest to reduce the risk of disturbance or accidental take and the designated biologist shall coordinate with CDFW to determine if an Incidental Take Permit under Section 2081 of the California ESA will be required. Nest avoidance buffers may be removed at the completion of the flight season and/or once the qualified biologist deems the nesting colony is no longer active. If no nests are found but the species is present, a full-time qualified biological monitor shall be present during vegetation or ground-disturbing activities that are scheduled to occur during the queen flight period (February through March), colony active period

(March through September), and/or gyne flight period (September through October).

MM BIO-2: A qualified biologist shall conduct a preconstruction survey for Blainville's horned lizard within all suitable habitat in the project work area 72 hours prior to the start of ground- or vegetation disturbing activities. Any individuals discovered in the project work area immediately prior to or during project construction activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the project work area where they were found.

MM BIO-3: If construction begins during February 1 to September 30, a qualified biologist shall conduct a preconstruction survey for raptor nests onsite and a 500-foot buffer around the project within 14 days prior to the start of ground- or vegetation-disturbing activities. Any active nests are observed shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.

MM BIO-4: If construction begins during February 1 to September 30, a qualified biologist shall conduct a preconstruction nesting bird survey onsite and a 100-foot buffer around the project within 14 days prior to the start of ground- or vegetation-disturbing activities. Any active nests observed, shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.

MM BIO-5: Pre-construction burrowing owl surveys shall be conducted accordance with the California Department of Fish and Game Staff Report on Burrowing Owl Mitigation (CDFG, 2012). Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the start of project ground-disturbing activities, a pre-construction survey with a 500-foot buffer to the extent property access is authorized shall be conducted by a qualified biologist knowledgeable in the identification of burrowing owl.

- If, as determined by a qualified biologist, construction activities will not adversely affect occupied burrows or disrupt breeding behavior, construction may proceed without any restriction related to burrowing owls.
- If dens and/or burrows that could support burrowing owls are discovered during the pre-construction surveys, the avoidance buffers outlined below shall be observed. No work would occur within these buffers unless the qualified biologist approves and monitors the activity.

Burrowing Owl (active burrows):

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting Sites	4/1-8/15	200m	500m	500m
Nesting Sites	8/16-10/15	200m	200m	500m
Nesting Sites	10/16-3/31	50m	100m	500m

i. If burrowing owl are found within these recommended buffers and avoidance is not possible, burrow and/or den exclusion would be conducted by qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow and/or den is confirmed empty through non-invasive methods, such as surveillance. Replacement of occupied burrows with artificial dens and/or burrows shall occur at a ratio of one burrow collapsed to one artificial den and/or burrow constructed (1:1) to mitigate for evicting burrowing and the loss of dens and/or burrows. Species may attempt to colonize or re-colonize an area that will be impacted; thus, ongoing surveillance shall occur at excluded burrows and/or dens at a rate that is sufficient to detect species if they return.

ii. Burrowing owls should not be excluded from burrows during the breeding season unless a qualified biologist has determined that a pair of owls is no longer actively nesting (e.g., the young have been taken by predators, or perished for some other reason), or where the juveniles are foraging independently and capable of independent survival, during the breeding season (February 1 through August 31). During the non-breeding season burrowing owls shall not be excluded from burrows unless or until a Burrowing Owl Exclusion Plan is developed by a qualified biologist consistent with the recommendations of CDFW's 2012 Staff Report on Burrowing Owl Mitigation and submitted to the Kern County Planning and Natural Resources Department. A qualified biologist will monitor the burrow for a minimum of three days prior to proposed burrow excavation to document the lack of usage of the burrow for active nesting.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Less than Significant Impact. As there are no streams on or near the project site, there is no riparian habitat. Additionally, the US Fish and Wildlife Service did not identify any other sensitive natural communities on the National Wetlands Mapper Inventory. No natural communities of special concern, wetlands, or waters of the United States were identified within the project site. The project would have a less than significant impact on these habitats.

c) *Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological?*

Less Than Significant Impact. As identified from the US Fish and Wildlife National Wetlands Mapper, there are no identified state or federally protected wetlands mapped within the project site (**Appendix B**). Therefore, there is a less than significant impact.

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Less Than Significant Impact. The project site is located adjacent to existing school grounds and a business park. The project site does not have the potential to serve as a wildlife movement corridor for any wildlife species due to the close proximity to developed lands and roadways. There are no unique habitat features present such as wetlands, other aquatic habitats, or woodlands. Additionally, the project site is not located in an area designated by the County as an Important Biological Corridor or Priority Conservation Area (El Dorado County 2017). Further, biologists observed no suitable habitat for nursery sites (e.g., deer fawning grounds, waterbird rookeries) during the site reconnaissance visit (**Appendix B**).

The project contains ornamental trees and shrubs, which could be used by raptors and other migratory birds during their nesting season. If these trees are removed during nesting seasons for these birds, this could have a direct, adverse impact. However, with the implementation of **MM BIO-3 and MM BIO-4**, impacts would be reduced to a level that would be less than significant. Therefore, the project would have a less than significant impact with mitigation incorporated on the movement of any native resident or wildlife species or established migratory wildlife corridors, or use of native wildlife nursery sites.

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Less Than Significant Impact. There are no oak woodlands present on the project site. Therefore, the project would not conflict with El Dorado County Oak Resources Conservation Ordinance No. 5061. The project would have a less than significant impact in this regard.

f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

No Impact. The proposed project would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impacts would occur.

<u>Cumulative Impacts</u>

Overall, the project is a previously disturbed with existing development located next to an urban environment. Therefore, the development of project site would not be cumulatively considerable. In addition, the site in not located within a known habitat corridor and does not contain any riparian habitat, federally protected wetlands, or other sensitive natural communities. Additionally, the project would comply with applicable policies and regulations, and mitigation measures **MM BIO-1** through **MM BIO-5** would reduce project-level potential biological resource impacts to less than significant. Therefore, with the above-mentioned mitigation measures the project would have a less than significant impact on cumulative biological resources.

4.5 Cultural Resources

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
c) Disturb any human remains, including those interred outside of dedicated cemeteries?			X	

a) Cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?

Less Than Significant Impact. A *Cultural Resources Inventory Report* was prepared for the project in December 2023 by ECORP Consulting, Inc., which is included as **Appendix C** and utilized in this analysis. The *Cultural Resources Inventory Report* conducted records searches, Sacred Lands File (SLF) search, and a pedestrian survey.

A California Historical Resources Information System (CHRIS) records search was requested at the North Central Information Center (NCIC) at California State University, Sacramento on September 29, 2023 (NCIC File No.: ELD-23-83). The results of the records search indicated two previous cultural resources investigations that included the entire project site (**Appendix C**). The cultural resource investigations identified 25 previously recorded pre-contact and historic-era cultural resources located within 0.5-miles of the project site and no previously recorded cultural resources within the project site.

In addition to the CHRIS records search, the following references were also reviewed and found no cultural resources located on or in the immediate vicinity of the project site: Built Environment Resource Directory (OHP 2022); Historic Property Data File for El Dorado County (OHP 2012); the National Register Information System (National Park Service [NPS] 2023); Office of Historic Preservation, California Historical Landmarks (CHL; OHP 2023); CHL (OHP 1996 and updates); California Points of Historical Interest (OHP 1992 and updates); Directory of Properties in the Historical Resources Inventory (1999); Caltrans Local Bridge Survey (California Department of Transportation [Caltrans] 2019); Caltrans State Bridge Survey (Caltrans 2018); and Historic Spots in California (Kyle 2002).

A SLF search request was sent to the California Native American Heritage Commission (NAHC) on September 29, 2023. The NAHC failed to indicate the presence of Native American cultural resources within the project site (**Appendix C**).

Overall, there were no historical resources identified on or in the immediate vicinity of the project site. Therefore, the project would not result in an adverse change in the significance of a historical resource pursuant to in § 15064.5. Impacts to historical resources from the development of the proposed project would be less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less Than Significant Impact with Mitigation. As noted above, records requests conducted found no archaeological resources located on the project site. In addition to the above, a review of the El Dorado County Archaeological Resources Directory conducted by the NCIC did not reveal any resources in the vicinity of the project site.

The review of aerial photographs and maps of the project site was also conducted to identify the potential for buried archaeological sites (**Appendix C**). The aerial imagery shows that the project site was primarily used for ranching purposes up until 1949, when the site was left as a vacant field. Therefore, resulting in a low potential for buried archaeological resources to be found on site.

Further, According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, two soil types exist within the project site, Auburn very rocky silt loam and Auburn silt loam (**Appendix C**). Auburn very rocky silt loam, 2 to 30 percent slopes (AxD) is a well-drained soil type that is derived from residuum weathered from basic igneous rock and/or basic residuum weathered from metamorphic rock. The depth to bedrock is between 14 and 18 inches. Auburn silt loam, 2 to 30 percent slopes (AwD) is a well-drained soil type that is derived from residuum weathered from basic igneous rock and/or basic residuum weathered from metamorphic rock. The depth to bedrock is between 14 and 18 inches. There is a low potential for buried pre-contact archaeological sites to exist within the project site due to the shallow depth of bedrock, which restricts the depth of cultural deposits.

Lastly, an intensive pedestrian field survey was conducted on October 10, 2023 by Archaeologist Erica Ramirez-Schroeder under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* using 15-meter transects over 100% of the project site. As previously noted, all of the project site had previously been subject to past cultural resources investigation, with no resources found on-site. The survey conducted for the proposed project on October 10, 2023 also did not identify any archaeological material or surface manifestation indicating the presence of subsurface archaeological deposits.

Overall, there were no archaeological resources identified on-site and the potential for archaeological resources was found to be low. Though the circumstances would present a low possibility, there is the potential of unanticipated discovery of subsurface archaeology resources during construction. Therefore, **MM CUL-1** would be implemented to reduce potential impacts from the unanticipated discovery of cultural resources. With the implementation of **MM CUL-1** the project would not result the substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5, and impacts would be less than significant.

Mitigation Measures:

MM CUL-1: If subsurface deposits believed to be historical, archaeological, or cultural in origin are discovered during construction, all work must halt within a 50-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

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

Less Than Significant Impact. No human remains are known to be present within the project site. If human remains are found, those remains would require proper treatment in accordance with applicable laws, including Health and Safety Code (HSC) §§ 7050.5-7055 and PRC § 5097.98 and § 5097.99. HSC §§ 7050.5-7055 describes the general provisions for treatment of human remains. Specifically, HSC § 7050.5 prescribes the requirements for the treatment of any human remains that are accidentally discovered during excavation of a site. HSC § 7050.5 requires that if human remains are found during excavation, excavation would be halted in the vicinity of the discovery and any area that is reasonably suspected to overlay adjacent remains shall remain undisturbed until the County Coroner has investigated, and appropriate recommendations have been made for the treatment and disposition of the remains. As required by state law, the procedures set forth in PRC § 5097.98 would be implemented, including evaluation by the County Coroner and notification of the NAHC. The NAHC would then designate the "Most Likely Descendent" of the unearthed human remains. Compliance with the established regulatory framework (i.e., HSC § 7050.5-7055 and PRC §§ 5097.98 and 5097.99) would ensure potential project impacts concerning human remains are reduced to less than significant.

Cumulative Impacts

Overall, the project would not cause a considerable impact to historical cultural resources, archaeological cultural resources, or human remains. Due to the project location and previously disturbed project site ground, and the addition of the above listed mitigation measures the proposed project would not cause a cumulatively considerable impact to occur.

4.6 Energy

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Regulatory Setting

State

Renewable Energy Standards

In 2002, California established its Renewable Portfolio Standard program12F[5] with the goal of increasing the annual percentage of renewable energy in the state's electricity mix by the equivalent of at least 1 percent of sales, with an aggregate total of 20 percent by 2017. The California Public Utilities Commission subsequently accelerated that goal to 2010 for retail sellers of electricity (Public Utilities Code Section 399.15(b)(1)). Then-Governor Schwarzenegger signed Executive Order S-14-08 in 2008, increasing the target to 33 percent renewable energy by 2020. In September 2009, then-Governor Schwarzenegger continued California's commitment to the Renewable Portfolio Standard by signing Executive Order S-21-09, which directs the California Air Resources Board under its AB 32 authority to enact regulations to help the State meet its Renewable Portfolio Standard goal of 33 percent renewable energy by 2020. In September 2010, the California Air Resources Board adopted its Renewable Electricity Standard regulations, which require all of the State's load-serving entities to meet this target. In October 2015, then-Governor Brown signed into legislation Senate Bill 350, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030. Signed in 2018, SB 100 revised the goal of the program to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

[5] The Renewable Portfolio Standard is a flexible, market-driven policy to ensure that the public benefits of wind, solar, biomass, and geothermal energy continue to be realized as electricity markets become more competitive. The policy ensures that a minimum amount of renewable energy is included in the portfolio of electricity resources serving a state or country.

California 2007 Energy Action Plan Update

The 2007 Energy Action Plan II is the State's principal energy planning and policy document. The plan describes a coordinated implementation strategy to ensure that California's energy resources are adequate, affordable, technologically advanced, and environmentally sound. In accordance with this plan, the state and its electricity providers would invest first in energy efficiency and demand-side resources, followed by renewable resources, and only then in clean conventional electricity supply to meet its energy needs.

Building Codes

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission) in June 1977 and are updated every three years (Title 24, Part 6, of the California Code of Regulations). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On May 9, 2018, the California Energy Commission (CEC) adopted the 2019 Building Energy Efficiency Standards, which went into effect on January 1, 2020. The 2022 Standards were adopted in August 2021 and went into effect in January 2023.

The 2022 Standards improve upon the previous 2019 Standards. Among other updates like strengthened ventilation standards for gas cooking appliances, the 2022 Energy Code includes updated standards in three major areas:

- New electric heat pump requirements for residential uses, schools, offices, banks, libraries, retail, and grocery stores.
- The promotion of electric-ready requirements for new homes including the addition of circuitry for electric appliances, battery storage panels, and dedicated infrastructure to allow for the conversion from natural gas to electricity.
- The expansion of solar photovoltaic and battery storage standards to additional land uses including high-rise multifamily residences, hotels and motels, tenant spaces, offices, (including medical offices and clinics), retail and grocery stores, restaurants, schools, and civic uses (including theaters auditoriums, and convention centers)

Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code.

California Green Building Standards Code

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development. CALGreen standards require new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

CALGreen also provides voluntary measures (CALGreen Tier 1 and Tier 2) that local governments may adopt which encourage or require additional measures in the five green building topics. The CEC approved the 2022 California Green Building Standards Code and went into effect January 1, 2023.

2006 Appliance Efficiency Regulations

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

California Utility Efficiency Programs (Senate Bill 1037 and Assembly Bill 2021)

SB 1037 and AB 2021 require electric utilities to meet their resource needs first with energy efficiency. California Utility Efficiency Programs have also set new targets for statewide annual energy demand reductions.

Regional and Local

El Dorado County General Plan

The El Dorado County General Plan Public Services and Utilities Element encourages energy efficiency development within the County by imposing two policies:

Policy 5.6.2.1: Require energy conserving landscaping plans for all projects requiring design review or other discretionary approval.

Policy 5.6.2.2: All new subdivisions should include design components that take advantage of passive or natural summer cooling and/or winter solar access, or both, when possible.

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant Impact. The energy consumption associated with construction of the proposed project includes primarily diesel fuel consumption from on-road hauling trips and off-road construction diesel equipment, and gasoline consumption from on-road worker commute and vendor trips. Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers, and heating, ventilation, and air conditioning) would be powered by a generator. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The majority of the energy used during construction would be from petroleum. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State. In addition, some incidental energy conservation would occur during construction through compliance with State requirements that equipment not in use for more than five minutes be turned off. Project construction equipment would also be required to comply with the latest EPA and CARB engine emissions standards. These engines use highly efficient combustion engines to minimize unnecessary fuel consumption. Additionally, use of construction fuel would cease once the project is fully developed. As such, project construction would have a nominal effect on the local and regional energy supplies. Therefore, it is expected that construction fuel consumption associated with the project would not be inefficient, wasteful, or unnecessary. The project would not substantially affect existing energy or fuel supplies, or resources and new capacity would not be required. Impacts would be less than significant in this regard.

Long-term operation of the project would result in energy use from: the direct use of electricity and/or natural gas; fuel use (e.g., gasoline, diesel, or electricity) by vehicles of park patrons traveling to and from the project site on weekends; and the indirect use of electricity and/or natural gas used for the conveyance and treatment of freshwater and wastewater. The project is a park intended to serve the adjacent school and local area. As such, it is not anticipated that project-related vehicle trips or direct energy use would substantially increase compared to existing conditions. Therefore, it is expected that operational fuel and energy consumption associated with the project would not be inefficient, wasteful, or unnecessary. Impacts would be less than significant in this regard.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant Impact. As discussed above, the project would not result in a substantial new demand for energy resources. The project would be required to comply with existing regulations, including applicable measures from the General Plan. The project would follow statewide compliance with Renewable Portfolio Standards. The proposed new public restroom would be subject to the California Building Energy Efficiency Standards (Title 24, Part 6), which establishes energy efficiency standards for non-residential buildings constructed in California to reduce energy demand and consumption. The project would comply with existing State energy standards and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant.

Cumulative Impacts

As discussed above, it is expected that construction fuel consumption associated with the project would not be inefficient, wasteful, or unnecessary. The project would not substantially affect existing energy or fuel supplies, or resources. Additionally, the project would also be required adhere to the provisions of CALGreen, which establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The insulation and design code requirements would minimize wasteful energy consumption. As discussed above, project construction and operations would not substantially affect existing energy or fuel supplies, or resources and new capacity would not be required. Therefore, the project's cumulative contribution of energy use would be less than significant, and the project's cumulative energy impacts would also be less than cumulatively considerable.

4.7 Geology and Soils

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

a) *Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*

i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

Less Than Significant Impact. A *Geotechnical Investigation* was prepared by Geocon Consultants, Inc. in February 2023, and is included as **Appendix D** to this IS/MND. The site is not within a state-designated Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards (CGS, 2023). No Holocene-active or pre-Holocene faults with the potential for surface fault rupture are known to pass directly beneath the site. The closest mapped Holocene-active and pre-Holocene (Quaternary) fault to the site is within the Foothills fault system, located approximately 9.6 miles northeast of the site (**Appendix D**). Therefore, the potential for surface rupture due to a known known earthquake fault occurring is considered low.

Although, the project is not anticipated to be substantially affected by seismic activity, the project would comply with appliable General Plan policies and plan check criteria, and other applicable sections of the California Building Code (CBC), would ensure all needed structural designs and other measures would be incorporated to the proposed project prior to the issuance a building permit. Conformance with all applicable building standards and conformance to the design and review process would ensure impacts associated with fault rupture would be less than significant.

ii. *Strong seismic ground shaking?*

Less Than Significant Impact. The greater Sacramento region has a history of relatively low seismicity in comparison with more active seismic regions such as the San Francisco Bay Area or southern California. As noted above the project site is not expected to experience significant seismically related ground shaking due to the distance from a state-designated Alquist-Priolo Earthquake Fault Zone. However, the project site could experience ground shaking from the nearest mapped fault, noted above, or other faults in the area.

To minimize potential damage from the proposed project caused by ground shaking, all construction would comply with the latest California Building Code standards and would comply with applicable goals and policies outlined in the Public Health, Safety, and Noise Element of El Dorado County's General Plan. Specifically, policies under Goal 6.3: Geologic and Seismic Hazards, which would minimize the threat to life and property from seismic and geologic hazards. Consistency with the requirements of the California Building Code and El Dorado County's General Plan policies identified above would ensure that impacts on humans associated with strong seismic ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is a phenomenon in which loose, saturated, cohesionless soil deposits located beneath the groundwater table lose strength when subjected to intense and prolonged ground shaking. The seismic excitation increases pore water pressure creating a buoyant effect of the loose soil. When liquefaction occurs, building foundations may sink or tilt and differential ground settlement may occur. Other effects may include sand boils (ground loss) and lateral spreading if the liquefiable soil is located adjacent to a steep free face. The areas that have the greatest potential for liquefaction are those in which the water table is less than 50 feet below ground surface and the soils are predominantly clean, poorly graded sand deposits of loose to medium-dense relative density.

The site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. The *Geotechnical Investigation* completed for the project site found that based on the subsurface conditions encountered at the site, including shallow bedrock and a lack of cohesionless soils in the top 50 feet, liquefaction is not a hazard for the site. Therefore, the potential for substantial adverse effects from the project due to seismic-related ground failure, including liquefaction would be less than significant.

iv. Landslides?

Less Than Significant Impact. The project site is does not have any substantial slopes and is not adjacent to an area with substantial slopes. The project site is not located along riverbanks, foothills, or mountain terrain, that would make it susceptible to landslides. The project site is not located within a California Geological Survey (CGS) Seismic Hazard Program: Landslide Zone and is listed as Landslide Susceptibility Class 0 on the Deep-Seated Landslide Susceptibility CGS Map Sheet 58. Therefore, the project site is exposed to little risk from landslides, impacts would be less than significant, and mitigation is not required.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. The proposed project would be constructed in a manner that minimizes soils erosion and loss of topsoil. The project would be required to comply with all County guidelines and California Building Code standards. In addition, because the proposed project would disturb more than an acre of land it would be required to obtain a Construction General Permit from the SWRCB. The Construction General Permit would require preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would include implementation of BMPs to avoid or minimize adverse water quality impacts from erosion and sedimentation. BMPs fall within the categories of Temporary Soil Stabilization, Temporary Sediment Control, Wind Erosion Control, Tracking Control, Non-Storm Water Management, and Waste Management and Materials Pollution Control.

With these erosion control measures in place, impacts resulting from construction and operational activities would be minimized and project level impacts related to erosion would be less than significant and additional mitigation is not required.

c) *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

OR,

d) *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

Less Than Significant Impact. The project site is not located in a sensitive geologic area and surround areas are generally flat, which is not anticipated to result in liquefaction, lateral spreading, landslides, or collapse. As noted above in a) iii. and iv. landslides and liquefaction or collapse would not be anticipated to occur at the project site. Please see further analysis above.

Lateral spreading typically results when ground shaking moves soils toward an area where soil integrity is weak or unsupported, and it typically occurs on the surface of a slope, although it does not occur strictly on steep slopes. Oftentimes, lateral spreading is directly associated with areas susceptible to liquefaction. This potential is considered low because the project site is not adjacent to or in an elevated area that could be affected by spreading. Potential effect would be further reduced by conformance with the goals, polices, and implementation measures from the General Plan Public Health, Safety, and Noise Element.

Land subsidence is the gradual settling or sinking of an area with little or no horizontal motion due to changes taking place underground. It is a natural process, although it can also occur as a result of human activities. Common causes of land subsidence from human activity including pumping water, oil, and gas, and other mining activities from underground reservoirs leaving voids that can be collapse when exposed to seismic activity. However, subsidence is not anticipated at the project site as there are no active oil or gas well in proximity to the project.

Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. The *Geotechnical Investigation* conducted Laboratory Plasticity Index (PI) and Expansion Index (EI) tests on selected near-surface soil samples which indicated low plasticity and very low expansion potential (**Appendix D**). Therefore, risk due to expansive soils on the project site is not anticipated.

Overall, exiting conditions at the project site and compliance with applicable General Plan policies and California Building Code would reduce the potential for risk due to landslide, lateral spreading, subsidence, liquefaction or collapse, and expansive soils to less than significant.

e) *Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?*

Less Than Significant Impact. The project does not include the use of septic tanks or any elements of an alternative wastewater disposal system. Therefore, the project would result in a less than significant impact in this regard.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation. Site geology is mapped as Jurassic Copper Hill Volcanics characterized by lava flows and tuff (pyroclastics), underlain by Jurassic Salt Springs Slate (**Appendix D**). Additional mapping by the California Geological Survey indicates the site to be underlain by Mesozoic age metavolcanic rocks (**Appendix D**).

There are no known paleontological resources located in project area. However, development of the proposed project could result in the discovery and disturbance of previously unknown or undiscovered paleontological resources. While fossils are not expected to be discovered during construction, it is possible that significant fossils could be discovered during excavation activities.

Even in areas with a low likelihood of occurrence. Fossils encountered during excavation could be inadvertently damaged. If a unique paleontological resource is discovered, the impact to the resource could be significant. **MM GEO-1** would require notification of a qualified paleontologist if paleontological resources are uncovered. Therefore, with implementation of **MM GEO-1** impacts associated with paleontological resources would be less than significant.

<u>Mitigation Measures:</u>

MM GEO-1: If paleontological resources are discovered during the course of construction, work shall immediately halt within 50 feet of the discovery and the John Adams Academy shall be notified. A qualified paleontologist shall be retained to determine the significance of the discovery. If the paleontological resource is considered significant, a recovery and preservation plan shall be developed and implemented by the qualified paleontologist and the resource shall be donated to a local agency, State University, or other applicable institution, where the resources can be studies, curated, and displayed for public education purposes if applicable.

<u>Cumulative Impacts</u>

Geology and soil-related impacts are generally site-specific and are determined by a particular site's soil characteristics, topography, and proposed land uses. Cumulative effects related to geology resulting from the implementation of proposed improvements would not expose more persons and property to a substantial increase in the potential to be affected by impacts due to seismic activity and construction of the project would not exacerbate existing geotechnical hazards. Long-term impacts related to geology include the exposure of people to the potential for seismically induced ground shaking. While implementation of the proposed project, taken in conjunction with other past present and reasonably foreseeable projects, the proposed project would not increase the number of people and structures subject to a seismic event or increase the potential for such events to occur. In addition, seismic and geologic significance are considered on a project-by-project basis typically through the preparation of a design-level geotechnical studies, and conformance to applicable policies related to design and conformance to applicable building codes. As such exposures are anticipated to be minimized against known geologic hazards and potential geologic and soil related impacts. Thus, the proposed project would not contribute to a cumulatively considerable geologic and/or soils impacts and impacts would be less than significant.

4.8 Greenhouse Gas Emissions

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Regulatory Setting

Federal

To date, national standards have not been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

U.S. Environmental Protection Agency Endangerment Finding

The U.S. Environmental Protection Agency's (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the

Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards.

In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baseline.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

In 2018, the EPA stated their intent to halt various Federal regulatory activities to reduce GHG emissions, including the phase two program. California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. On September 27, 2019, the EPA and the NHTSA published the "Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program." (84 Fed. Reg. 51,310 (Sept. 27, 2019.) The Part One Rule revokes California's authority to set its own GHG emissions standards and set zero-emission vehicle mandates in California. On March 31, 2020, the EPA and NHTSA finalized rulemaking for SAFE Part Two sets CO_2 emissions standards and corporate average fuel economy (CAFE) standards for passenger vehicles and light duty trucks, covering model years 2021-2026.

State

California Air Resources Board

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark AB 32 California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major legislation related to GHG emissions reduction.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). AB 32 instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 also directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan. Adopted December 15, 2022, CARB's 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. To achieve the targets of AB 1279, the 2022 Scoping Plan relies on existing and emerging fossil fuel alternatives and clean technologies, as well as carbon capture and storage. Specifically, the 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen. The 2022 Scoping Plan sets one of the most aggressive approaches to reach carbon neutrality in the world. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (i.e., Climate Action Plan) consistent with CEQA Guidelines section 15183.5.

The key elements of the 2022 CARB Scoping Plan focus on transportation. Specifically, the 2022 Scoping Plan aims to rapidly move towards zero-emission transportation (i.e., electrifying cars, buses, trains, and trucks), which constitutes California's single largest source of GHGs. The regulations that impact the transportation sector are adopted and enforced by CARB on vehicle manufacturers and are outside the jurisdiction and control of local governments. The 2022 Scoping Plan accelerates development of new regulations as well as amendments to strengthen regulations and programs already in place.

Included in the 2022 Scoping Plan is a set of Local Actions (2022 Scoping Plan Appendix D) aimed at providing local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. Appendix D to the 2022 Scoping Plan includes a section on evaluating plan-level and project-level alignment with the State's Climate Goals in CEQA GHG analyses. In this section, CARB identifies several recommendations and strategies that should be considered for new development in order to determine consistency with the 2022 Scoping Plan. Notably, this section is focused on Residential and Mixed-Use Projects. CARB specifically states that Appendix D does not address other land uses (e.g., industrial). However, CARB plans to explore new approaches for other land use types in the future.

As such, it would be inappropriate to apply the requirements contained in Appendix D of the 2022 Scoping Plan to any land use types other than residential or mixed-use residential development.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat, even with rapid population growth.

Title 20 Appliance Efficiency Regulations

The appliance efficiency regulations (California Code of Regulations [CCR] Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy-and water-efficient appliances.

Title 24 Building Energy Efficiency Standards

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6) was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and took effect on January 1, 2020. Under the 2019 standards, residential dwellings are required to use approximately 53 percent less energy and nonresidential buildings are required to use approximately 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code

The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as CALGreen, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and nonresidential buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The latest CALGreen Code took effect on January 1, 2020 (2019 CALGreen). The latest CALGreen Code took effect on January 1, 2023 (2022 CALGreen). The 2022 CALGreen standards has improved upon the 2019 standards for new construction of, and additions and alterations to, residential and nonresidential buildings.

Regional

EDCAQMD Thresholds

The proposed Project lies within the Mountain Counties Air Basin (MCAB). The El Dorado County Air Quality Management District (EDCAQMD) has jurisdiction over most air quality matters in the western portion of El Dorado County and is tasked with implementing programs and regulations required by the federal and State Clean Air Acts. According to the EDCAQMD, if a project is found to interfere with the region's ability to comply with federal and State standards, local governments then need to consider project modifications or provide mitigation measures to eliminate the inconsistency of the project plans.

Under CEQA, the EDCAQMD is a commenting responsible agency on air quality within its jurisdiction or impacting its jurisdiction. The EDCAQMD reviews projects to ensure that they would: (1) support the primary goals of the latest Air Quality Plan; (2) include applicable control measures from the Air Quality Plan; and (3) not disrupt or hinder implementation of any Air Quality Plan control measures. The EDCAQMD has not established plans or thresholds for GHGs.

Metropolitan Transportation Plan/ Sustainable Communities Strategy

The El Dorado County Transportation Commission (EDCTC) is the Regional Transportation Planning Agency (RPTA) for the Mountain Counties Air Basin portion of El Dorado County. One of the fundamental responsibilities which results from this designation, is the preparation of the County's Regional Transportation Plan. Under the terms of a Memorandum of Understanding (MOU) between the EDCTC and the Sacramento Area Council of Governments (SACOG), EDCTC submits the Regional Transportation Plan (RTP) for inclusion into the SACOG Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS). This process is important to both the SACOG MTP and the EDCTC RTP, as it allows for a locally developed RTP to be included in the regional air quality conformity process. The MOU also stipulates that EDCTC shall utilize data and data analysis methodologies which are consistent with that developed by SACOG. This data includes existing and projected travel data, socio-economic data, and travel demand forecasts and assumptions.

SACOG is designated by the state and federal governments as the Metropolitan Planning Organization (MPO) and is responsible for developing the MTP/SCS in coordination with Sacramento, Yolo, Yuba, Sutter, El Dorado and Placer counties and the 22 cities within those counties (excluding the Tahoe Basin). In November 2019, SACOG adopted the 2020 MTP/SCS, which lays out a path for improving our air quality, preserving open space and natural resources, and helping California achieve its goal to reduce GHG that contribute to climate change (SACOG 2019). For the 2020 MTP/SCS, CARB assigned SACOG a GHG reduction target from passenger vehicles of 19% below 2005 levels per capita by 2035.[6]

[6] Sacramento Area Council of Governments.

Local

El Dorado County General Plan

The El Dorado County General Plan 2019 Update Public Services and Utilities, and Public Health, Safety, and Noise elements, of the El Dorado General Plan include the following goals, policies, and objectives that would apply to Greenhouse Gas Emissions:

Goal 5.6. Gas, Electric, and Other Utility Services: Sufficient utility service availability consistent with the needs of a growing community.

Objective 5.6.2.: Encourage development of energy-efficient buildings, subdivisions, development, and landscape designs.

Policy 5.6.2.1.: Require energy conserving landscaping plans for all projects requiring design review or other discretionary approval.

Public Health, Safety, and Noise Element

Goal 6.7. Air Quality Maintenance: Strive to achieve and maintain ambient air quality standards established by the EPA and CARB and minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.

Objective 6.7.2.: Reduce motor vehicle air pollution by developing programs aimed at minimizing congestion and reducing the number of vehicle trips made in the County and encouraging the use of clean fuels.

Policy 6.7.2.2.: Encourage, both through County policy and discretionary project review, the use of staggered work schedules, flexible work hours, compressed work weeks, teleconferencing, telecommuting, and carpool/van pool matching as ways to reduce peak-hour vehicle trips.

Policy 6.7.2.3.: To improve traffic flow, synchronization of signalized intersections shall be encouraged as a means to reduce congestion, conserve energy, and improve air quality.

Policy 6.7.2.5.: Upon reviewing projects, the County shall support and encourage the use of, and facilities for, alternative-fuel vehicles to the extent feasible. The County shall develop language to be included in County contract procedures to give preference to contractors that utilize low-emission heavy-duty vehicles.

Policy 6.7.2.6.: The County shall investigate the replacement of its fleet vehicles with more fuel-efficient alternative fuel vehicles (e.g., liquid natural gas, fuel cell vehicles).

Thresholds

The EDCAQMD has not adopted a numerical threshold of significance for GHG emissions within the region. Per its discretion, the County has decided to evaluate the project's impacts related to GHG emissions on compliance with applicable plans, policies, or regulations adopted for the purposed of reducing the emissions of GHGs. The compliance evaluation is the sole basis for determining the significance of the project's GHG-related impacts on the environment. As a result, the EDCAQMD has recommended the use of thresholds adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD). The thresholds of significance established by SMAQMD, and used by El Dorado County AQMD, were developed to identify emissions levels for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move towards climate stabilization. As identified in the SMAQMD Thresholds of Significance Table, updated April 2020, if a proposed project results in emissions less than 1,100 $MTCO_2e$/yr during either construction or operation, the proposed project would be anticipated to result in a less-than-significant impact related to GHG emissions.[7] Further, the significance of the project's GHG impacts is based on the project's compliance with local and statewide GHG reduction regulations and requirements.

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

Less than Significant Impact.

Short-Term Construction Greenhouse Gas Emissions

Construction of the project would result in direct emissions of CO_2, N_2O, and CH_4 from the operation of construction equipment and the transport of materials and construction workers to and from the project site. EDCAQMD does not have a threshold for construction GHG emissions, which are one-time, short-term emissions and therefore would not significantly contribute to long-term cumulative GHG emissions impacts of the proposed project. However, the EDCAQMD has recommended the use of thresholds adopted by the SMAQMD. As identified by the SMAQMD, if a proposed project results in emissions less than 1,100 $MTCO_2e$/yr during either construction or operation, the proposed project would be anticipated to result in a less-than-significant impact related to GHG emissions.

Total GHG emissions generated during all phases of construction were combined and are presented in **Table 5: Construction Greenhouse Gas Emissions**. The CalEEMod outputs are contained within the **Appendix A**.

Table 5: Construction Greenhouse Gas Emissions

Year	$MTCO_2e$[1]
2024	330
2025	61
Total	391
Amortized	13.03

$MTCO_2e$ = metric tons of carbon dioxide equivalent.
1. Due to Rounding, Total $MTCO_2e$ may be marginally different from CalEEMod output.
Source: CalEEMod version 2022.1.1.21. Refer to **Appendix A** for model outputs.

As shown in **Table 5**, project construction-related activities would generate approximately 391 $MTCO_2e$ of GHG emissions over the course of construction. One-time, short-term construction GHG emissions are typically summed and amortized over the project's lifetime (assumed to be 30 years). It is reasonable to look at a 30-year time frame for buildings since this is a typical interval before a

[7] Sacramento Metropolitan Air Quality Management District, *Greenhouse Gas Thresholds for Sacramento County*, June 2020. Available at: https://www.airquality.org/LandUseTransportation/Documents/SMAQMDGHGThresholds2020-03-04v2.pdf. Accessed December 26, 2023.

new building requires the first major renovation. The amortized project emissions would be approximately 13 $MTCO_2e$ per year. Once construction is complete, the generation of construction-related GHG emissions would cease. The proposed project's construction GHG emissions (391 $MTCO_2e$/yr) would not exceed the SMAQMD significance threshold of 1,100 $MTCO_2e$/yr and are not expected to be a cumulatively considerable contribution to global climate change.

Long-Term Operational Greenhouse Gas Emissions

Operational or long-term emissions would occur over the project's life. GHG emissions would result from direct emissions such as operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power over the life of the project, the energy required to convey water to, and wastewater from the project site, the emissions associated with solid waste generated from the project site. As the proposed project includes recreational improvements to an existing school, the recreation area would not cause a substantial increase to mobile source vehicle emissions. Emissions related to maintenance equipment, energy resources, and water resources would be minor based on the level of development already adjacent to the project site. It should be noted that the project would comply with the 2022 Title 24 Part 6 Building Energy Efficiency Standards. The standards require updated nonresidential ventilation requirements, nonresidential lighting requirements, and other green building measures. The project would also comply with the appliance energy efficiency standards in Title 20 of the California Code of Regulations. The Title 20 standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances. The project would be constructed according to the standards for high-efficiency water fixtures for indoor plumbing and water efficient irrigation systems required in 2022 Title 24, Part 11 (CALGreen).

At the State and global level, improvements in technology, policy, and social behavior can also influence and reduce operational emissions generated by a project. The state is currently on a pathway to achieving the Renewable Portfolio Standards goal of 60 percent renewables by 2030 per SB 100.

Based on the temporary construction period and relatively small size of the site, construction GHG emissions would be less than significant. Additionally, operational emissions related to maintenance equipment, energy resources, and water resources would be minor based on the level of development already adjacent to the project site. Therefore, the proposed project's operational and construction GHG emissions would be less than significant.

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

Less than Significant Impact. As discussed above, the project would not result in substantial GHG emissions and its GHG emissions would be below the SMAQMD significance threshold. The CARB Scoping Plan, and many other long-term GHG reduction plans, estimate future GHG emissions and corresponding reduction targets based on statewide and local growth estimates. The proposed project would be subject to Title 24, Part 6, establishing building and lighting efficiency. The project would not exceed local significance thresholds and would comply with applicable greenhouse gas reduction policies. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Impacts would be less than significant.

Cumulative Impacts

It is generally the case that an individual project of the project's size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The additive effect of project-related GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the project as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions. Therefore, the project's cumulative contribution of GHG emissions would be less than significant and the project's cumulative GHG impacts would also be less than cumulatively considerable.

4.9 Hazards and Hazardous Materials

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

a) *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less Than Significant Impact. Project construction would involve the transport, storage, use, and/or disposal of limited quantities of hazardous materials, such as fuels, solvents, degreasers, and paints. The use of these materials during project construction would be short-term and would occur in accordance with standard construction practices, as well as with applicable federal, State, and local regulations. Potentially hazardous materials would be contained, stored, and used during construction in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Examples of such activities include fueling and servicing construction equipment and applying paints and other coatings. Project construction would be temporary, and existing regulations of several agencies would govern these activities. Construction activities would be subject to compliance with relevant regulatory requirements and restrictions concerning the transport, use, or disposal to prevent a significant hazard to the public or environment. The primary regulatory requirements include EDCAQMD Rule 215 and Rule 223.

The proposes would construct additional sports fields, playground areas, outdoor learning areas, and a new internal roadway. The proposed project uses would not emit hazardous emissions or involve hazardous or acutely hazardous materials, substances, or waste. However, the proposed project could involve the use of materials associated with routine maintenance of the property, such as janitorial supplies for cleaning purposes and/or herbicides and pesticides for landscaping. These uses would not involve the routine transport, use, or disposal of quantities of hazardous materials that could create a significant hazard to the public or environment. The hazardous materials used during operations would be stored, handled, and disposed of in accordance with applicable federal, State, and local regulations. Therefore, following compliance with the regulatory requirements, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant and no mitigation is required.

b) *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Less Than Significant Impact. Soil and rock in portions of El Dorado County are known or suspected to contain naturally occurring asbestos (NOA) minerals which may pose a health hazard when disturbed (**Appendix D**). NOA minerals (chrysotile, tremolite, and actinolite) are more likely to be encountered in areas with geology including serpentinite, ultramafic, or sheared metavolcanic rocks due to metamorphic processes. Site geology, which consists of pyroclastic and volcanoclastic deposits and associated fill over slate, is generally considered unlikely to contain NOA (**Appendix D**). As a screening measure, rock samples from the project site were submitted for asbestos testing (**Appendix D**). The *Geotechnical Investigation* found no asbestos or other fibrous materials from the rock samples. Laboratory test reports for asbestos are included in **Appendix D.**

In addition, review of State Water Resources Control Board (SWRCB) GeoTracker and DTSC Envirostor database did not identify any hazardous clean up cases on or immediately adjacent to the project site (SWRCB, 2024) (DTSC, 2024).

Federal, State, and local laws, regulations, and programs address the storage, use, handling, and disposal of any hazardous materials (such as paints and solvents) that the Applicant might use during construction. Compliance with applicable laws and regulations would reduce the risk of hazardous material incidents during construction to a less than significant level. Therefore, project construction activities would not create a significant hazard to the public or to the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

The project would not generate or facilitate the generation of hazardous materials. The proposed project could involve the transport and use of materials associated with routine maintenance of the property, such as janitorial supplies for cleaning purposes and/or herbicides and pesticides for landscaping. However, the types and quantities of materials used and stored on site would not be of a significant quantity to create a reasonable foreseeable upset or accident. Additionally, this analysis assumes that the use, storage, and transport of routinely used hazardous materials would occur in compliance with the established regulatory framework. Project operations would not 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. Impacts would be less than significant and no mitigation is required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. The project would include the construction and operation of additional sports fields, playground areas, outdoor learning areas, and a new internal roadway located behind the existing John Adams Academy -El Dorado Hills Campus. However, as discussed above, the project would not generate or facilitate the generation of hazardous materials. The proposed project could involve the transport and use of materials associated with routine maintenance of the property, such as janitorial supplies for cleaning purposes and/or herbicides and pesticides for landscaping. However, the types and quantities of materials used and stored on site would not be of a significant quantity.

Project construction would result in limited dust and emissions, however, would not be of the scale to impact John Adams Academy. Dust emissions from soil disturbance would take place; however as noted above, the project would be required to obtain a standard Fugitive Dust Plan approval from the EDCAQMD. In addition, the proposed project would not exceed any quantitative emission thresholds indicating that the project would not make a cumulatively considerable contribution to a new or existing violation of an air quality standard, see Section 4.3, *Air Quality* above. Therefore, the proposed project would not emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of a school and a less than significant impact would occur.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less Than Significant Impact. Government Code Section 65962.5 refers to the Hazardous Waste and Substances Site List, commonly known as the Cortese List. The Cortese list contains hazardous waste and substance sites including public drinking water wells with detectable levels of contamination, sites with known underground storage tanks (USTs) having a reportable release, solid waste disposal facilities from which there is a known migration, hazardous substance sites selected for remedial action, historic Cortese sites, and sites with known toxic material identified through the abandoned site assessment program. The project site is not included on the hazardous sites list compiled pursuant to California Government Code Section 65962.5

As noted above, review of SWRCB GeoTracker and DTSC Envirostor database did not identify any hazardous clean up cases on or immediately adjacent to the project site (SWRCB, 2024) (DTSC, 2024). The nearest hazardous waste site is the DST Output West, LLC site (CAD982319725) located at 5220 Robert J Mathews Parkway, approximately 0.3 miles west of the project site. However, this site has been listed as 'Closed' since 2017. The project site would not be located on a hazardous materials sites compiled pursuant to Government Code Section 65962 and therefore would have a less than significant impact.

e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

No Impact. The airports located nearest to the project site are Cameron Airpark, public use airport, located approximately 5.6 miles to the northeast and Rancho Murieta Airport & Storage located approximately 9.4 miles to the southwest. The project site is not within the Airport Influence Areas of these two airports. Therefore, the project would not result in a safety hazard or excessive noise for people working or residing at the project site. No impact would occur and no mitigation is required.

f) *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant Impact. Implementation of the project would not impair or physically interfere with an adopted emergency response or evacuation plan. The El Dorado County Emergency Operations Plan (EOP) was prepared to outline policies and procedures and assign responsibilities to ensure the effective management of emergency operations. The EOP outlines the overall organizational and operational concepts in relation to response and recovery and includes the roles and responsibilities of the various committees and agencies during an emergency, and the activation and execution procedures of the emergency response system.

No revisions to the EOP would be required as a result of the proposed project. Primary access to all major roads would be maintained during construction of the proposed project. During construction of the project, there would not be a need for temporary lane closures along project roadways. Therefore, impacts associated with emergency response or evacuation plans would be less than significant.

g) *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

Less Than Significant Impact. The California Department of Forestry and Fire Protection (CAL FIRE) has mapped fire threat potential throughout California and designates State or Local Responsibility

Areas (SRA/LRA) within the state of California. CAL FIRE ranks fire threats based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat, moderate, high, and very high fire threats. According to CalFire Fire Hazard Severity Zone Map the project site is within a SRA and is not located within or immediately adjacent to a VHFHSZ. the project would not expose people or structures to a significant risk involving wildland fires. A less than significant impact would occur and no mitigation is required.

Cumulative Impacts

The incremental effects of the proposed project related to hazards and hazardous materials, if any, are anticipated to be minimal, and any effects would be site-specific. The proposed project is also not within an area classified as a VHFHSZ. Therefore, the proposed project would not result in incremental effects to hazards or hazardous materials that could be compounded or increased when considered together with similar effects from other past, present, and reasonably foreseeable probable future projects. The proposed project would not result in cumulatively considerable impacts to or from hazards or hazardous materials.

4.10 Hydrology and Water Quality

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site?			X	
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?			X	
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
iv. Impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

a) *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

OR,

e) *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

Less Than Significant Impact. The proposed project would increase the amount of impervious surfaces on the site compared to existing conditions. As a result, the proposed project would increase site runoff, which would have the potential to degrade surface or groundwater quality in violation of water quality and/or waste discharge requirements. The proposed project would disturb more than one (1) acre and would be required to obtain a State NPDES Construction General Permit. Compliance with the requirements of the NPDES Construction General Permit would ensure that the potential water quality impacts from construction of the proposed project would be minimized.

The proposed project would include stormwater retention facilities to manage flood flows during project operation. These facilities would consist of standard conveyance methods comprised of retention basins, inlets, and solid storm drainpipe. Runoff would be conveyed from the paved areas to EL Dorado County required filtration systems. Therefore, the project would not violate any water quality standards or waste discharge requirements. Impacts from the proposed project would be less than significant in this regard.

b) *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

Less than Significant Impact. The proposed project site is currently served by El Dorado Irrigation District and would not result in a substantial use of groundwater resources. The project site falls within the El Dorado Hills supply area, which receives its water supply from Folsom Reservoir. Improvements associated with the project include garden(s), artificial turf soccer fields, potential concessions stand, and restroom components that would require minor water use associated with operation. The proposed turf soccer fields and installation of artificial surfaces would not require regular irrigation. Therefore, the project would not result in impacts to the aquifer interfere with groundwater recharge. The project would result in a less than significant impact.

c) *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

i. *Result in substantial erosion or siltation on- or off-site?*

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

iii. *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

iv. *Impede or redirect flood flows?*

Less Than Significant Impact. The proposed project would introduce impervious surfaces on-site and project construction would require grading, which could change the existing conditions of the site and has the potential to result in impacts to erosion, runoff, and flood flows.

The proposed project includes stormwater retention facilities, as described under impact a), above, to manage flood flows during project operation. These facilities are designed to manage worst case flooding scenarios. Changes to the onsite flood flow would be accommodated by these stormwater retention facilities, including retention basins, and would not result in hazardous conditions related to the impediment or redirection of flood flows on the site. Redirection of flood flows to these facilities would minimize erosion potential or siltation both on and off-site during project operation.

Additionally, the proposed project would be subject to compliance with the National Pollutant Discharge Elimination System (NPDES) General Permit which would require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) and monitoring plan, which must include erosion-control and sediment-control Best Management Practices (BMPs). BMPs fall within the categories of Temporary Soil Stabilization, Temporary Sediment Control, Wind Erosion Control, Tracking Control, Non-Storm Water Management, and Waste Management and Materials Pollution Control.

Further, the proposed project is located in FEMA Flood Zone X, which is identified as an area of "Minimal Flood Hazard" (FEMA, 2024). As a result, the risk of flooding at the site is considered low. According to the USFWS National Wetlands Inventory, there are no steams or rivers located within or immediately adjacent to the proposed project site (USFWS, 2024). Overall, compliance with applicable County regulations and the National Pollutant Discharge Elimination System (NPDES) General Permit would ensure potential impacts from the implementation of the project would be less than significant.

d) *In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

Less Than Significant Impact. As noted above, the proposed project is located in FEMA Flood Zone X, which is identified as an area of "Minimal Flood Hazard", therefore the risk of flooding on-site is low (FEMA, 2024). Tsunamis are sea waves that are generated in response to large-magnitude earthquakes. When these waves reach shorelines, they sometimes produce coastal flooding. Seiches are the oscillation of large bodies of standing water, such as lakes, that can occur in response to ground shaking. The project site is not located near the coast and there are no nearby bodies of standing water. Therefore, the project would not result in the release of pollutants due to project inundation. Impacts would be less than significant.

Cumulative Impacts

The potential impacts related to hydrology and storm water runoff are typically site specific and site specific BMPs are implemented at the project level. The analysis above determined that the implementation of the proposed project would not result in significant impacts. In regard to proposed project impacts that would be considered less than significant, and impacts are not anticipated to result in compounded or increased impacts when considered with similar effects from other past, present, and reasonably foreseeable probable future projects. Other projects also would be subject to similar laws and requirements regarding hydrology practices, and would undergo evaluation and the development review process which would ensure their implementation.

Projects would be required to adhere to applicable General Plan goals and policies. In addition, as discussed above, other projects would be required to implement stormwater pollution best management practices during construction and design measures to reduce water quality impacts and comply with the NPDES Municipal Regional Permit. Depending on the size of future projects, they would be required to obtain and comply with all required water quality permits and the Water Quality Control Plan, as needed and prepare and implement SWPPPS, implement construction BMPs, including BMPs to minimize runoff, erosion, and storm water pollution, comply with other applicable requirements. Conformance to these measures would minimize runoff from those sites and reduce contamination of runoff with pollutants. Therefore, related projects are not expected to cause substantial increases in storm water pollution. With compliance with State and local mandates, cumulative impacts would be less than significant, and project impacts would not be cumulatively considerable.

4.11 Land Use and Planning

ENVIRONMENTAL IMPACTS **Issues**	**Potentially Significant Issues**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
Would the project:				
a) Physically divide an established community?			X	
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

a) Physically divide an established community?

Less Than Significant Impact. The proposed project would be located on approximately 5 acres of vacant undeveloped land immediately south of the existing John Adams Academy facility and parking lot at 1104 Investment Boulevard. The project site is bordered by office buildings and the existing John Adams Academy facilities and parking lots to the north and west, undeveloped land to the south, and Latrobe Road to the east. The project would improve and expand the outdoor facilities for John Adams Academy students by constructing additional sports fields, playground areas, outdoor learning areas, and a new internal roadway. Thus, the proposed project would not physically divide any surrounding communities and impacts would be less than significant. No mitigation is required.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The project site's land use designation is Research and Development (R&D). The primary purpose of the Research and Development land use designation is to provide areas for the location of high technology, non-polluting manufacturing plants, research and development facilities, corporate/industrial offices, and support service facilities in a rural or campus-like setting which ensures a high quality, aesthetic environment. The proposed outdoor facilities associated with John Adams Academy charter school is not a typical land use within the R&D land use designation in the General Plan, however, impacts to adjacent land uses are not anticipated to occur with implementation of the proposed project.

Pursuant to County Code Section 130.10.040, charter schools are considered public schools and are therefore exempt from the El Dorado County Zoning Ordinance. Specifically, Section 130.10.040.B.3 exempts "[a]ctivities of a local agency, as defined by California Government Code Section 53090, as provided in Section 53091 et seq." from the provisions of the County's zoning code (EDC 2015b; California Legislative Information 2018). John Adams Academy is an independent public charter school chartered by the El Dorado County Office of Education. As an independent public charter school, John Adams Academies, Inc. is a Local Education Agency, which is a "local agency" as defined by California Government Code Section 53090(a). Therefore, the proposed project is exempt from the requirements in the R&D-DC zone.

The proposed project would not require any changes to the existing land use designation or zoning. The proposed project would not result in any conflicts with existing land use policies adopted for the purpose of avoiding or mitigation an environmental effect. Therefore, potential impacts are considered less than significant.

Cumulative Impacts

Implementation of the proposed project would not create a significant cumulative impact to land use and planning in the surrounding region since the proposed outdoor facilities would be compatible with the existing John Adams Academy uses immediately to the north and west. In addition, the proposed roadway would improve circulation within the business park. As a result, cumulative impacts related to land use and planning would be less than significant.

4.12 Mineral Resources

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?			X	
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?			X	

a) 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,

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Less Than Significant Impact. El Dorado County produces a wide variety of mineral resources. Metallic mineral deposits, including gold, are considered the most significant extractive mineral resources. Other metallic minerals found in the County include silver, copper, nickel, chromite, zinc, tungsten, mercury, titanium, platinum and iron. Nonmetallic mineral resources include building stone, limestone, slate, clay, marble, soapstone, sand, and gravel. The project is not located within a Mineral Resource (-MR) overlay in the General Plan or Mineral Resource (-MR) combining zoning district in the Zoning Map. Additionally, the project area is not located in an important mineral resource area, as depicted in Figure CO-1 in the General Plan Conservation and Open Space Element (El Dorado County, 2017). Further, the project site is designated Mineral Resources Zone 4 (MRZ-4) which is an area of unknown mineral resource significance by the California Department of Conservation on Maps for the following; gold deposits formed by hydrothermal processes, mechan concentration, and contact metasomatic processes (DOC, 2001).

The project site is not located on or near an active mine as designated on the California Department of Conservation, Division of Mine Reclamation, Mines Online Map (2016). The closest mine to the project site is the Teichert Quarry (91-34-0049), a sand and gravel quarry approximately 4.5 miles southwest of the project site. Additionally, the project site does not have any oil, gas, or geothermal wells or oil and gas fields located on or near the project site as designated on the California Geologic Energy Management Division's (CalGEM) Well Finder online mapping application (CalGEM, 2024).

Therefore, the project would not result in the loss of availability of a known mineral resource or a locally-important mineral resource recovery site delineated on a local general plan. Overall, impacts would be less than significant in this regard.

Cumulative Impacts

The proposed project would not, make a substantial contribution to the loss of a mineral resource. The proposed project would not preclude any area from use as mineral extraction and it is not feasible to use the project site for mineral resources. Thus, the proposed project would not in conjunction with any other past present or reasonably foreseeable project result in a cumulative significant impact. As a result, no cumulative impacts related to mineral resources would occur and mitigation is not required.

4.13 Noise

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

Regulatory Setting

State

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of “normally acceptable”, “conditionally acceptable”, “normally unacceptable”, and “clearly unacceptable” noise levels for various land use types. Single-family homes are “normally acceptable” in exterior noise environments up to 60 CNEL and “conditionally acceptable” up to 70 CNEL. Multiple-family residential uses are “normally acceptable” up to 65 CNEL and “conditionally acceptable” up to 70 CNEL. Schools, libraries, and churches are “normally acceptable” up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

Title 24 – Building Code

The State’s noise insulation standards are codified in the California Code of Regulations, Title 24: Part 1, Building Standards Administrative Code, and Part 2, California Building Code. These noise standards are applied to new construction in California for interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 65 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new multi-family residential buildings, the acceptable interior noise limit for new construction is 45 dBA CNEL.

Local

El Dorado County General Plan

The El Dorado County General Plan Public Health, Safety, and Noise Element contains the following goals, objectives and policies that would be applicable to the project:

Goal 6.5. Acceptable Noise Levels. Ensure that County residents are not subjected to noise beyond acceptable levels.

Objective 6.5.1.: Protection of Noise-Sensitive Development. Protect existing noise-sensitive developments (e.g., hospitals, schools, churches and residential) from new uses that would generate noise levels incompatible with those uses and, conversely, discourage noise-sensitive uses from locating near sources of high noise levels.

Policy 6.5.1.2.: Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 6-2 at existing or planned noise sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy 6.5.1.3.: Where noise mitigation measures are required to achieve the standards of Tables 6-1 and Table 6-2, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project and the noise barriers are not incompatible with the surroundings.

Policy 6.5.1.7.: Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 6-2 for noise sensitive uses.

Policy 6.5.1.8.: New development of noise sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 6-1 unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels specified in Table 6-1.

Policy 6.5.1.11.: The standards outlined in Tables 6-3, 6-4, and 6-5 shall not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends, and on federally recognized holidays. Further, the standards outlined in Tables 6-3, 6-4, and 6-5 shall not apply to public projects to alleviate traffic congestion and safety hazards.

Table 6: Maximum Allowable Noise Exposure for Transportation Noise Sources corresponds to Table 6-1 from the El Dorado County General Plan, and lists land uses and associated maximum allowable mobile noise in outdoor activity areas and indoor spaces.

Table 6: Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use[1]	Outdoor Activity Areas[1]	Interior Spaces	
		L_{dn}/CNEL, dBA	L_{eq}, dBA[2]
Residential	60[3]	45	-
Transient Lodging	60[3]	45	-
Hospitals, Nursing Homes	60[3]	45	-
Theatres, Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls, Schools	60[3]	-	40
Office Buildings	-	-	45
Libraries, Museums	-	-	45
Playgrounds, Neighborhood parks	70	-	-

1. In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building facade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB L_{dn} shall be applied at a 100 foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB L_{dn} may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement.
2. As determined for a typical worst-case hour during periods of use.3. In areas where it is not possible to reduce exterior noise levels to 60 dB L_{dn} or below using a practical application of the best noise-reduction technology, an exterior noise level of up to 65 L_{dn} will be allowed.
4. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} /CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} /CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: El Dorado County General Plan Public Health, Safety, and Noise Element Table 6-1: Maximum Allowable Noise Exposure for Transportation Noise Sources, 2019

Additionally, **Table 7: Noise Level Performance Protection Standards For Noise Sensitive Land Uses Affected By Non-Transportation* Sources**, corresponds to Table 6-2 of the General Plan and lists daytime, evening, and nighttime noise level standards for stationary noise sources.

Table 7: Noise Level Performance Protection Standards For Noise Sensitive Land Uses Affected By Non-Transportation* Sources

Noise Level Descriptor	Daytime 7 AM to 7 PM		Evening 7 PM to 10 PM		Nighttime 10 PM to 7 AM	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, dBA	55	50	50	45	45	40
Maximum level, dBA	70	60	60	55	55	50

1. Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).
2. The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.
3. In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all effected property owners and approved by the County.
*Note: For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Control of noise from facilities of regulated public facilities is preempted by California Public Utilities Commission (CPUC) regulations. All other noise sources are subject to local

regulations. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, schools, hospitals, commercial land uses, other outdoor land use, etc.
Source: El Dorado County General Plan Public Health, Safety, and Noise Element Table 6-2: Noise Level Performance Protection Standards For Noise Sensitive Land Uses Affected By Non-Transportation Sources, 2019.

El Dorado County Municipal Code

The El Dorado County Municipal Code contains the following language that would be applicable to the project as related to noise:

Chapter 9.16 – Noise

Section 9.16.040: Loud and Raucous Noise – Definitions. Loud and raucous noise means:

1. Any noise made by the motor of any automobile, truck, tractor, motorcycle, or aircraft of any kind not reasonably required in the operation thereof under the circumstances and shall include, but not be limited to, backfiring, motor racing, and the buzzing by airplanes;
2. The sound of the discharge of any explosive except by or with the permission of any appropriate State or local licensing agency;
3. The human voice or any record or recording thereof when amplified by any device whether electrical or mechanical or otherwise to such an extent as to cause it to unreasonably carry on to public or private property or to be heard by others using the public highways, public thoroughfares, or public buildings;
4. Any sound not included in the foregoing, which is of such volume, intensity, or carrying power as to interfere with the peace and quiet of persons upon public or private property or other users of the public highways, thoroughfares, and buildings.

Section 9.16.050: Loud and Raucous Noise – Prohibited. Except as otherwise provided in this chapter, it is unlawful for any person to willfully make, emit, or transmit or cause to be made, emitted, or transmitted any loud and raucous noise upon or from any public highway or public thoroughfare or from any aircraft of any kind whatsoever, or from any public or private property to such an extent that it unreasonably interferes with the peace and quiet of another's private property.

Chapter 130 – Zoning

130.37.020.A: Activities conducted in public parks, public playgrounds, and public or private school grounds, including but not limited to school athletic and school entertainment events, providing an amplified sound system is not required or used.

130.37.020.D: Noise sources associated with property maintenance, such as lawn mowers, trimmers, snow blowers, power tools in good working order, and cutting of firewood for non-commercial personal use, provided that the activities take place between the hours of eight a.m. and nine p.m. on weekdays and nine a.m. to nine p.m. on weekends and federal holidays.

130.37.020.I: Construction performed during daylight hours, provided that all construction equipment are fitted with factory installed muffling devices and maintained in good working order (El Dorado County 2019). So while the 2004 version of the Noise Element includes Policy

6.5.1.11 and reference to construction noise limits at receiving types of land uses, such limits would not apply. It is anticipated that the project proposed construction schedule would comply with these limited construction work during daytime hours.

Existing Conditions

Existing Noise Sources

El Dorado County is impacted by various noise sources. Mobile sources of noise, especially cars and trucks, are the most common and significant sources of noise in the City. Stationary noise in the project vicinity is attributed to the operations of adjacent school uses to the north and west of the site, Latrobe Road to the east of the project site, and surrounding office building to the west. The noise associated with these sources may represent a single-event noise occurrence, short-term noise, or long-term/continuous noise. Other sources of noise are the various land uses (i.e., residential, commercial, institutional, and recreational and parks activities) throughout the County that generate stationary-source noise.

Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, hospitals, schools, guest lodging, libraries, and churches are treated as the most sensitive to noise intrusion and therefore have more stringent noise exposure targets than do other uses, such as manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. The surrounding land uses are predominantly mixed-use commercial, with residential uses to the east beyond Latrobe Road. As shown in **Table 8: Sensitive Receptors**, sensitive receptors near the project site include school uses, medical office buildings, and single family residences. These distances are from the project site to the sensitive receptor property line.

Table 8: Sensitive Receptors

Receptor Description	Distance and Direction from the Project Site
John Adams Academy	75 feet northwest
Dental Offices	85 feet northwest
Single Family Residences	715 feet southeast
Source: Google Earth, 2024. 1. Distance measured from the property line of the project site to the nearest receptor property line.	

a) *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Less Than Significant Impact.

Construction

The project includes construction of recreational park facilities. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g. land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. During construction, exterior noise levels could affect the residential neighborhoods surrounding the construction site. Project construction would occur approximately 75 feet from the existing school. However, construction activities would occur throughout the project site and would not be concentrated at a single point near sensitive receptors. Noise levels typically attenuate (or drop off) at a rate of 6 dB per doubling of distance from point sources, such as industrial machinery. During construction, exterior noise levels could affect the existing school and residential neighborhoods near the construction site.

Construction activities associated with development of the project would include site preparation, grading, paving, building construction, and architectural coating. Such activities may require graders, scrapers, and tractors during site preparation; graders, dozers, and tractors during grading; pavers, rollers, mixers, tractors, and paving equipment during paving; and air compressors during architectural coating. Grading and excavation phases of project construction tend to be the shortest in duration and create the highest construction noise levels due to the operation of heavy equipment required to complete these activities. It should be noted that only a limited amount of equipment can operate near a given location at a particular time. Equipment typically used during this stage includes heavy-duty trucks, backhoes, bulldozers, excavators, front-end loaders, and scrapers. Operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at lower power settings. Other primary sources of noise would be shorter-duration incidents, such as dropping large pieces of equipment or the hydraulic movement of machinery lifts, which would last less than one minute. According to the applicant, no pile-driving would be required during construction and the project would comply with the County's General Plan which limits allowable construction hours near sensitive receptors to between 7:00 a.m. and 7:00 p.m.

Chapter 130.37 of the County Zoning Ordinance complies with General Plan Goal 6.5 (Acceptable Noise Levels), and supplements County Code Chapter 9.16 (Noise) by establishing standards concerning acceptable noise levels for both noise-sensitive land uses and for noise-generating land uses. Per Section 130.37.020, "The following noise sources shall be exempt from the standards of this Chapter I. Construction (e.g., construction, alteration or repair activities) during daylight hours provided that all construction equipment shall be fitted with factory installed muffling devices and maintained in good working order." Table 130.37.060.1 contains noise standards for projects which require an acoustic analysis. The County would maintain compliance with the relevant requirements of Chapter 130.37, and construction of the project would not result in the generation of a substantial temporary increase in ambient noise levels in excess of the standards established in the General Plan Noise Element. Contract provisions would be used with construction contractors that would require them to comply with County noise standards while constructing project components. Therefore, construction noise impacts would be less than significant in this regard.

Operations

Implementation of the project would create new sources of noise in the project vicinity. The major noise sources associated with the project that would potentially impact existing and future nearby residences include the following use of the additional recreational amenities to be constructed. The proposed project includes the construction of a play structure, soccer field, amphitheater, restrooms, hard courts, a paved roadway, running trail, storage structures, and an outdoor learning area. Outdoor concerts and events utilizing amplified sound system(s) are not activities associated with the proposed project. The sensitive receptor is approximately 75 feet northwest of the project area.

According to **Table 7**, maximum noise levels allowable at community/rural centers is 70 dBA between the hours of 7:00 a.m. and 7:00 p.m., 60 dBA between 7:00 p.m. and 10:00 p.m., and 55 dBA between 10:00 p.m. and 7:00 a.m. The park would continue to be open during daylight hours and no night use is allowed, unless by special event permit for non-routine events. As the project site contains existing recreational activities, noise associated with the additional recreational amenities is not anticipated to result in a substantial increase in ambient noise levels in excess of standards established by County Code. Therefore, the impacts would be less than significant.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact.

Construction

Increases in groundborne vibration levels attributable to the project would be primarily associated with construction-related activities. Construction on the project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on soil composition and underground geological layer between vibration source and receiver.

The FTA has published standard vibration velocities for construction equipment operations. In general, depending on the building category of the nearest buildings adjacent to the potential pile driving area, the potential construction vibration damage criteria vary. For example, for a building constructed with reinforced concrete with no plaster, the FTA guidelines show that a vibration level of up 0.20 peak particle velocity (PPV) is considered safe and would not result in any construction vibration damage.

Table 9: Typical Construction Equipment Vibration Levels, lists vibration levels at 25 feet for typical construction equipment. Groundborne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As indicated in **Table 9**, based on FTA data, vibration velocities from typical heavy construction equipment operations that would be used during project construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity.

Table 9: Typical Construction Equipment Vibration Levels

Equipment	Peak Particle Velocity At 25 feet (in/sec)
Large Bulldozer	0.089
Loaded Trucks	0.076
Rock Breaker	0.059
Jackhammer	0.035
Small Bulldozer/Tractors	0.003

1. Calculated using the following formula: PPVequip = PPVref x (25/D)1.5, where: PPVequip = the peak particle velocity in in/sec of the equipment adjusted for the distance; PPVref = the reference vibration level in in/sec from Table 7-4 of the Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, 2018; D = the distance from the equipment to the receiver.

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

As shown in **Table 9***,* the highest vibration levels are achieved with the large bulldozer operations. This construction activity is expected to take place during grading. The nearest structure is approximately 75 feet from the active construction zone. As indicated in **Table 9**, construction vibration levels at the nearest sensitive receptors (75 feet away) would not exceed the FTA's 0.20 PPV threshold. In addition, construction activities would occur throughout the project site and would not be concentrated at the point closest to the nearest structure. Therefore, vibration impacts associated with the project would be less than significant.

Operations

The project would not generate groundborne vibration that could be felt at surrounding uses. Project operations would not involve railroads or substantial heavy truck operations, and therefore would not result in vibration impacts at surrounding uses. As a result, impacts from vibration associated with project operation would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact. The nearest airport to the project site is the Cameron Airpark Airport located approximately 5.6 miles northeast of the project site. The project site lies outside of the CNEL noise contours shown in the Cameron Airpark Airport Land Use Compatibility Plan published in June 2012.[8] Aircraft-related noise at the project site would not substantially increase ambient noise levels. Exterior noise levels resulting from aircraft would be compatible with the proposed project. By ensuring compliance with the City's normally acceptable noise level standards, interior noise levels would also be considered acceptable with aircraft noise. Therefore, the project would not expose people residing or working in the project area to excessive airport- or airstrip-related noise levels and no mitigation is required.

[8] Cameron Park Airport District, *Cameron Airpark Airport Land Use Compatibility Plan,* June 2012.

Cumulative Impacts

Cumulative Construction Noise

The project's construction activities, when properly mitigated, would not result in a substantial temporary increase in ambient noise levels. The County limits construction to the hours of 7:00 a.m. to 7:00 p.m. on Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends, and on federally recognized holidays. The project would contribute to other proximate construction noise impacts if construction activities were conducted concurrently. However, based on the noise analysis above, the project's construction-related noise impacts would be less than significant following compliance with local regulations.

Construction activities at other planned and approved projects would be required to take place during daytime hours, and the County and project applicants would be required to evaluate construction noise impacts and implement mitigation, if necessary, to minimize noise impacts. Each project would be required to comply with the applicable El Dorado County limitations on allowable hours of construction. Therefore, project construction would not contribute to cumulative impacts and impacts in this regard are not cumulatively considerable.

Cumulative Operational Noise

Cumulative noise impacts describe how much noise levels are projected to increase over existing conditions with the development of the project and other foreseeable projects. Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to buildout of the project and other projects in the vicinity.

As discussed above, impacts from the project's operations would be less than significant. Due to site distance, intervening land uses, and the fact that noise dissipates as it travels away from its source, noise impacts from on-site activities and other stationary sources would be limited to the project site and vicinity. No known past, present, or reasonably foreseeable projects would compound or increase the operational noise levels generated by the project. Thus, cumulative operational noise impacts from related projects, in conjunction with project-specific noise impacts, would not be cumulatively significant.

4.14 Population and Housing

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less Than Significant Impact. The proposed project does not include any residential uses that would directly generate new residents and increase the population within the County. The proposed project also would not result in intensification of land use. The project would not conflict with the existing zoning for the site. Additionally, the project is not anticipated to require a substantial number of new employees or uses that would increase demand for permanent employees.

Projects that would not directly increase population still have the potential to result in indirect population growth through the creation of jobs or the extension of infrastructure into areas that were not previously served. Though the project would include an internal roadway and outdoor recreation activities, all improvements are proposed to meet existing demand and would not result in increased population growth within the area. The outdoor recreation facilities would not lead to increased enrollment or the need for additional staff at John Adams Academy that could indirectly induce population growth. Although the project would create demand for construction workers, it is anticipated they would be limited and would come from the local population and other nearby cities. Therefore, impacts associated with unplanned population growth would be less than significant.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Less Than Significant Impact. The project site currently contains vacant, disturbed land with no structures or residences located on-site. The construction of this proposed project would not displace any existing housing or residential on the site or within the surrounding area. Additionally, the project site is not designated or zoned for residential use. Thus, the project would not displace existing people or housing and impacts would less than significant.

Cumulative Impacts

Overall, the proposed project would serve the exiting demand from the existing population within the local vicinity. The proposed project would be consistent with the planned land uses in the City's General Plan. The proposed project would not result in direct or indirect permanent or temporary impacts related to population, housing, or employment. The project would not, in conjunction with other past, present, or reasonably foreseeable projects, make a substantial impact to cumulative growth. The proposed project and other projects that have been, will be developed, or that are in the planning process are considered in the context of their consistency with local and regional planning efforts to include population growth and the need for housing. Therefore, the proposed project would not cause a cumulatively considerable impact on population and housing.

4.15 Public Services

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?			X	
ii) Police protection?			X	
iii) Schools?			X	
iv) Parks?			X	
v) Other public facilities?			X	

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

i. *Fire protection?*

Less Than Significant Impact. The project site is currently under the jurisdiction of the El Dorado Hills County Water District (EL Dorado Hills Fire Department). The nearest fire station to the project site is El Dorado Hills Fire Station 87. The proposed project includes additional sports fields, playground areas, outdoor learning areas, and a new internal roadway. The project would be required to adhere to all applicable regulations to reduce the potential for fire at the project site during construction and operation. The project improvements are proposed to meet existing demand and would not result in an intensification of land use, or the addition of residents that could increase demand for emergency services such that new governmental facilities would need to be constructed. Accordingly, the proposed project would not require the expansion or development of a new fire station or any other fire infrastructure, the construction of which could result in impacts to the environment. Thus, Impacts would be less than significant, and no mitigation is required.

ii. Police protection?

Less Than Significant Impact. The project site is currently under the jurisdiction of the El Dorado County Sheriff's Office. The proposed project would not include additional residential units or induce population growth within the area. The proposed project includes additional sports fields, playground areas, outdoor learning areas, and a new internal roadway to meet existing demand. These improvements would not result in intensification of land use, or the addition of structures or uses that would increase the number of residents that could increase demand for law enforcement services. Accordingly, the proposed project would not require the expansion or development of a new police station, or any other police related infrastructure, the construction of which could result in impacts to the environment. Thus, Impacts would be less than significant, and no mitigation is required.

iii. Schools?

Less Than Significant Impact. The El Dorado County Office of Education is the regional agency that provides educational leadership, resources, and customized services to assist the 15 school districts and 67 schools within the County. The project site falls within the Latrobe School District (K-8) and El Dorado Union High School District. However, John Adams Academy is a tuition-free public charter school that utilizes lottery based enrollment for admission. The proposed project includes additional sports fields, playground areas, outdoor learning areas, and a new internal roadway which would serve John Adams Academy El Dorado Hills Campus students. These improvements are proposed to meet existing demand and would not require additional staff or facilitate new students. The proposed project would not include additional residential units or induce unplanned population growth within the area. These improvements would not result in intensification of land use, or the addition of structures or uses that would increase the number of residents that could increase demand for school services.

Accordingly, the proposed project would not induce population growth and therefore would not result in the need for expansion or development of a school or any other education related infrastructure, the construction of which could result in impacts to the environment. Thus, Impacts would be less than significant, and no mitigation is required.

iv. Parks?

Less Than Significant Impact. The proposed project would not include additional residential units or induce unplanned population growth within the local community. The proposed project includes additional sports fields, playground areas, outdoor learning areas, and a new internal roadway for John Adams Academy. These improvements are proposed to meet existing demand and would not require additional staff or facilitate new students. These improvements would not result in intensification of land use, or the addition of structures or uses that would increase the number of residents that could increase demand for or use of parks within the County or region. Accordingly, the proposed project would not require the expansion or development of any public park, the construction of which could result in impacts to the environment. Thus, Impacts would be less than significant, and no mitigation is required.

v. Other public facilities?

Less Than Significant Impact. Other public facilities in the area such as health care, production, commercial, retail, residential, etc. would not be adversely impacted. The proposed project would not include additional residential units or induce unplanned population growth within the County. The proposed project includes additional sports fields, playground areas, outdoor learning areas, and a new internal roadway which would serve John Adams Academy students. These improvements would not result in intensification of land use, or the addition of structures or uses that would increase the number of residents that could increase demand for or use of other public services. Accordingly, the proposed project would not require the expansion or development of any of these resources, the construction of which could result in impacts to the environment. Thus, Impacts would be less than significant, and no mitigation is required.

Cumulative Impacts

The proposed project would not include additional residential units or induce unplanned population growth within El Dorado County. The proposed project would not result in intensification of land use, or the addition of structures or uses that would increase the number of residents that could increase demand for or use of public services within the region. The proposed project also would not combine with past, present, and reasonably foreseeable project such that a cumulative impact would result. Lastly, the proposed project would not result in substantial incremental effects to public services or facilities that could be compounded or increased when considered together with similar effects from other past, present, and reasonably foreseeable projects. The project alone would not result in cumulatively considerable impacts to public services or facilities.

4.16 Recreation

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?		X		

a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

Less Than Significant Impact. The proposed project does not include any residential units or any other type of use that would increase the population, or park and recreation facility demand in the area, or include any other type of use that would directly increase the use of park and recreation facilities. The proposed project would not result in an intensification of land uses, or the addition of structures or uses that would differ from the current General Plan. The nearest recreational parks are approximately 2 miles north of the project site, and the proposed project is not expected to increase use or contribute to deterioration of the existing parks. It is anticipated that the students would utilize the outdoor recreational facilities to be restored at the project site. Therefore, the proposed project would not result in a substantial increase on the demand for existing recreational resources such that substantial physical deterioration would occur or be accelerated. Thus, impacts of the proposed project would be less than significant in this regard and mitigation is not required.

b) *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Less Than Significant Impact with Mitigation. The project would expand the outdoor recreation facilities for John Adams Academy -El Dorado Hills Campus. As noted, the project would include but is not limited to sports fields, an outdoor amphitheater, outdoor learning area, playground structure, hard courts, running trail, storage structures, restrooms, and a paved roadway providing access for drop-off/pick-up of students at the school. The improvements would be located on approximately 5 acres immediately south of the parking lot associated with the John Adams

Academy building at 1104 Investment Boulevard. Project recreational facilities would be used by John Adams Academy students, with the exception of the soccer fields, which have the potential to be rented out on the weekends to local soccer clubs. The project could result in potential impacts to biological resources, cultural resources, geology and soils, and tribal cultural resources as identified throughout the initial study. Therefore, the project would include **MM BIO-1** through **MM BIO-5**, **MM CUL-1**, and **MM GEO-1** which would reduce all potential environmental impacts from implementation of the project to less than significant. Overall, while the project would include the construction of recreational facilities, only the soccer fields would be open to the general public, and the mitigation listed above would reduce potential impacts to less than significant impact.

Cumulative Impacts

Development of the proposed project would not create a significant cumulative increase of recreational facilities. In addition, the proposed project would not combine with other past, present, or reasonably foreseeable projects and result in significant cumulative impacts. The project would not impact any existing recreation facilities and would not create a substantial population increase to impact existing recreational facilities. Therefore, no cumulative impacts on recreational facilities would occur.

4.17 Transportation

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			**X**	
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			**X**	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			**X**	
d) Result in inadequate emergency access?			**X**	

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. The applicant proposes an internal roadway which would be used for school pick-up and drop-off purposes. The proposed roadway would be located along the western boundary of the project site and provide additional circulation between the existing 1102 and 1104 Investment Boulevard John Adams Academy buildings and parking lots. The roadway would connect to the existing parking lots and pedestrian facilities where appropriate.

Per the El Dorado County's Transportation and Circulation Element, "Level of Service (LOS) for County maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions." A *Traffic Evaluation Memorandum* was completed for the proposed project on February 7, 2024 by Kimley-Horn and Associates and is included as **Appendix E**. With the exception of the soccer fields, the proposed uses would not be utilized for external (non-John Adams Academy) activities and therefore the trips associated with these uses would be captured by the regular school traffic. Therefore, only the soccer fields were analyzed when considering net new external trips for the proposed project's impacts to LOS.

The number of trips anticipated to be generated by the project was approximated using data included in the *Trip Generation Manual, 11th Edition*, published by the Institute of Transportation Engineers (ITE). ITE Land Use (LU) Code 488 (Soccer Complex) was used to approximate trips generated by the project. **Table 10: Project Trip Generation** provides a summary of the trip generation for the project.

Table 10: Project Trip Generation

Land Use	Size	AM Peak-Hour			PM Peak-Hour			Saturday Peak-Hour		
		Total (Trips)	IN (Trips)	OUT (Trips)	Total (Trips)	IN (Trips)	OUT (Trips)	Total (Trips)	IN (Trips)	OUT (Trips)
488 -Soccer Complex	2 Fields	4	2	2	34	16	18	75	36	39
Net New External Trips:		**4**			**34**			**75**		

Source: **Appendix E**, ITE Trip Generation Manual, 11th Edition

While the project is anticipated to generate the most traffic during the Saturday peak-hour, the traffic demand during the Saturday peak-hour is not expected to result in the level of congestion as documented during the weekday PM peak-hour scenario. According to data obtained from the County, the Saturday peak-hour traffic equates to 56-percent of the traffic experienced during the weekday, PM peak-hour along Latrobe Road just north of Investment Boulevard (**Appendix E**). Because the background volumes on Saturdays are significantly lower than those observed during the weekdays, the following analysis focuses on the weekday AM and PM peak-hours using the Project's Saturday peak-hour generated trips.

Trip distribution for the Proposed Project was consistent with the previously approved John Adams Academy Expansion Transportation Impact Study (TIS). The existing conditions were established using the "Existing (2021) plus Proposed Project" counts from the prior study, see **Appendix E** background data. The Existing plus Proposed Project scenario for the proposed project was established by manually adding the distributed project trip generation to the Existing conditions. **Table 11: Existing plus Proposed Project Intersection Levels of Service** summarizes LOS for the Existing and Existing plus Proposed Project scenarios at the following offsite intersections:

1. Latrobe Road at Golden Foothill Parkway North/Monte Verde Drive
2. Latrobe Road at Golden Foothill Parkway South/Clubview Drive
3. Latrobe Road at Investment Boulevard

Table 11: Existing plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Existing		Existing Plus Proposed Project	
				Delay (sec)	LOS	Delay (sec)	LOS
1	Latrobe Road at Golden Foothill Parkway North/Monte Verde Drive	Signal	AM	55.1	E	58.9	E
			PM	15.3	B	15.5	B
2	Latrobe Road at Golden Foothill Parkway South/Clubview Drive	Signal	AM	75.6	E	76.3	E
			PM	34.3	C	34.2	C
3	Latrobe Road at Investment Boulevard	Signal	AM	32.7	C	40.2	D
			PM	13.9	B	14.8	B

Per the El Dorado County's Transportation and Circulation Element, "Level of Service (LOS) for County maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions." As noted in the table above, off-site intersections impacted by the project would operate at an acceptable LOS and would not conflict with County standards for unincorporated areas.

The *Traffic Evaluation Memorandum* also analyzed the project in accordance with El Dorado County's Transportation Impact Study Guidelines and against applicable General Plan goals. The project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Therefore, the project would have a less than significant impact in this regard.

b) *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

Less Than Significant Impact. A *Vehicle Miles Traveled (VMT) Analysis Memorandum* (VMT Memo) was completed for the proposed project on February 9, 2024 by Kimley-Horn and Associates and is included as **Appendix F**. With the exception of the soccer fields, the proposed uses would not be utilized for external (non-John Adams Academy) activities and therefore the trips associated with these uses would be captured by the regular school traffic. Therefore, only the soccer fields were analyzed when considering net new external trips for the proposed project. Specifically, the VMT Memo analyzed the VMT impact from potential future use of local soccer clubs renting the soccer fields on Saturdays.

The VMT Memo found the VMT impact of the proposed soccer field use to be unique and not able to be represented in the El Dorado County Travel Demand Model (EDC TDM) which represents a "typical weekday". Therefore, a qualitative VMT analysis was conducted to calculate VMT for the proposed project. As the proposed project is not a residential or office land use, a "net change" metric was used as the determination of an impact. The project's specific land use is not called out in the County's Guidelines, and therefore the project was evaluated as a local-serving use against a retail VMT threshold of no net increase for regional VMT.

In general, local serving land uses primarily serves pre-existing needs (i.e., they do not generate new trips because they meet existing demand). Because of this, local-serving uses can be presumed to reduce trip lengths when a new project is proposed. Essentially, the assumption is that someone will travel to a newly constructed local serving use because of a its proximity. This results in a trip on the roadway network becoming shorter, rather than a new trip being added to the roadway network. Specifically for the proposed project, the addition of the soccer fields does not generate new trips as the soccer teams that would use the fields exist already and are not formed due to the existence of the soccer fields. Rather, the teams that would use the fields on Saturdays currently play elsewhere that are further away from the player's homes and would relocate (shorten their existing trip) to the fields because they would be closer. The proposed Project is expected to reroute existing trips on the transportation network rather than generate new trips. As such, this means that the impact to the transportation system will be reduced by the introduction of new soccer fields that are primarily local in their service focus.

The State's *Technical Advisory* provides that a less than significant finding can be substantiated by showing the proximity of other similar uses. The following soccer fields within the County exist for teams to practice and play. The Bass Lake Park Sellwood Field Soccer Ground, the Valley View Sports Park, and Promontory Community Park are the only facilities west of the City of Placerville that offer soccer fields, but all three must share the facilities with other sports. Therefore, the proposed Project would reduce trip lengths by adding soccer field opportunities into the local area, further improving the destination proximity. Accordingly, it is appropriate that the proposed project development be presumed, in accordance with the *Technical Advisory*, that it would result in a VMT reduction and support the goals of SB 743. Overall, the proposed project would not conflict with CEQA Guidelines section 15064.3, subdivision (b) and would result in a less than significant impact.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The proposed project includes the construction of an internal paved roadway providing a direct connection between the two John Adams Academy parking lots. The internal roadway would increase efficiency and safety for drop-off and pick-up activities for the school. No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay that could impede emergency vehicles or emergency access. The project does not include any design features or incompatible used that pose a significant safety risk. The project would create no adverse impacts to emergency vehicle access or circulation. Therefore, project implementation would have a less than significant impact in this regard.

d) Result in inadequate emergency access?

Less Than Significant Impact. Emergency vehicle access to the project area and vicinity would be maintained at all times throughout construction activities. Project development would not impede access around the John Adams Academy facilities or other uses within the business park for wildland fire equipment. No site circulation or access issues have been identified that would cause a traffic safety problem/hazard or any unusual traffic congestion or delay that would impede emergency access to any local roadways or surrounding properties or result in a safety risk. All driveways and roads would be constructed to accommodate all emergency vehicles and personnel. Therefore, implementation of the proposed project would have a less than significant impact in this regard.

Cumulative Impacts

The proposed project would have a less than significant impact with respect to transportation. The proposed project and foreseeable future projects would be subject to compliance with the established regulatory framework, which would reduce potential impacts. Therefore, the project’s contribution to cumulatively significant impacts would similarly be less than significant.

4.18 Tribal Cultural Resources

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) 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				
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)?		X		
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?		X		

a) *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:*

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. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less Than Significant Impact with Mitigation. A SLF search request was sent to the NAHC on September 29, 2023for the presence of recorded sacred sites on the proposed project site. The NAHC responded to the request on November 3, 2023, indicating a negative result and provided fifteen (15) Native American Tribal Contacts to be contacted regarding known and recorded cultural resources sites with the project site (**Appendix C**). In a letter dated February 20, 2024, the Lead Agency contacted everyone on the NAHC list via U.S. mail with certified receipt. The letter provided preliminary project information as the initiation of Section 106 consultation pursuant to the NHPA and as formal notification of a proposed project as required under CEQA, specifically PRC 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52).

Table 12: AB52 Native American Consultation Summary lists all the individuals contacted and describes all correspondences with tribes. At the time of preparation of this document no tribes have requested formal consultation.

Table 12: AB52 Native American Consultation Summary

Tribe Name	Contact	Letter Date	Comments
Colfax-Todds Valley Consolidated Tribe	Pamela Cubbler, Vice Chairperson	02/20/2024	No response, to date.
Colfax-Todds Valley Consolidated Tribe	Clyde Prout, Chairperson	02/20/2024	No response, to date.
Colfax-Todds Valley Consolidated Tribe	CTVCT Preservation, Cultural Preservation Department	02/20/2024	No response, to date.
Ione Band of Miwok Indians	Sara Dutscheke, Chairperson	02/20/2024	No response, to date.
Shingle Springs Band of Miwok Indians	James Sarmento, Executive Director of Cultural Resources,	02/20/2024	No response, to date.
Shingle Springs Band of Miwok Indians	Kara Perry, Director of Site Protection	02/20/2024	No response, to date.
Shingle Springs Band of Miwok Indians	Regina Cuellar, Chairperson	02/20/2024	No response, to date.
Shingle Springs Band of Miwok Indians	Krystal Moreno, TEK Program Manager	02/20/2024	No response, to date.
Shingle Springs Band of Miwok Indians	Malissa Tayaba, Vice Chairperson; Director of TEK	02/20/2024	No response, to date.
Shingle Springs Band of Miwok Indians	Dustin Murray, Tribal Administrator	02/20/2024	No response, to date.
Tsi Akim Maidu	Grayson Coney, Cultural Director	02/20/2024	No response, to date.

United Auburn Indian Community of the Auburn Rancheria	Gene Whitehouse, Chairperson	02/20/2024	No response, to date.
Wilton Rancheria	Cultural Preservation Department,	02/20/2024	No response, to date.
Wilton Rancheria	Dahlton Brown, Executive Director of Administration	02/20/2024	No response, to date.
Wilton Rancheria	Herbert Griffin, Executive Director of Cultural Preservation	02/20/2024	No response, to date.

Due to the possible presence of unknown tribal cultural resources within the project site, construction related impacts to tribal cultural resources could be potentially significant. Though the circumstances would present a low possibility, the following mitigation measure would reduce impacts in the unanticipated discovery of cultural resources during construction. With the implementation of **MM CUL-1** above in Section 4.5 *Cultural Resources*, impacts would be less than significant.

Cumulative Impacts

The combination of the proposed project as well as past, present, and reasonably foreseeable projects in the local area would be required to comply with all applicable State, federal, and County and local regulations concerning preservation, salvage, or handling of tribal cultural resources. Similar to the proposed project, these projects also would be required to implement and conform to applicable mitigation measures, which would be likely to reduce impacts to less than significant. In addition, implementation of **MM CUL-1** would reduce project-specific impacts to a less than significant level. Therefore, the project's contribution to cumulative impacts would be less than significant.

4.19 Utilities and Service Systems

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. The proposed project includes the construction of additional sports fields, playground areas, outdoor learning areas, and a new internal roadway. Other improvements would include new field lighting, concessions stand, restrooms. These project components would require additional water, wastewater, and electric power service, however existing infrastructure is already in place. The project would connect to existing utility systems and would not require the construction of new water treatment facilities or the expansion of any existing facilities. The proposed project has been designed so as to not interfere with any existing utilities and would not require relocation of any existing utilities. This represents a less than significant impact.

b) *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

Less Than Significant Impact. Water service to John Adams Academy is provided by the El Dorado Irrigation District (EID). The project site falls within the El Dorado Hills supply area which receives its water from Folsom Reservoir under 3 separate contracts; a water service contract with the United States Bureau of Reclamation, a Warren Act contract for the Ditch/Weber Reservoir, and Water Right Permit 21112 (IED, 2022). The EID Water Supply and Demand Report from 2022, identified 9,600 acre-feet of unallocated water supply in 2021.

As stated above, the proposed project includes construction of a new concessions stand and restrooms which would use potable water. This would increase water use on the project site compared to existing conditions. The restrooms and concessions stand would connect to the existing water infrastructure currently serving John Adams Academy and would represent a minor increase in the school's water demand. The proposed project also includes new synthetic turf soccer fields that would not require irrigation. Due to the unallocated water supply identified by the EID for the El Dorado Hills supply area, and the minimal water demand from the proposed project, it can be assumed the EID would have ample water supplies to serve the project for foreseeable normal, dry, and multiple dry years. Therefore, the project would result in a less than significant impact to water supplies.

c) *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less Than Significant Impact. The project site falls within the EID which would provide wastewater services to the project site. As stated above, the proposed project includes construction of a new concessions stand and restrooms which would generate wastewater. The restrooms would connect to the existing wastewater infrastructure currently serving John Adams Academy and would represent a minor increase in the school's overall wastewater demand. The proposed project would not increase the service capacity of the existing wastewater lines. Thus, the proposed project would not result in any new wastewater generators, nor does it propose any improvements that would result in increased treatment demand by wastewater treatment provider that new capacity would be needed. Impacts would be less than significant, and mitigation is not required.

d) *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Or,

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

Less Than Significant Impact. The proposed project would not result in a long-term use that would generate substantial volumes of waste that would require disposal. Construction and operation of the proposed project, however, would result the generation of minor volumes of solid waste. Waste that is generated during construction could be self-hauled, or contract services with El Dorado Disposal could be made. The California Integrated Waste Management Act (AB 939) requires cities and counties to divert a minimum of 50 percent of their solid waste from landfills. The project would result in a minimal increase in soils waste generation and therefore, the project would not interfere with regulations related to solid waste or generate waste in excess of the capacity of local infrastructure. The proposed project would have a less than significant impact in this regard.

Cumulative Impacts

Utilities are generally provided or delivered on a local level but often originate from sources outside local areas as most areas are served through the regional distribution system. As discussed above, the proposed project does not include any uses that would require significant long term utilities services, with the exception of a minimal increase in electricity and water/wastewater demand for new field lighting, concessions stand, and restrooms. Taken in conjunction with past, present, and reasonably foreseeable projects the overall increased demand for utilities would be incrementally small and the project would not make a substantial cumulative contribution. Therefore, implementation of the project would not result in a cumulatively considerable contribution to impacts on water supply and wastewater, stormwater, or solid waste generation.

4.20 Wildfire

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			X	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			X	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X	

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The project is located within El Dorado County which has a Local Hazard Mitigation Plan (LHMP) (2019) and Emergency Operations Plan (EOP) (2023). The construction and operation of the proposed project would not conflict with the LHMP or EOP and would be comply with applicable County goals and policies pertaining to wildfire emergency response or evacuation. Project construction would not require lane closure, obstruct traffic circulation or prevent civilian evacuation. In addition, the project would construct an internal circulation road, which could provide improved access to and from the project area in the event of an emergency. Therefore, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan and therefore would result in a less than significant impact.

b) *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

Less Than Significant Impact. The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. The project in not located on or near an area with steep slopes. The project would include removing the existing non-native vegetation, constructing turf soccer fields, planting trees, retention basins, and re-seeding grass areas, all of which would reduce wildfire risks. Further, the project site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ) (CAL FIRE, 2023). The closest VHFHSZ is approximately 1 mile east designated within a State Responsibility Area. Therefore, the project would not exacerbate wildfire risk, impacts would be less than significant in this regard.

c) *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

Less Than Significant Impact. The proposed project includes standard infrastructure improvements associated with construction of a new internal roadway that connects to existing parking lot configuration and pedestrian facilities. Additionally, the project would connect to existing utilities within the business parks internal roadway. However, the extension of utilities to the project site would not be in any area prone to wildfire, and it would not result in temporary or long-term impacts in this regard. As noted above, the project site is located in a State Responsibility Area and is not designated as within a VHFHSZ. Further, the project would comply with applicable County goals and policies related to wildfire. Therefore, implementation of the proposed project would not result in exacerbated fire risk and impacts would be less than significant.

d) *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

Less Than Significant Impact. The proposed project site is not within a VHFHSZ nor located near steep slopes or hillsides. The proposed project would implement efficient landscape maintenance practices and retention basins to decrease the release of stormwater running off the site; therefore, the proposed project site would not expose people to downstream flooding or landslides as a result of runoff. Impacts would be less than significant.

<u>Cumulative Impacts</u>

The proposed project would not create an increased risk or wildfire on-site or to those in the area. The project would not conflict with an emergency response plan or evacuation route. In addition, similar to the proposed project, past, present, and reasonably foreseeable projects would also be required to comply with applicable County goals and policies pertaining to wildfire. Therefore, the proposed project, combined with past, present, and reasonably foreseeable projects would not exacerbate wildfire risk such that a cumulative impact would occur.

4.21 Mandatory Findings of Significance

ENVIRONMENTAL IMPACTS Issues	Potentially Significant Issues	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Does the project:				
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact with Mitigation. On the basis of the foregoing analysis, the project does not have the potential to significantly degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten or eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. The project site is in an urbanized area and is currently vacant previously disturbed land. On-site vegetation is limited to ornamental landscaping and non-native habitats. As noted in Section 4.4, *Biological Resources*, there would be a less than significant impact to important plants or wildlife on the site with implementation of **MM BIO-1** through **MM BIO-5**. Additionally, as noted in Section 4.5, *Cultural Resources*, there are no examples of California history or prehistory on the site or suspected to be found on the site that would be impacted by the project.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Less Than Significant Impact. As noted above in environmental checklist Sections 4.1 through 4.20, the analysis concluded that the project would have no impact, a less than significant impact, or a less than significant impact with mitigation incorporated with respect to all environmental issue areas.

As discussed in respective issue areas, cumulative impacts may occur under several environmental issue areas, including: Air Quality, Greenhouse Gases, and Transportation. As noted in Section 4.3, *Air Quality*, the project would not result in a cumulatively considerable net increase of criteria pollutants, as project construction and operation would remain below EDCAQMD daily thresholds. Impacts related to GHG emissions are cumulative in nature and, as discussed in Section 4.8, *Greenhouse Gas Emissions*, the project would result in a less than significant impact as emissions would not exceed identified thresholds. As discussed in Section 4.17, *Transportation*, the project would not contribute to potentially significant traffic impacts because project trip generation falls below the thresholds outlined in El Dorado County's Transportation and Circulation Element and because the project was found to result in a VMT reduction.

Resource issue areas that were determined to have no impact, a less than significant impact, or a less than significant impact with mitigation, would not have the potential to be cumulatively considerable, and the project would not contribute to cumulative impacts related to these issues. Resource issue areas that are project-specific by nature, such as geology and hazards, would not have substantial contributions to the cumulative scenario, as impacts at one location do not add to impacts at other locations or create additive impacts. Furthermore, future projects in the vicinity of the project site would be required to undergo the appropriate level of environmental review and mitigate potential impacts, as necessary. This impact would be less than significant.

c) *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

Less Than Significant Impact. There are no known substantial adverse effects on human beings, which the proposed project would cause, either directly or indirectly. The environmental evaluation has concluded that no significant environmental impacts would result from the project.

5.0 REFERENCES

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APPENDIX A
Air Quality and Greenhouse Gas Modeling Data

John Adams Academy Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	John Adams Academy
Construction Start Date	4/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	9.40
Location	1102 Investment Blvd, El Dorado Hills, CA 95762, USA
County	El Dorado-Mountain County
City	Unincorporated
Air District	El Dorado County AQMD
Air Basin	Mountain Counties
TAZ	470
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

City Park	7.00	Acre	7.00	0.00	152,000	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.44	3.74	36.0	35.5	0.05	1.60	21.0	22.6	1.47	5.05	6.52	—	5,622	5,622	0.23	0.05	1.17	5,645
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.44	1.20	11.2	13.1	0.02	0.50	9.30	9.68	0.46	0.95	1.29	—	2,398	2,398	0.10	0.02	0.02	2,406
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.42	1.19	11.2	11.8	0.02	0.50	4.39	4.90	0.46	0.97	1.43	—	1,985	1,985	0.08	0.02	0.10	1,993
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.26	0.22	2.04	2.16	< 0.005	0.09	0.80	0.89	0.08	0.18	0.26	—	329	329	0.01	< 0.005	0.02	330

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	4.44	3.74	36.0	35.5	0.05	1.60	21.0	22.6	1.47	5.05	6.52	—	5,622	5,622	0.23	0.05	1.17	5,645
2025	0.15	0.13	0.88	1.14	< 0.005	0.03	0.00	0.03	0.03	0.00	0.03	—	134	134	0.01	< 0.005	0.00	134
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.44	1.20	11.2	13.1	0.02	0.50	0.00	0.50	0.46	0.00	0.46	—	2,398	2,398	0.10	0.02	0.00	2,406
2025	1.35	1.13	10.4	13.0	0.02	0.43	9.30	9.68	0.40	0.95	1.29	—	2,398	2,398	0.10	0.02	0.02	2,406
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.42	1.19	11.2	11.8	0.02	0.50	4.39	4.90	0.46	0.97	1.43	—	1,985	1,985	0.08	0.02	0.10	1,993
2025	0.22	0.19	1.66	2.19	< 0.005	0.07	0.75	0.82	0.06	0.08	0.14	—	367	367	0.01	< 0.005	0.02	369
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.26	0.22	2.04	2.16	< 0.005	0.09	0.80	0.89	0.08	0.18	0.26	—	329	329	0.01	< 0.005	0.02	330
2025	0.04	0.03	0.30	0.40	< 0.005	0.01	0.14	0.15	0.01	0.01	0.03	—	60.8	60.8	< 0.005	< 0.005	< 0.005	61.0

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.17	0.25	0.12	0.92	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	0.32	180	180	0.04	0.01	0.68	184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.23	0.14	0.88	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	0.32	167	168	0.04	0.01	0.02	172

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.15	0.23	0.13	0.85	< 0.005	< 0.005	4.20	4.20	< 0.005	0.44	0.44	0.32	170	170	0.04	0.01	0.29	174
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.04	0.02	0.16	< 0.005	< 0.005	0.77	0.77	< 0.005	0.08	0.08	0.05	28.1	28.1	0.01	< 0.005	0.05	28.8

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.17	0.16	0.12	0.92	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	—	178	178	0.01	0.01	0.68	182
Area	0.00	0.09	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	1.47	1.47	< 0.005	< 0.005	—	1.48
Waste	—	—	—	—	—	—	—	—	—	—	—	0.32	0.00	0.32	0.03	0.00	—	1.14
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	0.17	0.25	0.12	0.92	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	0.32	180	180	0.04	0.01	0.68	184
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.15	0.14	0.14	0.88	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	—	166	166	0.01	0.01	0.02	169
Area	—	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	1.47	1.47	< 0.005	< 0.005	—	1.48
Waste	—	—	—	—	—	—	—	—	—	—	—	0.32	0.00	0.32	0.03	0.00	—	1.14
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

Total	0.15	0.23	0.14	0.88	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	0.32	167	168	0.04	0.01	0.02	172
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.15	0.14	0.13	0.85	< 0.005	< 0.005	4.20	4.20	< 0.005	0.44	0.44	—	168	168	0.01	0.01	0.29	172
Area	0.00	0.09	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	1.47	1.47	< 0.005	< 0.005	—	1.48
Waste	—	—	—	—	—	—	—	—	—	—	—	0.32	0.00	0.32	0.03	0.00	—	1.14
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	0.15	0.23	0.13	0.85	< 0.005	< 0.005	4.20	4.20	< 0.005	0.44	0.44	0.32	170	170	0.04	0.01	0.29	174
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.03	0.02	0.16	< 0.005	< 0.005	0.77	0.77	< 0.005	0.08	0.08	—	27.8	27.8	< 0.005	< 0.005	0.05	28.4
Area	0.00	0.02	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.24	0.24	< 0.005	< 0.005	—	0.25
Waste	—	—	—	—	—	—	—	—	—	—	—	0.05	0.00	0.05	0.01	0.00	—	0.19
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	0.03	0.04	0.02	0.16	< 0.005	< 0.005	0.77	0.77	< 0.005	0.08	0.08	0.05	28.1	28.1	0.01	< 0.005	0.05	28.8

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	4.34	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.97	1.80	< 0.005	0.09	—	0.09	0.08	—	0.08	—	290	290	0.01	< 0.005	—	291
Dust From Material Movement	—	—	—	—	—	—	0.42	0.42	—	0.22	0.22	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.36	0.33	< 0.005	0.02	—	0.02	0.01	—	0.01	—	48.0	48.0	< 0.005	< 0.005	—	48.2
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.19	0.00	0.00	10.9	10.9	0.00	1.11	1.11	—	200	200	0.01	0.01	0.82	203

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.58	0.58	0.00	0.06	0.06	—	10.1	10.1	< 0.005	< 0.005	0.02	10.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.11	0.11	0.00	0.01	0.01	—	1.67	1.67	< 0.005	< 0.005	< 0.005	1.69
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.24	3.56	34.1	33.8	0.05	1.57	—	1.57	1.44	—	1.44	—	5,336	5,336	0.22	0.04	—	5,354
Dust From Material Movement	—	—	—	—	—	—	5.52	5.52	—	2.67	2.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.59	5.60	5.56	0.01	0.26	—	0.26	0.24	—	0.24	—	877	877	0.04	0.01	—	880
Dust From Material Movement	—	—	—	—	—	—	0.91	0.91	—	0.44	0.44	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.02	1.01	< 0.005	0.05	—	0.05	0.04	—	0.04	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.17	0.17	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.09	1.70	0.00	0.00	15.5	15.5	0.00	1.58	1.58	—	286	286	0.01	0.01	1.17	290
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.02	0.22	0.00	0.00	2.48	2.48	0.00	0.25	0.25	—	43.2	43.2	< 0.005	< 0.005	0.08	43.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.45	0.45	0.00	0.05	0.05	—	7.15	7.15	< 0.005	< 0.005	0.01	7.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.46	0.38	3.58	4.18	0.01	0.16	—	0.16	0.15	—	0.15	—	765	765	0.03	0.01	—	767

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.65	0.76	< 0.005	0.03	—	0.03	0.03	—	0.03	—	127	127	0.01	< 0.005	—	127
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.92	1.15	< 0.005	0.04	—	0.04	0.03	—	0.03	—	211	211	0.01	< 0.005	—	212
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.0	35.0	< 0.005	< 0.005	—	35.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.08	0.07	0.61	0.82	< 0.005	0.03	—	0.03	0.03	—	0.03	—	124	124	0.01	< 0.005	—	125
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.6
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.07	0.74	0.00	0.00	9.30	9.30	0.00	0.95	0.95	—	151	151	< 0.005	0.01	0.02	153
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.75	0.75	0.00	0.08	0.08	—	12.7	12.7	< 0.005	< 0.005	0.02	12.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.14	0.14	0.00	0.01	0.01	—	2.10	2.10	< 0.005	< 0.005	< 0.005	2.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.13	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.0	19.0	< 0.005	< 0.005	—	19.1
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.15	3.15	< 0.005	< 0.005	—	3.16
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	0.17	0.16	0.12	0.92	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	—	178	178	0.01	0.01	0.68	182
Total	0.17	0.16	0.12	0.92	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	—	178	178	0.01	0.01	0.68	182
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	0.15	0.14	0.14	0.88	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	—	166	166	0.01	0.01	0.02	169
Total	0.15	0.14	0.14	0.88	< 0.005	< 0.005	4.31	4.31	< 0.005	0.45	0.45	—	166	166	0.01	0.01	0.02	169
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	0.03	0.03	0.02	0.16	< 0.005	< 0.005	0.77	0.77	< 0.005	0.08	0.08	—	27.8	27.8	< 0.005	< 0.005	0.05	28.4
Total	0.03	0.03	0.02	0.16	< 0.005	< 0.005	0.77	0.77	< 0.005	0.08	0.08	—	27.8	27.8	< 0.005	< 0.005	0.05	28.4

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.09	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.02	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	1.47	1.47	< 0.005	< 0.005	—	1.48
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	1.47	1.47	< 0.005	< 0.005	—	1.48
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	1.47	1.47	< 0.005	< 0.005	—	1.48
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	1.47	1.47	< 0.005	< 0.005	—	1.48
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.24	0.24	< 0.005	< 0.005	—	0.25
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.24	0.24	< 0.005	< 0.005	—	0.25

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.32	0.00	0.32	0.03	0.00	—	1.14
Total	—	—	—	—	—	—	—	—	—	—	—	0.32	0.00	0.32	0.03	0.00	—	1.14
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.32	0.00	0.32	0.03	0.00	—	1.14
Total	—	—	—	—	—	—	—	—	—	—	—	0.32	0.00	0.32	0.03	0.00	—	1.14
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	0.05	0.00	0.05	0.01	0.00	—	0.19
Total	—	—	—	—	—	—	—	—	—	—	—	0.05	0.00	0.05	0.01	0.00	—	0.19

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	4/1/2024	4/26/2024	5.00	20.0	—
Grading	Grading	4/29/2024	7/19/2024	5.00	60.0	—
Building Construction	Building Construction	7/22/2024	2/14/2025	5.00	150	—
Paving	Paving	2/17/2025	3/28/2025	5.00	30.0	—
Architectural Coating	Architectural Coating	3/1/2025	5/13/2025	5.00	52.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	2.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37

Grading	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	14.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	25.0	14.3	LDA,LDT1,LDT2
Grading	Vendor	—	8.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	0.00	14.3	LDA,LDT1,LDT2

Building Construction	Vendor	0.00	8.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	14.3	LDA,LDT1,LDT2
Paving	Vendor	—	8.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.00	14.3	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

Site Preparation	—	—	30.0	0.00	—
Grading	—	—	120	0.00	—
Paving	0.00	0.00	0.00	0.00	152,000

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
City Park	152,000	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
City Park	28.0	28.0	28.0	10,220	193	193	193	70,566

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
City Park	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
City Park	0.00	1,631,227

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
City Park	0.60	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.5	annual days of extreme heat
Extreme Precipitation	6.80	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	17.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	0	0	0	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	1	1	1	2
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	1	1	1	2
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	74.2
AQ-PM	16.7
AQ-DPM	5.15
Drinking Water	55.8
Lead Risk Housing	5.99

Pesticides	23.4
Toxic Releases	16.0
Traffic	50.7
Effect Indicators	—
CleanUp Sites	82.1
Groundwater	59.6
Haz Waste Facilities/Generators	56.4
Impaired Water Bodies	0.00
Solid Waste	88.9
Sensitive Population	—
Asthma	13.0
Cardio-vascular	27.7
Low Birth Weights	19.0
Socioeconomic Factor Indicators	—
Education	30.9
Housing	12.0
Linguistic	20.6
Poverty	13.3
Unemployment	25.2

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	77.7235981
Employed	34.1075324
Median HI	84.47324522

Education	—
Bachelor's or higher	73.48902862
High school enrollment	100
Preschool enrollment	52.58565379
Transportation	—
Auto Access	78.96830489
Active commuting	58.03926601
Social	—
2-parent households	62.04285898
Voting	94.70037213
Neighborhood	—
Alcohol availability	85.42281535
Park access	10.56075966
Retail density	13.06300526
Supermarket access	26.89593225
Tree canopy	81.44488644
Housing	—
Homeownership	76.49172334
Housing habitability	82.59976902
Low-inc homeowner severe housing cost burden	41.87090979
Low-inc renter severe housing cost burden	78.91697677
Uncrowded housing	66.9190299
Health Outcomes	—
Insured adults	83.39535481
Arthritis	0.0
Asthma ER Admissions	89.3
High Blood Pressure	0.0

Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	70.8
Cognitively Disabled	32.0
Physically Disabled	46.5
Heart Attack ER Admissions	74.2
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	67.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	1.3
SLR Inundation Area	0.0
Children	25.4
Elderly	17.2
English Speaking	88.9
Foreign-born	13.6
Outdoor Workers	69.0

Climate Change Adaptive Capacity	—
Impervious Surface Cover	90.8
Traffic Density	24.7
Traffic Access	0.0
Other Indices	—
Hardship	36.9
Other Decision Support	—
2016 Voting	97.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	13.0
Healthy Places Index Score for Project Location (b)	78.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Anticipated Construction Schedule
Construction: Off-Road Equipment	Increased grading equipment for the 45,000 cy of cut/fill on the site
Construction: Paving	Pavement included for hard courts and two amphitheaters
Operations: Vehicle Data	No trips associated with park
Operations: Landscape Equipment	Anticipated landscape equipment
Land Use	Recreational Building Area includes bathrooms and associated storage facilities

APPENDIX B
Biological Resources Assessment

Biological Resources Assessment for the John Adams Academy Sports Field Project

Sacramento County, California

Prepared For:

Kimley-Horn and Associates, Inc.

Prepared By:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
2525 Warren Drive
Rocklin, California 95677

January 17, 2024

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
˚F	Degrees Fahrenheit
AMSL	Above mean sea level
BCC	Birds of Conservation Concern
BIOS	Biogeographic Information and Observation System
BRA	Biological Resources Assessment
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CEHC	California Essential Habitat Connectivity
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Ranks
CWA	Clean Water Act
DPS	Distinct Population Segment
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
GPS	Global Positioning System
HCP	Habitat Conservation Plan
km	Kilometer
LSAA	Lake or Streambed Alteration
MBTA	Migratory Bird Treaty Act
MCV	*A Manual of California Vegetation Online*
N/A	Not Applicable
NCCP	Natural Community Conservation Plan
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
Plan	County of El Dorado Adopted General Plan
Project	John Adams Academy Sports Field
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USFWS	U.S. Fish and Wildlife Service
WL	Watch List
WL	Watch List

1.0 INTRODUCTION

At the request of Kimley-Horn and Associates, Inc., ECORP Consulting, Inc. has conducted a Biological Resources Assessment (BRA) for the proposed John Adams Academy Sports Field (Project) located in El Dorado Hills, Sacramento County, California. The results of this assessment will support environmental review of the Project in accordance with the California Environmental Quality Act (CEQA) and provide the basis for identifying appropriate measures to lessen or avoid significant impacts to biological resources.

1.1 Project Location and Description

The Proposed Project entails the construction of a sports and multi-purpose complex with two amphitheaters, a running trail, a basketball court, hard courts, two soccer fields, a learning pavilion, an outdoor plaza, a playground area as well as related utility, infrastructure, landscaping improvement and installation (Figure 1). The Project Site is located directly south of John Adams Academy and is bordered to the east by Latrobe Road and to the south by a recently graded access road.

1.2 Biological Study Area

The Biological Study Area (BSA, Figure 2) includes all areas where Project-related activities may result in impacts to sensitive biological resources. The 5.1-acre BSA corresponds to a portion of Section 24, Township 09 North, and Range 8 East (Mount Diablo Base and Meridian) of the “Folsom SE, California” 7.5-minute quadrangles (U.S. Geological Survey [USGS] 2023) (Figure 1). The approximate center of the BSA is located at 38.618309° North and -121.052352° West within the Upper Cosumnes watershed (Hydrological Unit Code 18040013, Natural Resources Conservation Service [NRCS] et al., 2016).

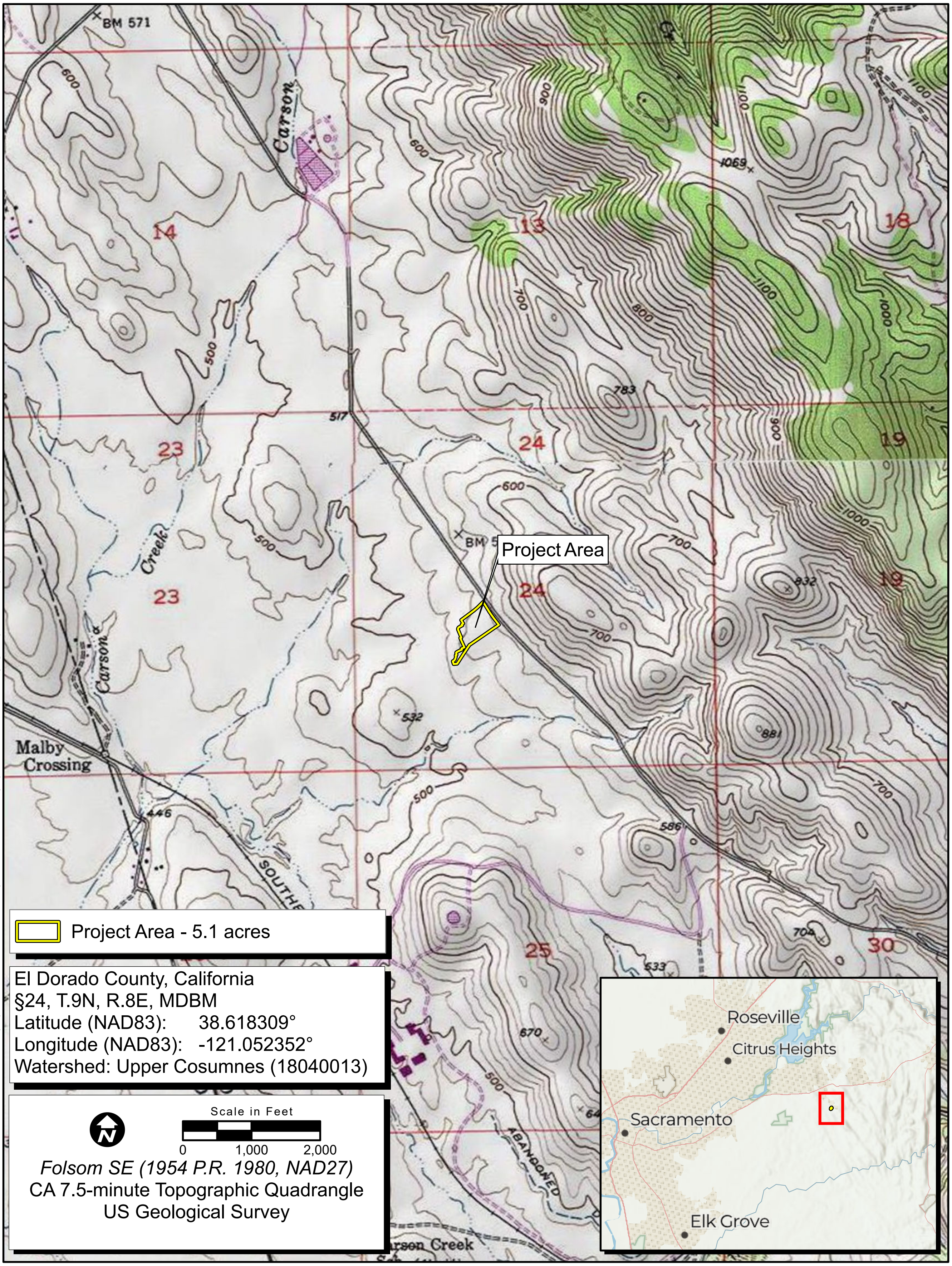
1.3 Purpose of this Biological Resources Assessment

The purpose of this BRA is to assess the potential for occurrence of special-status plant and animal species or their habitats, and other sensitive or protected resources such as migratory birds, sensitive natural communities, riparian habitat, oak woodlands, and potential waters of the U.S. or State, including wetlands, within the BSA. This assessment does not include determinate field surveys conducted according to agency-promulgated protocols. The conclusions and recommendations presented in this report are based upon a review of available literature and the results of site reconnaissance field surveys.

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of the CEQA Guidelines;

Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Location_Vicinity\John Adams Vicinity.aprx - John Adams LnV (mguidry - 9/28/2023)



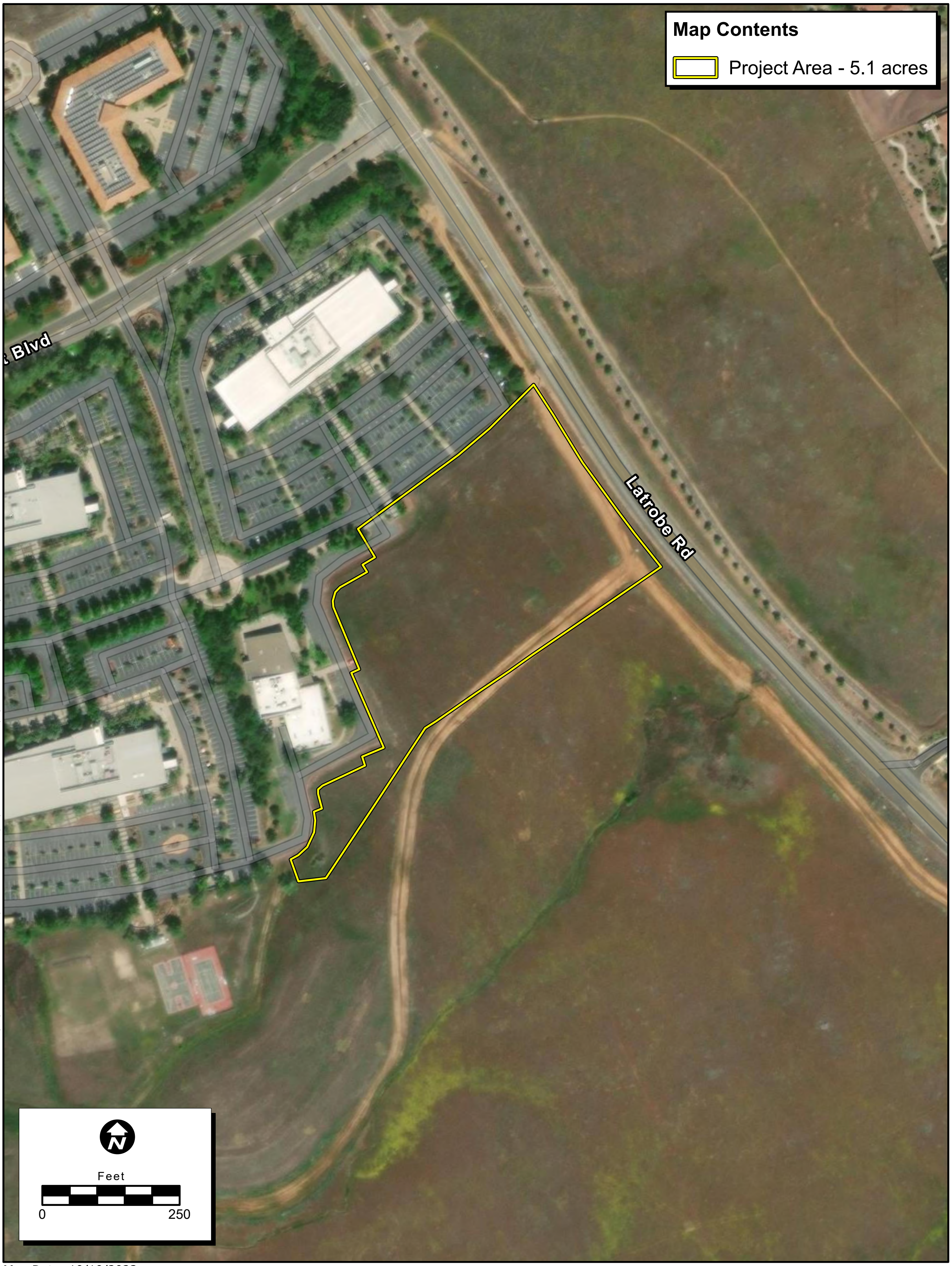
Map Date: 9/28/2023

Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2023-195 John Adams Academy Sports



Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Aerial_Maps\JAAS Aerial Map.aprx - JAAS Aerial Map (kedwards - 10/10/2023)

Map Date: 10/10/2023
Sources: Esri Imagery, Vivid Advanced, MAXAR (05/01/2022)

Figure 2. Biological Study Area

2023-195 John Adams Academy Sports

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

- are identified as a Species of Special Concern (SSC) and as Watch List (WL) by the California Department of Fish and Wildlife (CDFW);
- are birds identified as Birds of Conservation Concern (BCC) by the U.S. Fish and Wildlife Service (USFWS);
- are plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" or "rare, threatened, or endangered in California but more common elsewhere" (California Rare Plant Ranks [CRPR] 1 and 2); CRPR List 3 and 4 species are excluded as special-status species pursuant to the El Dorado County General Plan.
- are plants listed as rare under the California Native Plant Protection Act (NPPA, California Fish and Game Code, Section 1900 et seq.); or
- are fully protected in California in accordance with the California Fish and Game Code, Sections 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes).

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The federal ESA protects plants and animals that are listed as endangered or threatened by the USFWS or the National Marine Fisheries Service (NMFS). Section 9 of the ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, the ESA prohibits removing or possessing any listed plant on federal land, maliciously damaging or destroying any listed plant in any area, or removing, cutting, digging up, damaging, or destroying any such species in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its designated Critical Habitat. Through consultation and the issuance of a Biological Opinion, the USFWS may issue an incidental take statement allowing take of a listed species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a Habitat Conservation Plan (HCP) is developed.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The protections of the MBTA extend to disturbances that result in abandonment of a nest with eggs or young. As authorized by the MBTA, the USFWS may issue permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits.

2.1.3 Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the U.S. without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas:

> "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b).

The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

2.2 State or Local Regulations

2.2.1 California Fish and Game Code

2.2.1.1 California Endangered Species Act

The California ESA (California Fish and Game Code Sections 2050-2116) generally parallels the main provisions of the federal ESA, but unlike its federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called *candidates* by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. *Take* is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Section 2081 allows CDFW to authorize incidental take permits if species-specific minimization and avoidance measures are incorporated to fully mitigate the impacts of the project.

2.2.1.2 Fully Protected Species

The state of California first began to designate species as *fully protected* prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the state and/or federal ESAs. Previously, the regulations that implement the Fully Protected Species Statute (California Fish and Game Code Sections 4700 for mammals, 3511 for birds, 5050 for reptiles and amphibians, and 5515 for fish) provided that fully protected species may not be taken or possessed at any time. However, on July 10, 2023, Senate Bill 147 was signed into law, authorizing CDFW to issue take permits under the California ESA for fully protected species for qualifying projects through 2033. Qualifying projects include the following:

- A maintenance, repair, or improvement project to the State Water Project, including existing infrastructure, undertaken by the Department of Water Resources.
- A maintenance, repair, or improvement project to critical regional or local water agency infrastructure.

- A transportation project, including any associated habitat connectivity and wildlife crossing project, undertaken by a state, regional, or local agency, that does not increase highway or street capacity for automobile or truck travel.
- A wind project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the state to a point of junction with any California-based balancing authority.
- A solar photovoltaic project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the state to a point of junction with any California-based balancing authority.

CDFW may also issue licenses or permits for take of these species for necessary scientific research or live capture and relocation, and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan (NCCP) within which such species are covered.

2.2.1.3 Native Plant Protection Act

The NPPA of 1977 was created with the intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW and provided in California Fish and Game Code Sections 1900-1913. The Fish and Wildlife Commission has the authority to designate native plants as *endangered* or *rare* and to protect endangered and rare plants from take. The California ESA of 1984 (California Fish and Game Code Sections 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

2.2.1.4 California Fish and Game Code Special Protections for Birds

Sections 3503, 3513, and 3800 of the California Fish and Game Code specifically protect birds. Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 prohibits the take, possession, or destruction of any birds in the orders Strigiformes (owls) or Falconiformes (hawks and eagles), as well as their nests and eggs. Section 3513 prohibits the take or possession of any migratory nongame bird as designated in the MBTA. Section 3800 states that, with limited exceptions, it is unlawful to take any nongame bird, defined as all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds. These provisions, along with the federal MBTA, serve to protect all nongame birds and their nests and eggs, except as otherwise provided in the code.

2.2.1.5 Lake or Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires that a Notification of Lake or Streambed Alteration (LSAA) be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The notification must incorporate proposed measures to protect affected fish and wildlife resources. During their review, CDFW may suggest additional protective measures. An LSAA is the final proposal mutually agreed upon by CDFW and the applicant. Projects that require an LSAA often also require a permit from the USACE under Section 404 of the CWA. The conditions of the Section 404 permit and the LSAA frequently overlap in these instances.

2.2.2 California Oak Woodlands Conservation Act

The California Oak Woodlands Conservation Act was passed in 2001 to address loss of oak woodland habitats throughout the state. As a result of the Act, the Oak Woodland Conservation Program was established to provide funding for conservation and protection of California oak woodlands. Public Resources Code Section 21083.4 went into effect as of January 1, 2005 and requires lead agencies to analyze potential effects to oak woodlands during the CEQA process. If it is determined that a project may have a significant effect on oak woodlands, the lead agency must implement one of several mitigation alternatives, including conservation of oak woodlands through conservation easements, planting or restoration of oak woodlands, contribution of funds to the Oak Woodlands Conservation Fund, or other appropriate mitigation measures.

2.2.3 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB also regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities.

2.2.4 California Environmental Quality Act

Per CEQA Guidelines Section 15380, a species not protected on a federal or state list may be considered rare or endangered if the species meets certain specified criteria. These criteria follow the definitions in the federal and California ESAs, and Sections 1900-1913 of the California Fish and Game Code, which deal with rare or endangered plants or animals. Section 15380 was included in the CEQA Guidelines primarily to deal with situations where a project under review may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW.

2.2.4.1 CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of *impact significance* to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Pursuant to Appendix G, impacts to biological resources would normally be considered significant if the project would:

- 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 CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected Waters of the U.S. including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- 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;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA because although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

2.2.4.2 Species of Special Concern

The CDFW defines SSC as a species, subspecies, or distinct population of an animal native to California that are not legally protected under ESA, the California ESA or the California Fish and Game Code, but currently satisfy one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.

- The species is listed as federally (but not state-) threatened or endangered, and meets the state definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.

SSC are typically associated with threatened habitats. Projects that result in substantial impacts to SSC may be considered significant under CEQA.

2.2.4.3 USFWS Bird of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA." To meet this requirement, the USFWS published a list of BCC (USFWS 2021) for the U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.

2.2.4.4 Watch List Species

The CDFW maintains a list consisting of taxa that were previously designated as *Species of Special Concern* but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Depending on the policy of the lead agency, projects that result in substantial impacts to species on the WL may be considered significant under CEQA.

2.2.4.5 California Rare Plant Ranks

The CNPS maintains the *Rare Plant Inventory* (CNPS 2023a), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere

- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere
- Rare Plant Rank 3 – a review list of plants about which more information is needed
- Rare Plant Rank 4 – a watch list of plants of limited distribution

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 0.1 through 0.3, with 0.1 being the most threatened and 0.3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
- Threat Rank 0.2 – Moderately threatened in California (20-80 percent of occurrences threatened/moderate degree and immediacy of threat)
- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2023b). Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, 2A, or 2B are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

2.2.4.6 Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are imperiled or vulnerable to environmental effects of projects. CDFW maintains the California Natural Community List (CDFW 2022a), which provides a list of vegetation alliances, associations, and special stands as defined *in A Manual of California Vegetation Online* (MCV; CNPS 2023b), along with their respective state and global rarity ranks, if applicable. Natural communities with a state rarity rank of S1, S2, or S3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

2.2.4.7 Wildlife Movement Corridors and Nursery Sites

Impacts to wildlife movement corridors or nursery sites may be considered significant under CEQA. As part of the California Essential Habitat Connectivity Project, CDFW and California Department of Transportation maintain data on Essential Habitat Connectivity areas. This data is available in the CNDDB. The goal of this Project is to map large intact habitat or natural landscapes and potential linkages that could provide corridors for wildlife. In urban settings, riparian vegetated stream corridors can also serve as wildlife movement corridors. Nursery sites include but are not limited to concentrations of nest or den sites such as heron rookeries, bat maternity roosts, and mule deer critical fawning areas. These data are available through CDFW's Biogeographic Information and Observation System (BIOS, CDFW 2023b) database or as occurrence records in the CNDDB and are supplemented with the results of the field reconnaissance.

2.2.5 El Dorado County General Plan

The County of El Dorado Adopted General Plan (Plan) is the governing document for planning and development related decisions within El Dorado County limits (County of El Dorado 2019).

The Conservation and Open Space Element of the Plan generally outlines goals, objectives, policies, mitigation requirements, and programs related to the protection of special-status species, aquatic resources, riparian areas, wildlife, and vegetation of significant biological, ecological, and recreational value, including Pine Hill rare plant species, forest, oak woodland, and tree resources.

3.0 METHODS

3.1 Literature Review

ECORP biologists performed a review of existing available information for the BSA. Literature sources included current and historical aerial imagery, any previous biological studies conducted for the area, topographic mapping, soil survey mapping available from the NRCS *Web Soil Survey*, USFWS National Wetlands Inventory (NWI, USFWS 2023c) mapping, USFWS Critical Habitat Mapper, NMFS Essential Fish Habitat Mapper, and other relevant literature as cited throughout this document. ECORP reviewed the following resources to identify special-status plant and wildlife species that have been documented in or near the BSA:

- CDFW's CNDDB data for the "Folsom SE", California" 7.5-minute quadrangle and the surrounding eight quadrangles "Folsom", "Clarksville", "Shingle Springs", "Latrobe", "Buffalo Creek", "Sloughhouse", "Carbondale", and "Irish Hill" (CDFW 2023a);
- CNPS Rare Plant Inventory data for the "Folsom SE", California" 7.5-minute quadrangle and the surrounding eight quadrangles (CNPS 2023);
- USFWS Information for Planning and Consultation Resource Report List for the BSA (USFWS 2023a);
- NMFS Resources data for the "Folsom SE", California" 7.5-minute quadrangle (National Oceanic and Atmospheric Administration [NOAA] 2016).

The results of the database queries are provided in Appendix A. Each special-status species identified in the literature review is evaluated for its potential to occur in the BSA in Section 4 based on available information concerning species habitat requirements and distribution, occurrence data, and the findings of the site reconnaissance.

3.2 Site Reconnaissance

ECORP Senior Biologist Keith Kwan and Associate Biologist AJ Samra conducted the site reconnaissance visit on October 10, 2023. The biologists visually assessed the BSA while walking meandering transects through all portions of the site. Areas that were not accessible by foot were scanned using binoculars. The following biological resource information was collected:

- Characteristics and approximate boundaries of vegetation communities and other land cover types;
- Plant and animal species or their sign directly observed;
- Incidental observations of special habitat features such as burrows, active raptor nests, potential bat roost sites.

Vegetation communities were qualitatively assessed and mapped based on dominant plant composition. Vegetation community classification was based on the classification systems presented in the MCV.

Special attention was given to identifying those portions of the BSA with the potential to support special-status species or sensitive habitats. Data were recorded on a Global Positioning System (GPS) unit, field notebooks, and/or maps. Photographs were taken during the survey to provide visual representation of the conditions within the BSA.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The BSA is located on somewhat flat terrain in an undeveloped area directly south of John Adams Academy. The BSA is situated at an elevational range of approximately 522 to 559 feet above mean sea level (AMSL) in the Northern Sierra Nevada Foothills region of the California floristic province (Jepson eFlora 2023). The average winter low temperature is 39.7 degrees Fahrenheit (˚F) and the average summer high temperature is 90.8˚F; the average annual precipitation is approximately 18.14 inches at the Sacramento Executive AP station, which is approximately 24 miles west from the BSA (NOAA 2023).

The vast majority of the BSA is undeveloped land with a small portion that includes the adjacent parking lot and landscaping and various ornamental tree species. The entirety of the undeveloped portion of the BSA is composed of nonnative annual grassland. Vegetation communities and plant species composition are described in further detail below. Land uses surrounding the BSA include the adjacent John Adams Academy school facilities, business park, and residential communities. Figure 2 provides an overview of the Project setting, including existing land uses within and adjacent to the BSA.

Representative photographs of the BSA are provided in Appendix B.

4.2 Soils and Geology

Soil survey mapping for the BSA was obtained from the NRCS Web Soil Survey [accessed on October 12, 2023] (Figure 3). According to the results from this search, two soil units have been mapped in this area. Table 1 provides an overview of these soil series as well as key features, such as hydric rating or presence of serpentine or gabbroic soil material.

Table 1. Soil Series Mapped in the BSA

Map Unit	Key Features
AxD – Auburn very rocky silt loam, 2 – 30% slopes	No hydric soils, well drained
AwD – Auburn silt loam, 2 – 30% slopes	No hydric soils, well drained

Note: BSA = Biological Study Area

The Auburn soil series consists of shallow to moderately deep, well drained soils formed in material weathered from amphibolite schist. Auburn soils are on foothills and have slopes of 2 to 75 percent.

4.3 Vegetation Communities and Land Cover Types

Vegetation communities and land cover types within the Study Area are described in the following sections, as observed during the site reconnaissance. Vegetation communities on the site include nonnative annual grassland and urban/developed landscape. A list of plants observed onsite can be found in Appendix C. The approximate extent of vegetation communities and land cover types are depicted on Figure 4.

Map Features

Project Area - 5.1 acres

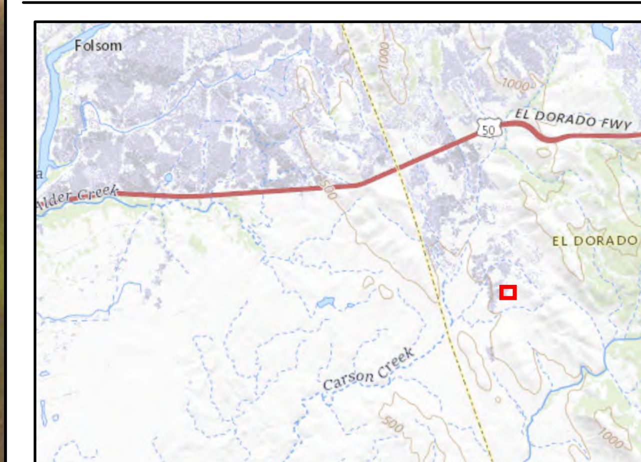
NRCS Soil Types

AwD - Auburn silt loam, 2 to 30 percent slopes

AxD - Auburn very rocky silt loam, 2 to 30 percent slopes

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for El Dorado County, CA

Sources: Esri Imagery, Vivid Advanced, MAXAR (05/01/2022)



Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Soils_and_Geology\JAAS Soils.aprx - JAAS Soils 20231010 (kedwards - 10/13/2023)

Map Date: 10/13/2023

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Scale in Feet
0 100

Figure 3. Natural Resources Conservation Service Soil Types

2023-195 John Adams Academy Sports

Map Contents

Project Area - 5.1 acres

Vegetation Communities and Land Cover Types

Annual Grassland - 5.0 acres

Developed - 1.0 acres

Sources: Esri Imagery, Vivid Advanced, MAXAR (05/01/2022)

Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Vegetation_and_LandCover\JAAS Vegetation Land Cover.aprx - JAAS Vegetation and Land Cover (kedwards - 11/13/2023)

Map Date: 11/13/2023

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Scale in Feet
0 100

Figure 4. Vegetation Communities

2023-195 John Adams Academy Sport

4.3.1 Annual Grassland

The annual grassland community is found across a majority of the acreage within the BSA. The annual grassland in the BSA is dominated by nonnative annual grasses and nonnative forbs including wall barley (*Hordeum murinum*), Italian thistle (*Carduus pycnocephalus*), soft brome (*Bromus hordeaceus*), medusahead (*Taeniatherum caput-medusae*), wild oats (*Avena* sp.), rose clover (*Trifolium hirtum*), St. John's wort (*Hypericum perforatum*) and ryegrass (*Lolium* sp.) One native shrub, a coyote bush (*Baccharis pilularis*), was also present at the southern edge of the grassland.

The annual grasslands can be characterized as the *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance (CNPS 2023b). Semi-natural alliances are strongly dominated by nonnative plants that have become naturalized in the state, do not have state rarity rankings, and are not considered sensitive natural communities.

4.3.2 Developed Landscape

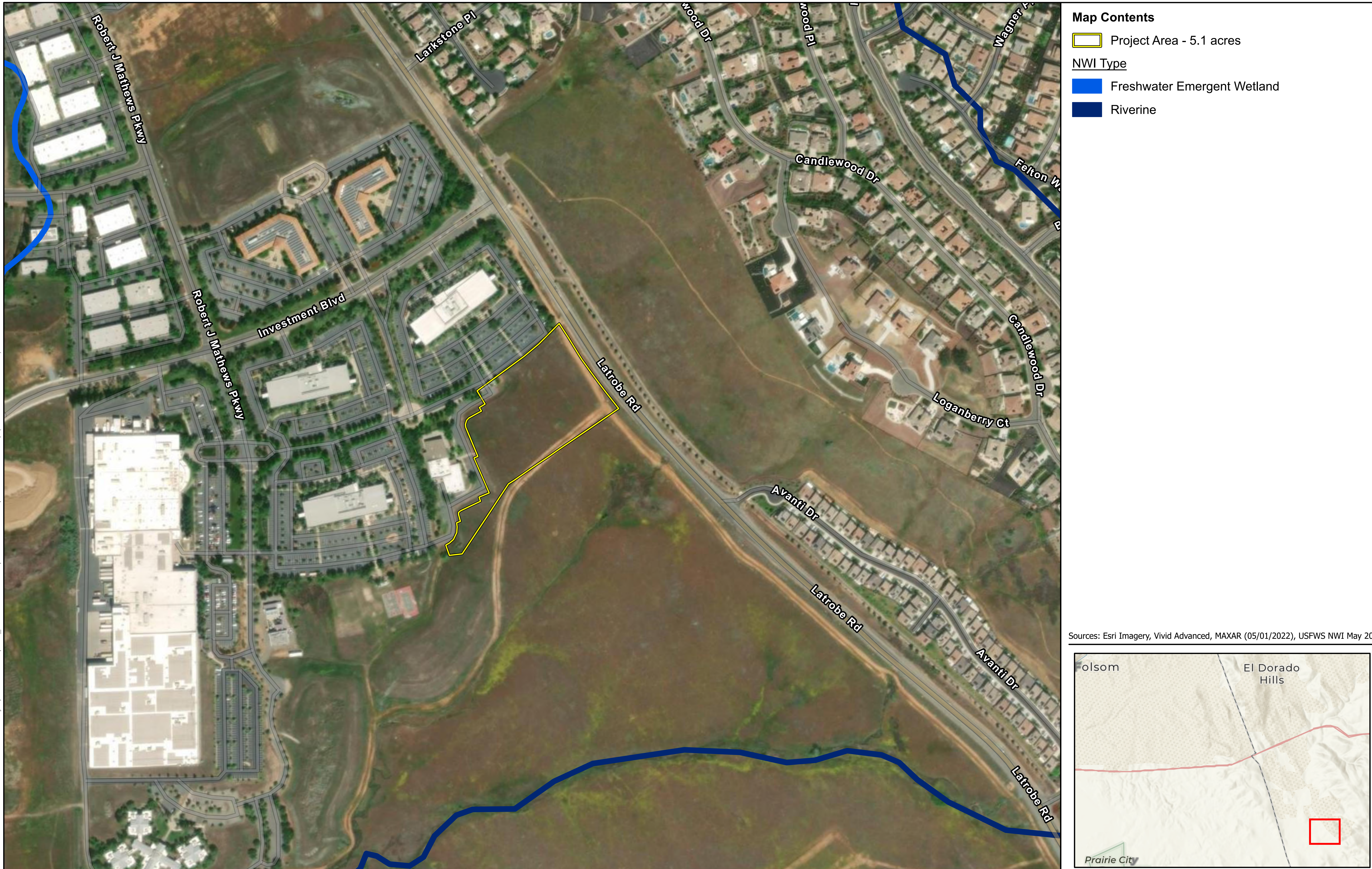
The developed land cover type is found in the northwestern corner within the BSA and occupies a very small portion of the overall area. This area is composed of a developed access road leading further into the parking lots of the adjacent school facilities and several nonnative ornamental tree species including Callery pear (*Pyrus calleryana*) and sweetgum (*Liquidambar styraciflua*).

4.4 Aquatic Resources

ECORP biologists conducted a preliminary aquatic resources assessment within the BSA to identify potential Waters of the U.S./State; no aquatic resources were found onsite. In addition, the biologists queried the NWI; no NWI aquatic features were previously mapped in the BSA (Figure 5).

4.5 Wildlife

The vegetation communities in the BSA provide habitat for a variety of wildlife species. Wildlife species observed onsite during the October 10, 2023 field visit include killdeer (*Charadrius vociferus*), red-winged blackbird (*Agelaius phoeniceus*), Anna's hummingbird (*Calypte anna*), white-crowned sparrow (*Zonotrichia leucophrys*), Brewer's blackbird (*Euphagus cyanocephalus*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorhous mexicanus*), white - tailed kite (*Elanus leucurus*), savannah sparrow (*Passerculus sandwichensis*), and yellow-rumped warbler (*Setophaga coronata*). Other species typically associated with the vegetation communities found in the BSA include California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), western kingbird (*Tyrannus verticalis*), and western fence lizard (*Sceloporus occidentalis*). A list of wildlife species observed in the BSA during the site reconnaissance visit is provided in Appendix D.



Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Aquatic_Resources\JAAS Aquatic Resources.aprx - JAAS NWI Map (kedwards - 10/11/2023)

Map Date: 10/11/2023

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Figure 5. National Wetlands Inventory

2023-195 John Adams Academy Sports

4.6 Special-Status Species

Table 2 presents the list of special-status plant and animal species identified through the literature review. For each species, the table provides the listing status, a brief description of habitat requirements and/or species ecology, a determination of the potential to occur within the BSA, and the rationale for that determination. The potential for each species to occur onsite was assessed using the following criteria:

- **Present** – Species was observed during the site visit or is known to occur within the BSA based on recent documented occurrences within the CNDDB or other literature.
- **Potential to Occur** – Suitable habitat (including soils and elevation requirements) occurs in the BSA and the species is known or expected to occur in the Project vicinity based on available data sources or professional knowledge/experience.
- **Low Potential to Occur** – Marginal or limited amounts of habitat occur or the species is not known to occur in the vicinity of the Project based on CNDDB records and other available information.
- **Absent** – No suitable habitat (including soils and elevation requirements) and the species is not known to occur within the vicinity of the Project based on CNDDB records and other documentation.

Following the table includes a description of special-status species that were assessed for potential to occur onsite, and a brief discussion of each special-status species that was determined to have potential to occur onsite follows.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	California ESA/ NPPA	Other		
Plants					
Jepson's onion *(Allium jepsonii)*	–	–	1B.2	Serpentine or volcanic soils in chaparral, cismontane woodland, and lower montane coniferous forests. Elevation: 985'–4,330' Bloom Period: April–August	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name ***(Scientific Name)***	**ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Ione manzanita *(Arctostaphylos myrtifolia)*	FT	–	1B.2	Chaparral and cismontane woodlands associated with very acidic, nutrient–poor, coarse soils typical of the Ione Formation. Elevation: 195'–1,905' Bloom Period: November–March	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Stebbins' morning-glory *(Calystegia stebbinsii)*	FE	CE	1B.1	Gabbroic or serpentine soils in chaparral and cismontane woodland. Elevation: 605'–3,575' Bloom Period: April–July	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Chaparral sedge *(Carex xerophila)*	–	–	1B.2	Serpentine or gabbroic soils within chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 1,445'–2,525' Bloom Period: March–June	Absent. No suitable habitat onsite and outside of the known elevational range for this species. No CNDDB records within 5 miles.
Pine Hill ceanothus *(Ceanothus roderickii)*	–	–	1B.1	Rocky serpentine or gabbroic soil in chaparral and cismontane woodland. Elevation: 805'–3,575' Bloom Period: April–June	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Red Hills soaproot *(Chlorogalum grandiflorum)*	–	–	1B.2	Serpentine or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest, occasionally on non–ultramafic soils. Elevation: 805'–5,545' Bloom Period: May–June	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	California ESA/ NPPA	Other		
Dwarf downingia *(Downingia pusilla)*	–	–	2B.2	Mesic areas in valley and foothill grassland, and vernal pools. Species has also been found in disturbed areas such as tire ruts and scraped depressions (CDFW 2023a). Elevation: 5′–1,460′ Bloom Period: March–May	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Ione buckwheat *(Eriogonum apricum* var. *apricum)*	FE	CE	1B.1	Openings in chaparral communities found on Ione soils. Elevation: 195′–475′ Bloom Period: July–October	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Irish Hill buckwheat *(Eriogonum apricum* var. *prostratum)*	FE	CE	1B.1	Openings in chaparral communities found on Ione soils. Elevation: 295′–395′ Bloom Period: June–July	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Tuolumne button-celery *(Eryngium pinnatisectum)*	–	–	1B.2	Vernal pools and other mesic conditions in cismontane woodland and lower montane coniferous forests. Elevation: 230′–3,000′ Bloom Period: May–August	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Pine Hill flannelbush *(Fremontodendron decumbens)*	FE	CR	1B.2	Serpentine or gabbro rock outcrops in chaparral and cismontane woodland. Elevation: 1,395′–2,495′ Bloom Period: April–July	Absent. No suitable habitat onsite and outside of the known elevational range for this species. No CNDDB records within 5 miles.
El Dorado bedstraw *(Galium californicum* ssp. *sierrae)*	FE	CR	1B.2	Gabbroic soil in chaparral, cismontane woodland and lower montane coniferous forest communities. Elevation: 330′–1,920′ Bloom Period: May–June	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
Common Name ***(Scientific Name)***	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**California ESA/ NPPA**	**Other**		
Boggs Lake hedge-hyssop *(Gratiola heterosepala)*	–	CE	1B.2	Marshes, swamps, lake margins, and vernal pools. Elevation: 35′–7,790′ Bloom Period: April–August	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Parry's horkelia *(Horkelia parryi)*	–	–	1B.2	Ione and other soil formations in chaparral and cismontane woodlands. Elevation: 260′–3,510′ Bloom Period: April–September	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Ahart's dwarf rush *(Juncus leiospermus* var. *ahartii)*	–	–	1B.2	Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005). Elevation: 100′–750′ Bloom Period: March–May	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Legenere *(Legenere limosa)*	–	–	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005). Elevation: 5′–2,885′ Bloom Period: April–June	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Pincushion navarretia *(Navarretia myersii* ssp. *myersii)*	–	–	1B.1	Often acidic soils in vernal pools. Elevation: 65′–1,085′ Bloom Period: April–May	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Slender Orcutt grass *(Orcuttia tenuis)*	FT	CE	1B.1	Vernal pools, often gravelly. Elevation: 115′–5,775′ Bloom Period: May–September	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	California ESA/ NPPA	Other		
Sacramento Orcutt grass *(Orcuttia viscida)*	FE	CE	1B.1	Vernal pools. Elevation: 100'–330' Bloom Period: April–July	Absent. No suitable habitat onsite for this species. No CNDDB records within 5 miles.
Layne's ragwort (*Packera layneae*)	FT	CR	1B.2	Rocky serpentine or gabbroic soil in chaparral and cismontane woodland communities. Elevation: 655'–3,560' Bloom Period: April–August	Absent. No suitable habitat onsite for this species. There are two CNDDB records within 5 miles.
Sanford's arrowhead *(Sagittaria sanfordii)*	–	–	1B.2	Shallow marshes and freshwater swamps. Elevation: 0'–2,135' Bloom Period: May–October	Absent. No suitable habitat onsite for this species. There is one CNDDB record within 5 miles.
El Dorado County mule ears *(Wyethia reticulata)*	–	–	1B.2	Clay or gabbroic soils in chaparral, cismontane woodland, and lower montane coniferous forest communities. Elevation: 605'–2,065' Bloom Period: April–August	Absent. No suitable habitat onsite for this species. There is one CNDDB record within 5 miles.
Invertebrates					
Crotch's bumble bee *(Bombus crotchii)*	–	CC	–	Primarily nests underground in open grassland and scrub habitats from the California coast east to the Sierra Cascade and south to Mexico. Survey Period: March-September	Potential to Occur. Suitable habitat is present on site via the annual grassland. No CNDDB records within 5 miles.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	–	–	Vernal pools/wetlands. Survey Period: November–April when surface water is present.	Absent. No suitable habitat present on site. One CNDDB occurrence within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
Common Name ***(Scientific Name)***	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**California ESA/ NPPA**	**Other**		
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	–	–	Found exclusively on its host plant, the elderberry shrub, in riparian and oak woodland/oak savannah habitats of California's Central Valley from Shasta to Madera counties.	Absent. No suitable habitat present on site. No CNDDB records within 5 miles.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	–	–	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	Absent. No suitable habitat present on site. Two CNDDB occurrences within 5 miles.
Fish					
Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss irideus*)	FT	–	–	Fast-flowing, well-oxygenated rivers and streams below dams in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Chinook salmon (Central Valley spring-run ESU) (*Oncorhynchus tshawytscha*)	FT	CT	–	Undammed rivers, streams, creeks in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Chinook salmon (Sacramento River winter-run ESU) *(Oncorhynchus tshawytscha)*	FE	CE	–	Undammed reaches of the mainstem and tributaries to the Sacramento River downstream of Shasta Reservoir. Survey Period: N/A	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species

Common Name ***(Scientific Name)***	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**California ESA/ NPPA**	**Other**		
Amphibians					
California red-legged frog (*Rana draytonii*)	FT	–	SSC	Lowlands and foothills of the northern and southern Coast Ranges and Sierra Nevada. Found in deep standing or flowing water with dense shrubby or emergent riparian vegetation; requires 11-20 weeks of permanent water for larval development. Adults require aestivation habitat to endure summer dry down. Survey Period: January – Sept.	Absent. No suitable habitat present on site. No CNDDB records within 5 miles.
Foothill yellow-legged frog East/ Southern Sierra Clade (*Rana boylii*)	FE	CE	SSC	Partly shaded shallow streams and riffles in variety of habitats. Needs cobble-sized substrate for egg-laying and at least 15 weeks of permanent water to attain metamorphosis. Can be active all year in warmer locations; become inactive or hibernate in colder climates. Sierra Nevada from South Fork American River to Tehachapi Mountains. Survey Period: May–October.	Absent. No suitable habitat present on site. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
Common Name *(Scientific Name)*	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**California ESA/ NPPA**	**Other**		
Western spadefoot (*Spea hammondii*)	–	–	SSC	California endemic species of vernal pools, swales, and seasonal wetlands in grassland, scrub and woodland habitats throughout the Central Valley and South Coast Ranges. Prefers open areas with sandy or gravelly soils. Survey Period: Winter-Spring.	Absent. No suitable habitat present on site. No CNDDB records within 5 miles.
California tiger salamander (Central California DPS) (*Ambystoma californiense*)	FT	CT	WL	Breeds in vernal pools and seasonal wetlands in grassland or oak woodland habitats; adults are terrestrial using underground refuges such as ground squirrel or gopher burrows. Central Valley and Inner Coast Range. Survey Period: Winter-Spring.	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Reptiles					
Northwestern pond turtle (*Actinemys marmorata*)	–	–	SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches. Survey Period: April-September	Absent. No suitable habitat present onsite. One CNDDB occurrences within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name *(Scientific Name)*	**ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Blainville's ("Coast") horned lizard (*Phrynosoma blainvillii*)	–	–	SSC	Formerly a wide-spread horned lizard found in a wide variety of habitats, often in lower elevation areas with sandy washes and scattered low bushes. Also occurs in Sierra Nevada foothills. Requires open areas for basking, but with bushes or grass clumps for cover, patches of loamy soil or sand for burrowing and an abundance of ants (Stebbins and McGinnis 2012). In the northern Sacramento area, this species appears restricted to the foothills between 1000 to 3000 feet from Cameron Park (El Dorado County) north and west to Grass Valley and Nevada City. Survey Period: April-October	Low potential. The annual grassland onsite represents marginal habitat. One CNDDB occurrence within 5 miles.
Giant garter snake (*Thamnophis gigas*)	FT	CT	–	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range. Survey Period: April-October	Absent. No suitable habitat present onsite. No CNDDB occurrences within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name *(Scientific Name)*	**ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Birds					
Western grebe *(Aechmophorus occidentalis)*	–	–	BCC	Winters on salt or brackish bays, estuaries, sheltered sea coasts, freshwater lakes, and rivers. Nests on freshwater lakes and marshes with open water bordered by emergent vegetation. Nesting: June-August	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
California black rail (*Laterallus jamaicensis coturniculus*)	–	CT	CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties). Nesting: March-September	Absent. No suitable habitat present onsite. One CNDDB occurrence within 5 miles.
Marbled godwit (*Limosa fedoa*)	–	–	BCC	Nests in Montana, North and South Dakota, Minnesota, into Canada. Winter range along Pacific Coast from British Columbia south to Central America, with small numbers wintering in interior California. Wintering habitat includes coastal mudflats, meadows, estuaries, sandy beaches, sandflats, and salt ponds. Migrant/Wintering in CA: August-April	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
Common Name ***(Scientific Name)***	**Status** **ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
California gull (nesting colony) *(Larus californicus)*	–	–	BCC, CDFW WL	Nesting occurs in the Great Basin, Great Plains, Mono Lake, and south San Francisco Bay. Breeding colonies located on islands on natural lakes, rivers, or reservoirs. Winters along Pacific Coast from southern British Columbia south to Baja California and Mexico. In California, winters along coast and inland (Central Valley, Salton Sea). Nesting: April-August	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Double-crested cormorant *(Nannopterum auritum)*	–	–	CDFW WL	Nests near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines and typically forages in shallow water. Non-nesters are found in many coastal and inland waters. Nesting: April-August	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
White-tailed kite (*Elanus leucurus*)	–	–	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats. Nesting: March-August	Present. Observed foraging on site. Low potential for nesting in trees on fringes of site. Three CNDDB occurrences within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name ***(Scientific Name)***	**ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Golden eagle (*Aquila chrysaetos*)	–	–	CFP, CDFW WL	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/ savannah, and chaparral. Nesting occurs on cliff ledges, river banks, trees, and human-made structures (e.g., windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter. Nesting: February-August Wintering in Central Valley: October-February	Absent. Low potential for foraging. No suitable nesting habitat present onsite. Two CNDDB occurrences within 5 miles. No CNDDB records within 5 miles.
Cooper's hawk *(Accipiter cooperii)*	–	–	CDFW WL	Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes. Rosenfield et al. 2020 Nesting: March-July	Low Potential to Occur. Trees present nearby in adjacent urban landscape that could act as nesting habitat. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species

Common Name ***(Scientific Name)***	**Status** **ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Bald eagle (*Haliaeetus leucocephalus*)	De-listed	CE	CFP	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands. Nesting: February-September Wintering: October-March	Absent. Low potential for foraging. No suitable nesting habitat present onsite. One CNDDB occurrence within 5 miles.
Swainson's hawk (*Buteo swainsoni*)	–	CT	–	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures. Nesting: March-August	Low Potential to Occur. Potential for foraging in grassland habitat on site. No suitable nesting habitat. No CNDDB records within 5 miles.
Ferruginous hawk (*Buteo regalis*)	–	–	BCC, CDFW WL	Rarely breeds in California (Lassen County); winter range includes grassland and shrubsteppe habitats from Northern California (except northeast and northwest corners) south to Mexico and east to Oklahoma, Nebraska, and Texas. Wintering: September-March	Absent. Low potential for foraging. No suitable nesting habitat present onsite. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name *(Scientific Name)*	**ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Burrowing owl *(Athene cunicularia)*	–	–	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds. Nesting: February-August	Low Potential to Occur. Potential for suitable burrow habitat. Two CNDDB occurrences within 5 miles. No CNDDB records within 5 miles.
Nuttall's woodpecker *(Dryobates nuttallii)*	–	–	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands. Nesting: April-July	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Merlin *(Falco columbarius)*	–	–	CDFW WL	Breeds in Oregon, Washington north into Canada. Winters in southern Canada to South America, including California. Breeds near forest openings, fragmented woodlots, and riparian areas. Wintering habitat includes wide variety, open forests, grasslands, tidal flats, plains, and urban settings. Wintering in the Central Valley: September-April.	Absent. Does not breed in the region and may rarely foraging in adjacent annual grassland. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
Common Name *(Scientific Name)*	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**California ESA/ NPPA**	**Other**		
Olive-sided flycatcher *(Contopus cooperi)*	–	–	SSC, BCC	Nests in montane and northern coniferous forests, in forest openings, forest edges, semiopen forest stands. In California, nests in coastal forests, Cascade and Sierra Nevada region. Winters in Central to South America. Nesting: May-August	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Yellow-billed magpie (*Pica nuttallii*)	–	–	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings. Nesting: April-June	Low Potential to Occur. Marginal nesting habitat present in developed business park/urban setting. No CNDDB records within 5 miles.
Oak titmouse (*Baeolophus inornatus*)	–	–	BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree). Nesting: March-July	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
Common Name *(Scientific Name)*	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**California ESA/ NPPA**	**Other**		
Bank swallow (*Riparia riparia*)	–	CT	–	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California. Nesting: May-July	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Cassin's finch (*Haemorhous cassinii*)	–	–	BCC	Breeds throughout the conifer belts of North America's western interior mountains, from central British Columbia to northern New Mexico and Arizona; mostly between 3,000'-10,000' elevation. Often in mature forests of pine, spruce and aspen; especially open, dry pine forests. Some will breed in open sagebrush shrubland with scattered western junipers. Nesting: May-July	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name *(Scientific Name)*	**ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Lawrence's goldfinch (*Spinus lawrencei*)	–	–	BCC	Breeds in Sierra Nevada and inner Coast Range foothills surrounding the Central Valley and the southern Coast Range to Santa Barbara County east through southern California to the Mojave Desert and Colorado Desert into the Peninsular Range. Nests in arid and open woodlands with chaparral or other brushy areas, tall annual weed fields, and a water source (e.g., small stream, pond, lake), and to a lesser extent riparian woodland, coastal scrub, evergreen forests, pinyon-juniper woodland, planted conifers, and ranches or rural residences near weedy fields and water. Nesting: March-September	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Grasshopper sparrow (*Ammodramus savannarum*)	–	–	BCC, SSC	In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large tracts of habitat than small fragments; removal of grass cover by grazing often detrimental. Nesting: May-August	Absent. Small patch size and close proximity to developed business park eliminates potential for breeding onsite. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	California ESA/ NPPA	Other		
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	–	CE	BCC	Resident coastally from Point Conception south into Baja California; coastal salt marsh. Year-round resident; nests March-August	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Tricolored blackbird (*Agelaius tricolor*)	–	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields. Nesting: March-August	Potential. There is no suitable nesting habitat present, but the annual grassland represents potential foraging habitat. Seven CNDDB occurrences within 5 miles.
Bullock's oriole (*Icterus bullockii*)	–	–	BCC	Breeding habitat includes riparian and oak woodlands. Nesting: March-July	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	–	–	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County. Nesting: March-July	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name ***(Scientific Name)***	**ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Mammals					
Pallid bat *(Antrozous pallidus)*	–	–	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human occupied as well as vacant buildings (WBWG 2023). Survey Period: April-September	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
Fisher- Northern California/Southern Oregon DPS *(Pekania pennanti)*	–	–	SSC	Coastal northern California and includes reintroduced populations in the northern Sierra Nevada and southern Oregon Cascades. Any season	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.
American badger *(Taxidea taxus)*	–	–	SSC	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Survey Period: Any season	Absent. No suitable habitat present onsite. No CNDDB records within 5 miles.

Status Codes:

ESA	Federal Endangered Species Act
FE	ESA listed, Endangered
FT	ESA listed, Threatened
BCC	USFWS Bird of Conservation Concern (USFWS 2021)
CE	California ESA- or NPPA listed, Endangered
CT	California ESA- or NPPA-listed, Threatened
CR	California ESA- or NPPA-listed, Rare
CC	Candidate for CESA listing as Endangered or Threatened
CFP	California Fish and Game Code Fully Protected Species (Sections 3511-birds, 4700-mammals, 5050-reptiles/amphibians)
SSC	CDFW Species of Special Concern
CDFW WL	CDFW Watch List
1B	CRPR/Rare or Endangered in California and elsewhere

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name ***(Scientific Name)***	**ESA**	**California ESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**

0.1 Threat Rank/Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

0.2 Threat Rank/Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)

Delisted Formally Delisted

Note: CNDDB = California Natural Diversity Database; DPS = Distinct Population Segment; ESU = Evolutionarily Significant Unit; km = kilometer; N/A = Not Applicable; USFWS = U.S. Fish and Wildlife Service

4.6.1 Crotch's Bumble Bee

The Crotch's bumble bee (*Bombus crotchii*) is a candidate for listing as endangered under the California ESA. The historic range of the Crotch's bumble bee extends from coastal areas east to the edges of the desert in central California south to Baja California del Norte, Mexico, excluding mountainous areas (Thorpe et al. 1983, Williams et al. 2014). The species was historically common throughout the southern two-thirds of its range but is now largely absent from much of that area and is nearly extirpated from the center of its historic range, the Central Valley (Hatfield et al. 2014).

The Crotch's bumble bee inhabits open grassland and scrub habitats (Williams et al. 2014). The species visits a wide variety of flowering plants, although it's very short tongue makes it best suited to forage at open flowers with short corollas (Xerces Society 2018). Plant families most commonly associated with Crotch's bumble bee include Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae (Xerces Society 2018). The species primarily nests underground (Williams et al. 2014). Little is known about overwintering sites for the species, but bumble bees generally overwinter in soft, disturbed soils or under leaf litter or other debris (Goulson 2010, Williams et al. 2014). The flight period for Crotch's bumble bee queens in California is from late February to late October, peaking in early April with a second pulse in July (Thorp et al. 1983). The flight period for workers and males is California is from late March through September with peak abundance in early July (Thorp et al. 1983).

There are no CNDDB occurrences of this species within 5 miles of BSA (CDFW 2023a). The annual grassland onsite represents potentially suitable habitat for crotch bumble bee. Crotch's bumble bee has potential to occur onsite.

4.6.2 Blainville's Horned Lizard

Blainville's horned lizard (*Phrynosoma blainvillii*) is considered a CDFW SSC. This species is easily identifiable from many other lizards in California. Like all horned lizards, it is flattened dorsoventrally and possesses enlarged scales along the back of the head that resemble horns. This species can be distinguished from the desert horned lizard, a species with which it shares only a narrow portion of its range, by a double row of pointed fringe scales This diurnal species can occur within a variety of habitats including scrubland, annual grassland, valley-foothill woodlands and coniferous forests, though it is most common along lowland desert sandy washes and chaparral (Stebbins 2003). In the Central Valley, the species ranges from southern Tehama County southward. In the Sierra Nevada it occurs from Butte County south to Tulare County, and in the Coast Ranges it occurs from Sonoma County south into Baja California (CDFG 1988). It occurs from sea level to 8,000 feet AMSL and an isolated population occurs in Siskiyou County (Stebbins 2003).

There is one CNDDB occurrence of this species within 5 miles of BSA (CDFW 2023a). The annual grassland onsite represents marginally suitable habitat for Blainville's horned lizard. Blainville's horned lizard has low potential to occur onsite.

4.6.3 White-Tailed Kite

White-tailed kite is not listed pursuant to either the California or federal ESAs; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast, as well as all areas up to the Sierra Nevada foothills and southeastern deserts (Dunk 2020). In Northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (Dunk 2020).

There are three CNDDB occurrences of this species within 5 miles of BSA (CDFW 2023a). The annual grassland onsite represents suitable foraging habitat and the trees in the adjacent developed areas represent marginally suitable nesting habitat. A white-tailed kite was observed foraging onsite during the reconnaissance site visit.

4.6.4 Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is not listed pursuant to either the California or federal ESAs. However, it is a CDFW WL species. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. Cooper's hawks nest throughout California from Siskiyou County to San Diego County and includes the Central Valley (Rosenfield et al. 2020). Breeding occurs from March through July, with a peak from May through July.

There are no CNDDB occurrences of this species within 5 miles of BSA (CDFW 2023a). The annual grassland onsite represents suitable foraging habitat and the trees in the adjacent developed areas represent marginally suitable nesting habitat. Cooper's hawk has low potential to occur onsite.

4.6.5 Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and are protected pursuant to the California ESA. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2020). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest in tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole, California ground squirrel (*Spermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanoplus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, discing, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

There are no CNDDB occurrences of this species within 5 miles of BSA (CDFW 2023a). The annual grassland onsite represents suitable foraging habitat but there is no suitable nesting habitat onsite or in the immediate vicinity. Swainson's hawk has low potential to occur onsite.

4.6.6 Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and an SSC by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Otospermophilus beecheyi*) but may also use manufactured structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (CDFG 2012). The breeding season typically occurs between February 1 and August 31 (CDFG 2012).

There are two CNDDB occurrences of this species within 5 miles of BSA (CDFW 2023a). The annual grassland onsite represents potentially suitable burrow habitat but none were observed during the initial site reconnaissance. Burrowing owl has low potential to occur onsite.

4.6.7 Yellow-Billed Magpie

The yellow-billed magpie (*Pica nuttalli*) is not listed pursuant to either the California or federal ESAs but is considered a USFWS BCC. This endemic species is a yearlong resident of the Central Valley and Coast Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures or cropland. Nest building begins in late January to mid-February, which may take up to 6 to 8 weeks to complete, with eggs laid from April through May, and fledging from May through June (Koenig and Reynolds 2020). The young leave the nest about 30 days after hatching (Koenig and Reynolds 2020). Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004-2006 (Koenig and Reynolds 2020),

There are no CNDDB occurrences of this species within 5 miles of BSA (CDFW 2023a). The trees in the developed areas adjacent to the BSA represent marginally suitable nesting habitat. Yellow-billed magpie has low potential to occur onsite.

4.6.8 Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) was granted emergency listing for protection under the California ESA in December 2014 but the listing status was not renewed in June 2015. After an extensive status review, the California Fish and Game Commission listed tricolored blackbirds as a threatened species in 2018. In addition, it is currently considered a USFWS BCC and a CDFW SSC. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California (Beedy et al. 2020). Tricolored blackbirds nest in colonies that can range from several pairs to several thousand pairs, depending on prey availability, the presence of predators, or level of human disturbance. Tricolored blackbirds nesting habitat includes emergent marsh, riparian woodland/scrub, blackberry thickets, densely vegetated agricultural and idle fields (e.g., wheat, triticale, safflower, fava bean fields, thistle, mustard, cane, and fiddleneck), usually with some nearby standing water or ground saturation (Beedy et al. 2020). They feed mainly on grasshoppers during the breeding season, but may also forage upon a variety of other insects, grains, and seeds in open grasslands, wetlands, feedlots, dairies, and agricultural fields (Beedy et al. 2020). The nesting season is generally from March through August.

There are seven CNDDB occurrences of this species within 5 miles of BSA (CDFW 2023a). The annual grassland onsite represents potentially suitable foraging habitat, but there is no suitable breeding habitat onsite. Tricolored blackbird has low potential to occur onsite.

4.7 Critical Habitat or Essential Fish Habitat

There is no designated critical habitat mapped within the Study Area (USFWS 2023b).

Based on the literature review, Essential Fish Habitat for Chinook salmon may be present in the "Folsom, SE, California" 7.5-minute quadrangle (NOAA 2016). However, there is no habitat for special-status fish within the Study Area.

4.8 Wildlife Movement Corridors and Nursery Sites

The BSA is located adjacent to existing school grounds and a business park. The BSA does not have the potential to serve as a wildlife movement corridor for any wildlife species due to the close proximity to developed lands. There are no unique habitat features present such as wetlands, other aquatic habitats, or woodlands. The BSA is not located in an area designated by the County as an *Important Biological Corridor* or *Priority Conservation Area* (El Dorado County 2017).

The BSA is located at the outer edge of an area identified by CDFW's California Essential Habitat Connectivity (CEHC) mapping. It is noteworthy that some areas in the vicinity of the BSA that were mapped in CEHC have been developed since this dataset was published in 2014. These data could be outdated.

Biologists observed no suitable habitat for nursery sites (e.g., deer fawning grounds, waterbird rookeries) during the site reconnaissance visit.

4.9 Protected Trees/Oak Woodlands

There are no trees or oak woodlands present in the BSA.

5.0 IMPACT ASSESSMENT AND RECOMMENDATIONS

This section specifically addresses questions raised by the Biological Resources section of the Environmental Checklist Form in Appendix G of the CEQA Guidelines.

5.1 CEQA Checklist Criteria IV(a) – Special-Status Species

Would the Project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No special-status species are known to occur within the BSA; however, surveys have not been conducted and the BSA supports potential or marginal habitat for one special-status invertebrate (i.e., Crotch's bumble bee), one reptile (i.e., Blainville's horned lizard), and six birds (i.e., white-tailed kite, Cooper's hawk, Swainson's hawk, burrowing owl, yellow-billed magpie, and tricolored blackbird).

Project development may permanently remove or alter a minimal amount of habitat for special-status plants, mostly marginal habitat for the Blainville's horned lizard, marginal nesting and foraging habitat for special-status birds, and they could be directly or indirectly impacted by the Project in the low chance they are onsite.

Implementation of recommended measures would avoid or minimize potential impacts to special-status species from the Project. These measures would also avoid or minimize impacts to MBTA-protected birds and nests.

5.1.1 Crotch's Bumble Bee

Project development could result in impacts to individual crotch bumble bees and their nests. To avoid or minimize potential impacts to crotch bumble bee, the following measures are recommended:

- If the Crotch's bumble bee is no longer a Candidate or formally Listed species under the California ESA at the time ground-disturbing activities occur, then no additional protection measures are proposed for the species.
- If the Crotch's bumble bee is legally protected under the California ESA as a Candidate or Listed species at the time ground-disturbing activities are scheduled to begin, preconstruction surveys shall be conducted in accordance with CDFW's Survey Considerations for California ESA Candidate Bumble Bee Species (CDFW 2023a) the season immediately prior to Project implementation. A minimum of three Crotch's bumble bee preconstruction surveys shall be conducted at 2- to 4-week intervals during the colony active period (April through August) when Crotch's bumble bees are most likely to be detected. Non-lethal surveys shall be completed by a biologist who either holds a Memorandum of Understanding to capture and handle Crotch's

bumble bee (if netting and chilling protocol is to be utilized), or by a CDFW-approved biologist who is experienced in identifying native bumble bee species (if surveys are restricted to visual surveys that will provide high-resolution photo documentation for species verification). The surveyor shall walk through all areas of suitable habitat focusing on areas with floral resources. Surveys shall be completed at a minimum of one person-hour of searching per 3 acres of suitable habitat during suitable weather conditions (sustained winds less than 8 miles per hour, mostly sunny to full sun, temperatures between 65° and 90°F) at an appropriate time of day for detection (at least 1 hour after sunrise and at least 2 hours before sunset, though ideally between 9 a.m. and 1 p.m.).

- If Crotch's bumble bees are detected, CDFW shall be notified by the designated biologist as further coordination may be required to avoid or mitigate certain impacts. At a minimum, two nesting surveys shall be conducted with focus on detecting active nesting colonies within 1 week and the final survey within 24-hours prior to ground-disturbing activities that are scheduled to occur during the flight season (February through October). If an active Crotch's bumble bee nest is detected, an appropriate no-disturbance buffer zone (including foraging resources and flight corridors essential for supporting the colony) shall be established around the nest to reduce the risk of disturbance or accidental take and the designated biologist shall coordinate with CDFW to determine if an Incidental Take Permit under Section 2081 of the California ESA will be required. Nest avoidance buffers may be removed at the completion of the flight season and/or once the qualified biologist deems the nesting colony is no longer active. If no nests are found but the species is present, a full-time qualified biological monitor shall be present during vegetation or ground-disturbing activities that are scheduled to occur during the queen flight period (February through March), colony active period (March through September), and/or gyne flight period (September through October). Because bumble bees move nest sites each year, two preconstruction nesting surveys shall be required during each subsequent year of construction, regardless of the previous year's findings, whenever vegetation and ground-disturbing activities are scheduled to occur during the flight season if nesting and foraging habitat is still present or has re-established.

5.1.2 Blainville's Horned Lizard

Project development could result in impacts to individual Blainville's horned lizard. To avoid or minimize potential impacts to Blainville's horned lizard, the following measures are recommended:

- A qualified biologist shall conduct a preconstruction survey for Blainville's horned lizard within all suitable habitat in the Project work area 72 hours prior to the start of ground- or vegetation-disturbing activities. Any individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the Project work area where they were found.

5.1.3 Special-Status Birds

Special-status birds that could occur onsite include potential breeding species or species with low potential to occur onsite due to an absence of breeding habitat or does not nest in the region. Swainson's hawk and tricolored blackbird are not expected to nest onsite or in the vicinity due to an absence of suitable nesting habitat. Project construction and development are not likely to directly impact these species, as they can easily escape to adjacent undeveloped lands for foraging and loafing. No avoidance and minimization measures pertaining to potential impacts to these special-status birds are recommended at this time.

A number of other potentially occurring special-status birds could nest onsite or in close proximity, including white-tailed kite, Cooper's hawk, burrowing owl, and yellow-billed magpie. Project development and construction activities could result in the direct loss of individuals and occupied nests (e.g., eggs, nestlings) or cause nest abandonment. The following measures are recommended to avoid and minimize potential impacts to special-status birds:

5.1.3.1 Special-Status and Common Raptors

The following measures are recommended to avoid and minimize potential impacts to potentially nesting species-status and common raptors:

- If construction begins during February 1 to September 30, a qualified biologist shall conduct a preconstruction survey for raptor nests onsite and a 500-foot buffer around the Project within 14 days prior to the start of ground- or vegetation-disturbing activities. Any active nests are observed shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.

5.1.3.2 Other Special-Status and MBTA-Protected Birds (Non-Raptors)

- If construction begins during February 1 to September 30, a qualified biologist shall conduct a preconstruction nesting bird survey onsite and a 100-foot buffer around the Project within 14 days prior to the start of ground- or vegetation-disturbing activities. Any active nests observed, shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.

5.2 CEQA Checklist Criteria IV(b) – Sensitive Natural Communities

Would the Project:

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

There is no riparian habitat or sensitive natural communities present in the BSA and none will be affected by Project construction. No avoidance or minimization measures are required.

5.3 CEQA Checklist Criteria IV(c) – Aquatic Resources

Would the Project:

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

There are no aquatic resources, including wetlands, present within the BSA and none will be affected by Project construction. No avoidance or minimization measures are required.

5.4 CEQA Checklist Criteria IV(d) – Movement Corridors and Nursery Sites

Would the Project:

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

There are no migratory corridors or wildlife nursery sites present within the BSA and none will be affected by Project construction. No avoidance or minimization measures are required.

5.5 CEQA Checklist Criteria IV(e) – Conflicts with Local Policies or Ordinances

Would the Project:

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

There are no trees present in the BSA and Project construction will be in conflict with any local policies or ordinances protecting biological resources.

5.6 CEQA Checklist Criteria IV(f) – Conflicts with Conservation Plans

Would the Project:

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Project development will not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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LIST OF APPENDICES

APPENDIX A

Results of Database Queries

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Latrobe (3812058) OR Irish Hill (3812048) OR Shingle Springs (3812068) OR Carbondale (3812141) OR Folsom SE (3812151) OR Folsom (3812162) OR Clarksville (3812161) OR Sloughhouse (3812142) OR Buffalo Creek (3812152))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01181	***Ambystoma californiense pop. 1*** California tiger salamander - central California DPS	Threatened	Threatened	G2G3T3	S3	WL
AAABF02020	***Spea hammondii*** western spadefoot	None	None	G2G3	S3S4	SSC
AAABH01022	***Rana draytonii*** California red-legged frog	Threatened	None	G2G3	S2S3	SSC
AAABH01055	***Rana boylii pop. 5*** foothill yellow-legged frog - south Sierra DPS	Proposed Endangered	Endangered	G3T2	S2	
ABNFD01020	***Nannopterum auritum*** double-crested cormorant	None	None	G5	S4	WL
ABNGA04010	***Ardea herodias*** great blue heron	None	None	G5	S4	
ABNGA04040	***Ardea alba*** great egret	None	None	G5	S4	
ABNKC06010	***Elanus leucurus*** white-tailed kite	None	None	G5	S3S4	FP
ABNKC10010	***Haliaeetus leucocephalus*** bald eagle	Delisted	Endangered	G5	S3	FP
ABNKC12040	***Accipiter cooperii*** Cooper's hawk	None	None	G5	S4	WL
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S4	
ABNKC19120	***Buteo regalis*** ferruginous hawk	None	None	G4	S3S4	WL
ABNKC22010	***Aquila chrysaetos*** golden eagle	None	None	G5	S3	FP
ABNKD06030	***Falco columbarius*** merlin	None	None	G5	S3S4	WL
ABNME03041	***Laterallus jamaicensis coturniculus*** California black rail	None	Threatened	G3T1	S2	FP
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S2	SSC
ABPAU08010	***Riparia riparia*** bank swallow	None	Threatened	G5	S3	
ABPBXA0020	***Ammodramus savannarum*** grasshopper sparrow	None	None	G5	S3	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	Threatened	G1G2	S2	SSC
AFCHA0209K	***Oncorhynchus mykiss irideus pop. 11*** steelhead - Central Valley DPS	Threatened	None	G5T2Q	S2	
AMACC02010	***Lasionycteris noctivagans*** silver-haired bat	None	None	G3G4	S3S4	
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G4	S3	SSC
AMAFJ01010	***Erethizon dorsatum*** North American porcupine	None	None	G5	S3	
AMAJF01020	***Pekania pennanti*** Fisher	None	None	G5	S2S3	SSC
AMAJF04010	***Taxidea taxus*** American badger	None	None	G5	S3	SSC
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
ARACF12100	***Phrynosoma blainvillii*** coast horned lizard	None	None	G4	S4	SSC
ARADB36150	***Thamnophis gigas*** giant gartersnake	Threatened	Threatened	G2	S2	
ICBRA03030	***Branchinecta lynchi*** vernal pool fairy shrimp	Threatened	None	G3	S3	
ICBRA03150	***Branchinecta mesovallensis*** midvalley fairy shrimp	None	None	G2	S2S3	
ICBRA06010	***Linderiella occidentalis*** California linderiella	None	None	G2G3	S2S3	
ICBRA10010	***Lepidurus packardi*** vernal pool tadpole shrimp	Endangered	None	G3	S3	
ICBRA23010	***Dumontia oregonensis*** hairy water flea	None	None	G1G3	S1	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T3	S3	
IICOL5V010	***Hydrochara rickseckeri*** Ricksecker's water scavenger beetle	None	None	G2?	S2?	
IIHYM24260	***Bombus pensylvanicus*** American bumble bee	None	None	G3G4	S2	
IIHYM24480	***Bombus crotchii*** Crotch bumble bee	None	Candidate Endangered	G2	S2	
IIHYM35030	***Andrena blennospermatis*** Blennosperma vernal pool andrenid bee	None	None	G2	S1	

Record Count: 38

[CNPS Rare Plant Inventory](https://rareplants.cnps.org)

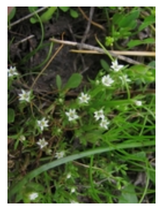
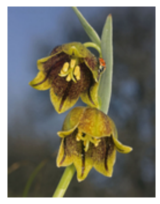
California Native Plant Society

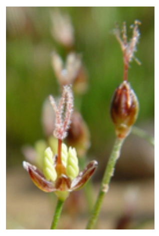
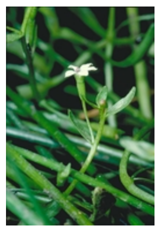
Search Results

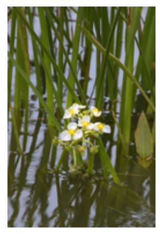
36 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3812151:3812048:3812058:3812068:3812141:3812161:3812162:3812142:3812152**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Allium jepsonii	Jepson's onion	Alliaceae	perennial bulbiferous herb	Apr-Aug	None	None	G2	S2	1B.2	Yes	1994-01-01	 © 2019 Steven Perry
Arctostaphylos myrtifolia	Ione manzanita	Ericaceae	perennial evergreen shrub	Nov-Mar	FT	None	G1	S1	1B.2	Yes	1974-01-01	 © 2006 Steve Matson
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	None	None	G5T3	S3	4.2	Yes	2019-01-07	 © 2011 Steven Perry
Bryum chryseum	brassy bryum	Bryaceae	moss		None	None	G5	S3	4.3		2014-05-05	No Photo Available
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2		1994-01-01	No Photo Available
Calystegia stebbinsii	Stebbins' morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jul	FE	CE	G1	S1	1B.1	Yes	1980-01-01	No Photo Available
Carex xerophila	chaparral sedge	Cyperaceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	2016-06-06	 © 2023 Steven Perry
Ceanothus fresnensis	Fresno ceanothus	Rhamnaceae	perennial evergreen shrub	(Apr)May-Jul	None	None	G4	S4	4.3	Yes	1980-01-01	No Photo Available
Ceanothus roderickii	Pine Hill ceanothus	Rhamnaceae	perennial evergreen shrub	Apr-Jun	FE	CR	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G3	S3	1B.2	Yes	1974-01-01	No Photo Available
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Onagraceae	annual herb	(Mar)May-Jul	None	None	G4G5T4	S4	4.2	Yes	2001-01-01	No Photo Available

Crocanthemum suffrutescens	Bisbee Peak rush-rose	Cistaceae	perennial evergreen shrub	Apr-Aug	None	None	G2?Q	S2?	3.2	Yes	1974-01-01	No Photo Available
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2		1980-01-01	 © 2013 Aaron Arthur
Eriogonum apricum var. apricum	Ione buckwheat	Polygonaceae	perennial herb	Jul-Oct	FE	CE	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Eriogonum apricum var. prostratum	Irish Hill buckwheat	Polygonaceae	perennial herb	Jun-Jul	FE	CE	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Eriogonum tripodum	tripod buckwheat	Polygonaceae	perennial deciduous shrub	May-Jul	None	None	G4	S4	4.2	Yes	1974-01-01	 ©2008 Steven Perry
Eriophyllum jepsonii	Jepson's woolly sunflower	Asteraceae	perennial herb	Apr-Jun	None	None	G3	S3	4.3	Yes	1974-01-01	No Photo Available
Eryngium pinnatisectum	Tuolumne button-celery	Apiaceae	annual/perennial herb	May-Aug	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2007 Robert E. Preston, Ph.D.
Fremontodendron decumbens	Pine Hill flannelbush	Malvaceae	perennial evergreen shrub	Apr-Jul	FE	CR	G1	S1	1B.2	Yes	1974-01-01	No Photo Available
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1980-01-01	 © 2016 Aaron Schusteff
Galium californicum ssp. sierrae	El Dorado bedstraw	Rubiaceae	perennial herb	May-Jun	FE	CR	G5T1	S1	1B.2	Yes	1974-01-01	 © 2019 John Doyen
Githopsis pulchella ssp. serpentinicola	serpentine bluecup	Campanulaceae	annual herb	May-Jun	None	None	G4T3	S3	4.3	Yes	2001-01-01	 © 2019 Barry Breckling

Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	None	CE	G2	S2	1B.2		1974-01-01	 ©2004 Carol W. Witham
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2017 John Doyen
Horkelia parryi	Parry's horkelia	Rosaceae	perennial herb	Apr-Sep	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2009 Barry Breckling
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May(Jun)	None	None	G3	S3	4.2	Yes	2006-10-12	 © 2014 Aaron Schusteff
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	None	None	G2T1	S1	1B.2	Yes	1984-01-01	 © 2004 Carol W. Witham
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1	Yes	1974-01-01	 ©2000 John Game
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3		1974-01-01	 ©2021 Scot Loring
Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	annual herb	Apr-May	None	None	G2T2	S2	1B.1	Yes	1994-01-01	 © 2020 Leigh Johnson
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	FT	CE	G2	S2	1B.1	Yes	1974-01-01	 © 2013 Justy Leppert

Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	FE	CE	G1	S1	1B.1	Yes	1974-01-01	 © Rick York and CNPS
Packera layneae	Layne's ragwort	Asteraceae	perennial herb	Apr-Aug	FT	CR	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01	 ©2013 Debra L. Cook
Trichostema rubisepalum	Hernandez bluecurls	Lamiaceae	annual herb	Jun-Aug	None	None	G4	S4	4.3	Yes	1974-01-01	No Photo Available
Wyethia reticulata	El Dorado County mule ears	Asteraceae	perennial herb	Apr-Aug	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available

Showing 1 to 36 of 36 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 22 September 2023].

IPaC **U.S. Fish & Wildlife Service**

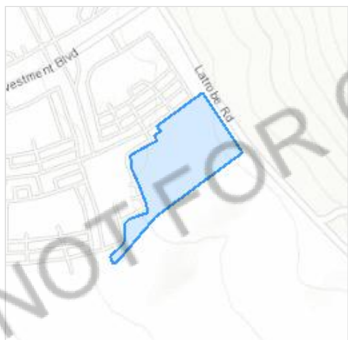
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

El Dorado County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened
Foothill Yellow-legged Frog *Rana boylii* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5133	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

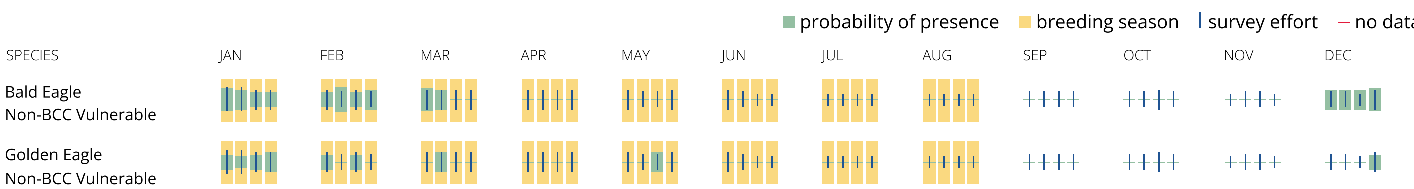
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Cassin's Finch Carpodacus cassinii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

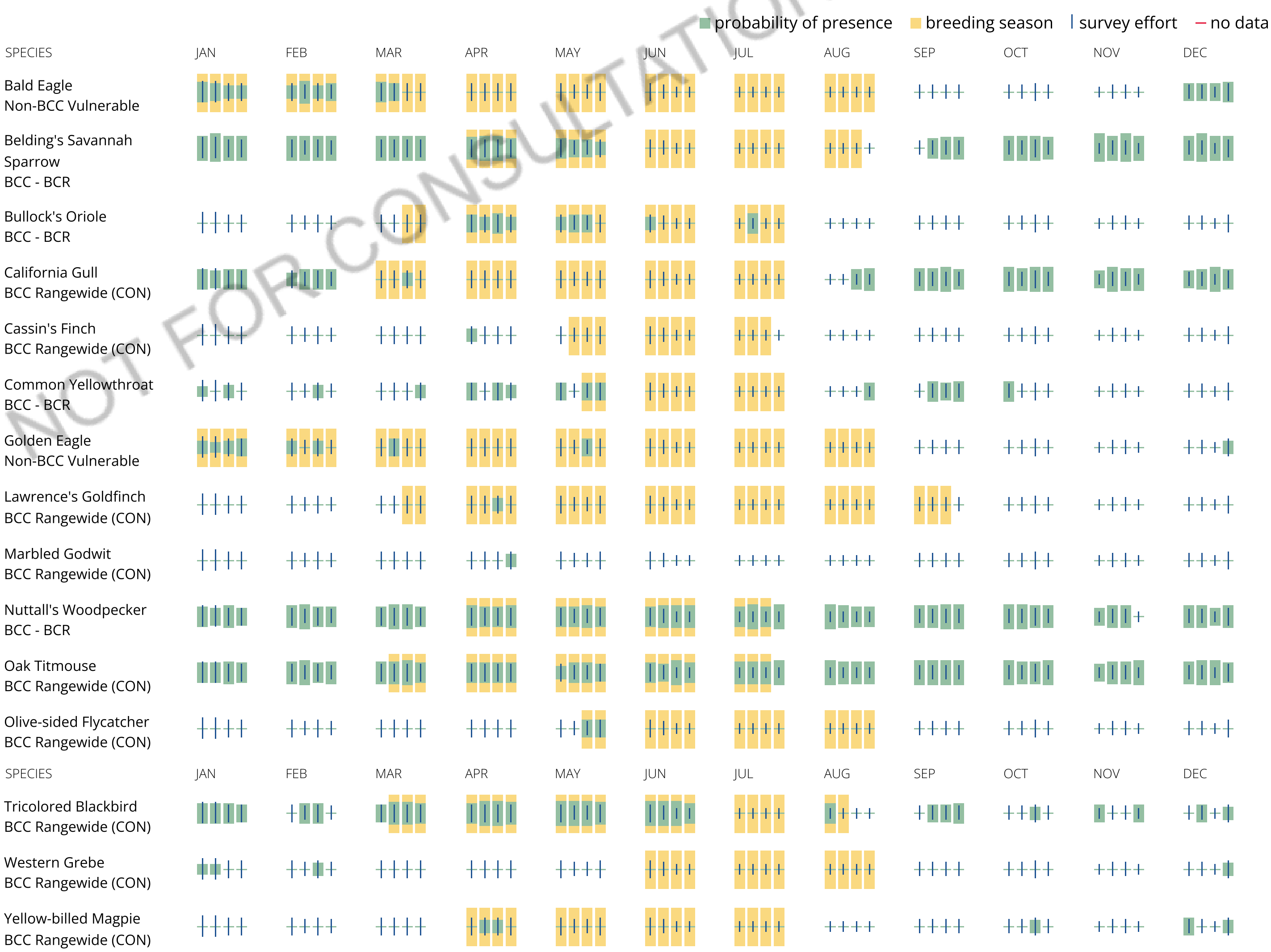
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Quad Name **Folsom SE**
Quad Number **38121-E1**

1.0 ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

2.0 ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

3.0 ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

4.0 ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

5.0 ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

6.0 ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

7.0 ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

8.0 Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

9.0 MMPA Species (See list at left)
10.0 ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

APPENDIX B

Representative Photographs

Photo 1. Annual Grassland and Adjacent Business Park

Photo 2. Annual Grassland

Photo 3. Annual Grassland Along Latrobe Road

Photo 4. Landscaping Along Developed Boundary

APPENDIX C

Plant Species Observed

Common Name	Scientific Name
Sweetgum (cultivated)	*Liquidambar styraciflua**
Coyote bush	*Baccharis pilularis*
Italian thistle	*Carduus pycnocephalus**
Yellow star-thistle	*Centaurea solstitialis**
Fitch's spikeweed	*Centromadia fitchii*
Narrow tarplant	*Holocarpha virgata*
Prickly lettuce	*Lactuca serriola**
Spanish clover	*Acmispon americanus*
Rose clover	*Trifolium hirtum**
Hairy vetch	*Vicia hirsuta**
Klamath weed	*Hypericum perforatum**

APPENDIX D

Wildlife Species Observed

Common Name	***Scientific Name***
Birds	
Anna's Hummingbird	*Calypte anna*
Killdeer	*Charadrius vociferus*
White-tailed Kite	*Elanus leucurus*
Black Phoebe	*Sayornis nigricans*
House Finch	*Haemorhous mexicanus*
Lesser Goldfinch	*Spinus psaltria*
White-crowned Sparrow	*Zonotrichia leucophrys*
Savannah Sparrow	*Passerculus sandwichensis*
Western Meadowlark	*Sturnella neglecta*
Red-winged Blackbird	*Agelaius phoeniceus*
Brewer's Blackbird	*Euphagus cyanocephalus*
Yellow-rumped Warbler	*Setophaga coronata*

APPENDIX C
Cultural Resources Inventory Report

Cultural Resources Inventory Report
for the
John Adams Academy-Sports Field Expansion
Project

El Dorado County, California

Prepared For:

Kimley-Horn and Associates, Inc.
555 Capitol Mall, Suite 300
Sacramento, California 95814

Prepared By:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
2525 Warren Drive
Rocklin, California 95677

December 14, 2023

MANAGEMENT SUMMARY

John Adams Academy retained ECORP Consulting, Inc. in 2023 to conduct a cultural resources inventory for the proposed John Adams Academy-Sports Field Expansion Project in the community of El Dorado Hills, El Dorado County, California. John Adams Academy proposes to construct a sports and multi-purpose complex.

The inventory included a records search, literature review, and field survey. The records search results indicated that two previous cultural resources studies have been conducted within the Project Area. As a result of those results, no resources have been previously recorded within the Project Area.

ECORP did not identify any cultural resources within the Project Area as a result of the records search and field survey. Recommendations for the management of unanticipated discoveries are provided.

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
APN	Assessor's Parcel Number
BLM	Bureau of Land Management
BP	Years before present
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CCTS	Central California Taxonomic System
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHL	California Historical Landmarks
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
CWA	Clean Water Act
DPR	California Department of Parks and Recreation
ECORP	ECORP Consulting, Inc.
GLO	General Land Office
MLD	Most Likely Descendant
MOA	Memorandum of Agreement
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHP	California Office of Historic Preservation
PRC	Public Resources Code
Project	John Adams Academy-Sport Field Expansion Project
RPA	Registered Professional Archaeologist
SHPO	State Historic Preservation Officer
TCR	Tribal Cultural Resource
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

1.0 INTRODUCTION

John Adams Academy retained ECORP Consulting, Inc. in 2023 to conduct a cultural resources inventory for the proposed John Adams Academy-Sports Field Expansion Project in the community of El Dorado Hills, El Dorado County, California. A survey of the Project Area was required to identify potentially eligible cultural resources (i.e., archaeological sites and historic buildings, structures, and objects) that could be affected by the Proposed Project.

1.1 Project Location and Project Description

The 5.1-acre Project Area is in Section 24 of Township 9 North, Range 8 East, Mount Diablo Base and Meridian, as depicted on U.S. Geological Survey (USGS) 1954 (photorevised 1980) Folsom SE, California 7.5-minute topographic quadrangle map (Figure 1). It is also known as Accessor's Parcel Numbers (APNs) 117-720-007-000, 117-720-004-000, and 117-720-009-000. The Project Area is bordered by Latrobe Road to the east, El Dorado Hills Business Park to the north and west, and a vacant field to the south.

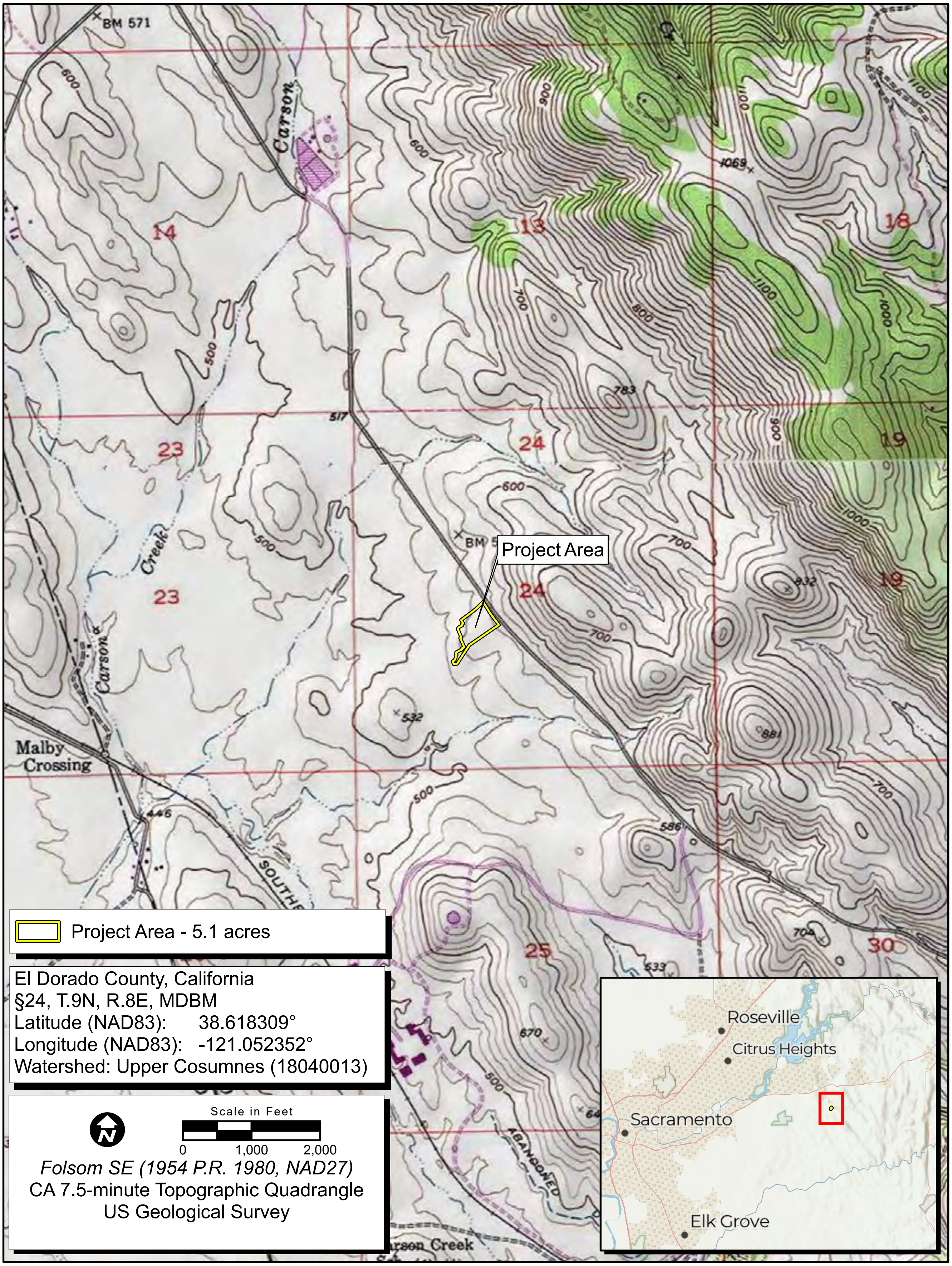
The Proposed Project entails the construction of a sports and multi-purpose complex with two amphitheaters, a running trail, a basketball court, hard courts, two soccer fields, a learning pavilion, an outdoor plaza, a playground area with associated utilities, infrastructure, and landscaping improvements and installation.

1.2 Area of Potential Effects

The Area of Potential Effects (APE) consists of the horizontal and vertical limits of a project and includes the area within which significant impacts or adverse effects to Historical Resources or Historic Properties could occur as a result of the project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations). For projects subject to the California Environmental Quality Act (CEQA) review, the term Project Area is used rather than APE. The terms Project Area and APE are interchangeable for the purpose of this document.

The horizontal APE consists of all areas where activities associated with a project are proposed and, in the case of this Project, equals the Project Area subject to environmental review under the National Environmental Policy Act (NEPA) and CEQA. This includes areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, paving, and other elements in the official Project description. The horizontal APE is illustrated in Figure 1 and measures 5.1 acres.

The vertical APE is described as the maximum depth below the surface to which excavations for project foundations and facilities will extend. Therefore, the vertical APE for this Project includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the Project Area, but could extend as deep as 20 feet below the current surface; therefore, a review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface.



Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Location_Vicinity\John Adams Vicinity.aprx - John Adams LnV (mguidry - 9/28/2023)

Map Date: 9/28/2023

Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2023-195 John Adams Academy Sports

The vertical APE also is described as the maximum height of structures that could impact the physical integrity and integrity of the setting of cultural resources, including districts and traditional cultural properties. For this Project, the above-surface vertical APE is as high as 50 feet above the surface, which is the maximum height of the proposed amphitheaters.

1.3 Regulatory Context

The CEQA lead agency for this Project is the County of Placer. There is currently no known federal lead agency.

A review of the regulatory context is provided below; however, the inclusion of any of these laws and regulations in this report does not make a law or regulation apply when it otherwise would not. Similarly, the omission of any other laws and regulations from this section does not mean that they do not apply. Rather, the purpose of this section is to provide context in explaining why the study was carried out in the manner documented herein.

1.3.1 National Environmental Policy Act

NEPA establishes national policy for the protection and enhancement of the environment. Part of the function of the federal government in protecting the environment is to "preserve important historic, cultural, and natural aspects of our national heritage." Cultural resources need not be determined eligible for the National Register of Historic Places (NRHP) through the National Historic Preservation Act (NHPA) of 1966 (as amended) to receive consideration under NEPA. NEPA is implemented by regulations of the Council on Environmental Quality (40 Code of Federal Regulations [CFR] 1500-1508).

The definition of *effects* in the NEPA regulations includes adverse and beneficial effects on historic and cultural resources (40 CFR 1508.8). Therefore, the *Environmental Consequences* section of an Environmental Impact Statement [see 40 CFR 1502.16(f)] must analyze potential effects to historic or cultural resources that could result from the proposed action and each alternative. In considering whether an alternative may "significantly affect the quality of the human environment," a federal agency must consider, among other things:

- Unique characteristics of the geographic area, such as proximity to historic or cultural resources (40 CFR 1508.27(b)(3)), and
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the NRHP (40 CFR 1508.27(b)(8)).

Therefore, because historic properties are a subset of *cultural resources*, they are one aspect of the *human environment* defined by NEPA regulations.

1.3.2 National Historic Preservation Act

The federal law that covers cultural resources that could be affected by federal undertakings is the NHPA of 1966, as amended. Section 106 of the NHPA requires that federal agencies take into account the effects of a federal undertaking on properties listed in or eligible for the NRHP. The agencies must afford the

Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on the undertaking. A federal undertaking is defined in 36 CFR 800.16(y):

> A federal undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license, or approval.

The regulations that stipulate the procedures for complying with Section 106 are in 36 CFR 800. The Section 106 regulations require:

- definition of the APE;
- identification of cultural resources within the APE;
- evaluation of the identified resources in the APE using NRHP eligibility criteria;
- determination of whether the effects of the undertaking or project on eligible resources will be adverse; and
- agreement on and implementation of efforts to resolve adverse effects, if necessary.

The federal agency must seek comment from the State Historic Preservation Officer (SHPO) and, in some cases, the ACHP, for its determinations of eligibility, effects, and proposed mitigation measures. Section 106 procedures for a specific project can be modified by negotiation of a Memorandum of Agreement or Programmatic Agreement between the federal agency, the SHPO, and, in some cases, the project proponent.

Effects to a cultural resource are potentially adverse if the lead federal agency, with the SHPO's concurrence, determines the resource eligible for the NRHP, making it a Historic Property, and if application of the Criteria of Adverse Effects (36 CFR 800.5[a][2] et seq.) results in the conclusion that the effects will be adverse. The NRHP eligibility criteria, contained in 36 CFR 63, are as follows:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and
>
> A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. that are associated with the lives of persons significant in our past; or
>
> C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. that have yielded, or may be likely to yield, information important in prehistory.

In addition, the resource must be at least 50 years old, barring exceptional circumstances (36 CFR 60.4). Resources that are eligible for, or listed on, the NRHP are *historic properties*.

Regulations implementing Section 106 of the NHPA (36 CFR 800.5) require that the federal agency, in consultation with the SHPO, apply the Criteria of Adverse Effect to historic properties within the APE. According to 36 CFR 800.5(a)(1):

> An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association.

1.3.3 California Environmental Quality Act

CEQA is the state law that applies to a project's impacts on cultural resources. A project is an activity that may cause a direct or indirect physical change in the environment and that is undertaken or funded by a state or local agency, or requires a permit, license, or lease from a state or local agency. CEQA requires that impacts to Historical Resources be identified and, if the impacts will be significant, then apply mitigation measures to reduce the impacts.

A Historical Resource is a resource that 1) is listed in or has been determined eligible for listing in the California Register of Historical Resources (CRHR) by the State Historical Resources Commission, or has been determined historically significant by the CEQA lead agency because it meets the eligibility criteria for the CRHR, 2) is included in a local register of historical resources, as defined in Public Resources Code (PRC) 5020.1(k), or 3), and has been identified as significant in a historical resources survey, as defined in PRC 5024.1(g) (California Code of Regulations [CCR] Title 14, Section 15064.5(a)).

The eligibility criteria for the CRHR are as follows (CCR Title 14, Section 4852(b)):

(1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

(2) It is associated with the lives of persons important to local, California, or national history;

(3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

(4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity, which is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (CCR Title 14, Section 4852(c)). Resources that have been determined eligible for the NRHP are automatically eligible for the CRHR.

Impacts to a Historical Resource, as defined by CEQA (listed in an official historic inventory or survey or eligible for the CRHR), are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired (CCR Title 14, Section 15064.5(b)). Demolition or alteration of eligible buildings, structures, and features that they would no longer be eligible would result in a significant impact. Whole or partial destruction of eligible archaeological sites would result in a significant impact. In addition to impacts from construction resulting in destruction or physical alteration of an eligible resource, impacts to the integrity of setting (sometimes termed *visual impacts*) of physical features in the Project Area could also result in significant impacts.

Tribal cultural resources (TCRs) are defined in Section 21074 of the California PRC as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either included in or determined to be eligible for inclusion in the CRHR, or are included in a local register of historical resources as defined in subdivision (k) of Section 5020.1, or are 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 Section 5024.1. Section 1(b)(4) of Assembly Bill (AB) 52 established that only California Native American tribes, as defined in Section 21073 of the California PRC, are experts in the identification of TCRs and impacts thereto. Because ECORP does not meet the definition of a California Native American tribe, it only addresses information in this report for which it is qualified to identify and evaluate, and that which is needed to inform the cultural resources section of CEQA documents. This report, therefore, does not identify or evaluate TCRs. Should California Native American tribes ascribe additional importance to or interpretation of archaeological resources described herein, or provide information about non-archeological TCRs, that information is documented separately in the AB 52 tribal consultation record between the tribe(s) and lead agency and summarized in the TCRs section of the CEQA document, if applicable.

1.3.4 U.S. Army Corps of Engineers Regulations

If the Project would affect waters of the United States, the Project Proponent must meet requirements of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899 and/or Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, and therefore, seek authorization from the U.S. Army Corps of Engineers (USACE). The USACE Sacramento District provides guidance for preparation of Section 106 reports in "2020 Sacramento District Regulatory Branch Guidelines for Compliance with Section 106 of the NHPA of 1966, as amended." Apart from the requirements of the NHPA, all historic properties are subject to consideration under the USACE's NEPA processes (33 CFR Part 325, Appendix B), and the USACE's public interest review requirements contained in 33 CFR 320.4. Therefore, historic properties are included as a factor in the district engineer's decision on each Clean Water Act (CWA) 404 permit application.

If the Project or activity is found to have an adverse effect on NRHP-designated historic properties, the district engineer will coordinate with the SHPO to seek ways to avoid or reduce effects on designated historic properties. At any time during CWA 404 permit processing, the district engineer may consult with the involved parties to discuss and consider possible alternatives or measures to avoid or minimize adverse effects of a proposed activity in accordance with the procedures described in 33 CFR Part 325, Appendix C. If the consultation results in a mutual agreement among the SHPO, the permit applicant, and the district engineer regarding the treatment of designated historic properties, then the district engineer may formalize that agreement either through special conditions added to the CWA 404 permit or by signing a Memorandum of Agreement (MOA) with these parties. Such an MOA will constitute the comments of the SHPO and the ACHP. The criteria involved in making an adverse effect determination are described fully in 33 CFR Part 325, Appendix C.

The USACE district engineer, in accordance with 33 CFR 320.4, shall weigh all factors, including the effects of the undertaking on historic properties and any comments of the ACHP and the SHPO, and any views of other interested parties, in making a decision about a permit application. The district engineer will add permit conditions to avoid or reduce effects on historic properties that are determined necessary in accordance with 33 CFR 325.4. The district engineer will consider the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Federal Register 44716) for making decisions. If permitting the project would cause irrevocable loss of important scientific, prehistoric, historical, or archeological data, the district engineer, in accordance with the Archeological and Historic Preservation Act, will advise the Secretary of the Interior of the extent of loss of data, implementation of plans to mitigate such a loss, and the inclusion of permit conditions for mitigation.

1.4 Report Organization

The following report documents the study and its findings and was prepared in conformance with the California Office of Historic Preservation's (OHP) *Archaeological Resource Management Reports: Recommended Contents and Format*. Appendix A includes a confirmation of the records search with the California Historical Resources Information System (CHRIS) and historical society coordination. Appendix B contains documentation of a search of the Sacred Lands File. Appendix C presents photographs of the Project Area.

Sections 6253, 6254, and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (Government Code Section 6250 et seq.) and California's open meeting laws (The Brown Act, Government Code Section 54950 et seq.) protect the confidentiality of Native American cultural place information. Because the disclosure of information about the location of cultural resources is prohibited by the Archaeological Resources Protection Act of 1979 (16 U.S. Code 552 470hh) and Section 307103 of the NHPA, it is exempted from disclosure under Exemption 3 of the federal Freedom of Information Act (5 U.S. Code 552) Likewise, the Information Centers of the CHRIS maintained by the OHP prohibit public dissemination of records search information.

2.0 SETTING

2.1 Environmental Setting

The Project Area is southeast of the City of Folsom and south of the community of El Dorado Hills. Latrobe Road parallels the Project Area's eastern boundary, and El Dorado Hills Business Park borders the northern and western sides of the Project Area. The Project Area is situated in an open grass field, southeast of El Dorado Business Park and south of the John Adams Academy campus. An unnamed drainage and Deer Creek are located approximately 260 feet and 1.85 miles southwest of the Project Area, respectively. The elevations within the Project Area range from 523 to 563 feet above mean sea level.

2.2 Geology and Soils

The Geologic Map of California identifies the underlying geology of the Project Area as metavolcanic rock that dates to the Mesozoic era (State of California 2015). This underlying geology contains andesite and rhyolite rocks, greenstone, volcanic breccia, and other pyroclastic rocks, which are partly strongly metamorphosed. It also includes volcanic rocks of the Franciscan complex, such as basaltic pillow lava, diabase, greenstone, and minor pyroclastic rocks.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2023), two soil types exist within the Project Area. Auburn very rocky silt loam, 2 to 30 percent slopes (AxD) is a well-drained soil type that is derived from residuum weathered from basic igneous rock and/or basic residuum weathered from metamorphic rock. The depth to bedrock is between 14 and 18 inches. Auburn silt loam, 2 to 30 percent slopes (AwD) is a well-drained soil type that is derived from residuum weathered from basic igneous rock and/or basic residuum weathered from metamorphic rock. The depth to bedrock is between 14 and 18 inches.

A low potential for buried pre-contact archaeological sites exists within the Project Area due to the shallow depth of bedrock, which restricts the depth of cultural deposits.

2.3 Vegetation and Wildlife

Prior to the arrival of European-Americans, the Project Area would have been a California prairie, which consists of a dense-to-open, medium-tall bunchgrasses community with many forbs (Küchler 1977). The dominant plant species would have been needlegrass and spear grass.

Prior to the arrival of European-Americans, wildlife that would have inhabited the Project Area and surrounding landscape would have included deer, elk, antelope, grizzly bears, mountain lions, coyotes, rabbits, and raccoons. Avifauna would have included various species of waterfowl, mourning doves, quail hawks, and owls.

3.0 CULTURAL CONTEXT

3.1 Regional Pre-contact History

It is generally believed that human occupation of California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 8,000 BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Animals that were hunted probably consisted mostly of large species still alive today. Bones of extinct species have been found but cannot definitively be associated with human artifacts. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and floral foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods (Wallace 1978).

Around 8,000 BP, there was a shift in focus from hunting toward a greater reliance on plant resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 5,000 BP, is sometimes referred to as the Millingstone Horizon (Wallace 1978). Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to 8,000 BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (Wallace 1978).

Archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments in sites dating to after about 5,000 BP. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. New peoples from the Great Basin began entering Southern California during this period. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. During this period, known as the Late Horizon, population densities were higher than before, and settlement became concentrated in villages and communities along the coast and interior valleys (Erlandson 1994; McCawley 1996). Regional subcultures also started to develop, each with its own geographical territory and language or dialect (Kroeber 1925; McCawley 1996; Moratto 1984). These were most likely the basis for the groups that the first Europeans encountered during the 18th century (Wallace 1978). Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction (Erlandson 1994). The presence of small projectile points indicates the introduction of the bow and arrow into the region sometime around 2,000 BP (Moratto 1984; Wallace 1978).

3.2 Local Pre-contact History

Ethnographic and archaeological research in the region has led to the development of a cultural chronology and context that can be used to interpret the archaeological record. This section provides a regional overview with contextual elements drawn from California's Central Valley Region, the Western Foothills Region, and from the transition zone itself where the Project lies. There has been more extensive research and study of Central Valley prehistory than the prehistory of the Sierra Nevada foothill zone, but a fair amount of cultural overlap exists within these regions. This section includes the most recent and readily available research of both regions (Rosenthal et al. 2007) and includes some reference to the climactic changes that swept the Sierra Nevada being a catalyst for population movement that led to cultural change in the foothills.

California's Great Central Valley has long held the attention of archaeologists and was a focus of early research in California. Archaeological work during the 1920s and 1930s led to the cultural chronology for central California presented by Lillard, Heizer, and Fenenga in 1939. This chronology was based on the results of excavations conducted in the lower Sacramento River Valley. This chronology identified three archaeological cultures, named Early, Transitional, and Late (Lillard et al. 1939).

Heizer (1949) redefined the description of these three cultures. He subsumed the three cultural groups into three time periods, designated the Early, Middle, and Late horizons. He primarily focused his research and reexamination of Lillard et al. (1939) on the Early Horizon, which he named Windmiller. He also intimated that new research, and a reanalysis of existing data would be initiated for cultures associated with the Middle and Late horizons; however, he did not complete this work and other research filled in the gaps.

Following years of documenting artifact similarities among sites in the San Francisco Bay region and the Delta, Beardsley (1948, 1954) formatted his findings into a cultural model known as the Central California Taxonomic System (CCTS). This system proposed a linear, uniform sequence of cultural succession in Central California, and explicitly defined Early, Middle, and Late horizons for cultural change. Archaeological researchers have subsequently refined and redefined aspects of the CCTS. For instance, Fredrickson (1973, 1974, and 1994) reviewed general economic, technological, and mortuary traits between archaeological assemblages across the region. He separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian (12,000-8,000 B.P.); Lower, Middle, and Upper Archaic (8,000 B.P. to A.D. 500) and Upper and Lower Emergent (A.D. 500 to 1800).

Fredrickson further defined three cultural patterns: The Windmiller (named after Heizer 1949 and Lillard et al. 1939), the Berkeley, and the Augustine patterns, and assigned them to the Early, Middle, and Late horizons of the CCTS. These patterns were defined to reflect the general sharing of lifeways within groups in a specific geographic region. The Windmiller pattern of the Early Horizon included cultural patterns dating from 5,000 to 3,000 B.P.; the Berkeley Pattern of the Middle Horizon (also known as the Cosumnes cultural pattern after Ragir 1972), included cultural patterns dating from 3,000 B.P. to A.D. 500, and the Augustine Pattern of the Late Horizon included the cultural patterns from A.D. 500 to the historic period.

Fredrickson’s (1974) Paleo-Archaic-Emergent cultural sequence was redefined by Rosenthal et al. (2007). Rosenthal et al.’s recalibrated sequence is divided into three broad periods: The Paleoindian Period (11,550 to 8,550 cal. B.C.); the three-staged Archaic period, consisting of the Lower Archaic (8,550 to 5,550 cal. B.C.), Middle Archaic (5,550 to 550 cal. B.C.), and Upper Archaic (550 cal. B.C to cal. A.D. 1,100); and the Emergent Period (cal. A.D. 1,100 to Historic) (Rosenthal et al. 2007). The three divisions of the Archaic Period correspond to climate changes. This is the most recently developed sequence and is now commonly used to interpret Central California prehistory. The aforementioned periods are characterized by the following:

3.2.1 Paleo-Indian Period

This period began when the first people began to inhabit what is now known as the California culture area. It was commonly believed these first people subsided subsisted on big game and minimally processed foods, (i.e., hunters and gatherers), presumably with no trade networks. More recent research indicates these people may have been more sedentary, relied on some processed foods, and traded (Rosenthal et al. 2007). Populations likely consisted of small groups traveling frequently to exploit plant and animal resources.

3.2.2 Archaic Period

This period was characterized by an increase in plant exploitation for subsistence, more elaborate burial accoutrements, and increase in trade network complexity (Bennyhoff and Fredrickson 1994). The three divisions that correspond to prehistoric climate change are characterized by the following aspects (Rosenthal et al. 2007):

- Lower Archaic Period—this period is characterized by cycles of widespread floodplain and alluvial fan deposition. Artifact assemblages from this period include chipped stone crescents and early wide-stemmed points, marine shell beads, eastern Nevada obsidian, and obsidian from the north Coast Ranges. These types of artifacts found on sites dating to this period indicate trade was occurring in multiple directions. A variety of plant and animal species were also utilized, including acorns, wild cucumber, and manzanita berries.
- Middle Archaic Period—this period is characterized by a drier climate period. Rosenthal et al. (2007) identified two distinct settlement/subsistence patterns in this period: the Foothill Tradition and the Valley Tradition. Functional artifact assemblages, consisting primarily of locally sourced flaked- stone and groundstone cobbles, characterize the foothills tradition, while the Valley Tradition was generally characterized by diverse subsistence practices and extended periods of sedentism.
- Upper Archaic Period—this period is characterized by abrupt change to wetter and cooler environmental climate conditions. Much greater cultural diversity is evident from this period. More specialized artifacts, such as bone tools, ceremonial blades, polished and groundstone plummets, saucer and saddle Olivella shell beads, Haliotis shell ornaments, and a variety of groundstone implements are characteristic of this period.

3.2.3 Emergent Period

This period is most notably marked by the introduction of the bow and arrow, the emergence of social stratification linked to wealth, and more expansive trade networks signified by the presence of clam disk beads that were used as currency (Moratto 1984). The Augustine pattern (the distinct cultural pattern of the Emergent Period) is characterized by the appearance of small projectile points (largely obsidian), rimmed display mortars, flanged steatite pipes, flanged pestles, and chevron-designed bird-bone tubes. Large mammals and small seeded resources appear to have made up a larger part of the diet during this period (Fredrickson 1968; Meyer and Rosenthal 1997).

The following discussion summarizes the cultural patterns and the different local developments that are represented in archaeological deposits in the region surrounding the current Project Area.

The Windmiller Pattern of the Early Horizon (as defined by Beardsley 1948), dates to the Middle Archaic (as defined by Rosenthal et al. 2007) and may be the most extensively studied of all the cultural patterns defined for the Central Valley. In fact, the similarity noted between elements of Windmiller and materials from other sites may have been the catalyst for early archaeologists identifying the material cultural "blending" of groups in the Central Valley during this period. The temporal span for Windmiller has been updated and reanalyzed several times in the archaeological literature (Fredrickson 1973, 1974; Heizer 1949; Moratto 1984; Ragir 1972). The date originally proposed for the emergence of Windmiller was 4,500 B.P. (Lillard et al. 1939; Ragir 1972), because the culture at 4,000 years ago appeared to have been fully developed and seemed to have been well integrated into the regional economic system.

Characteristics to identify the Windmiller pattern have been presented by multiple authors over time (Fredrickson 1973, 1974; Heizer 1949; Moratto 1984; Ragir 1972). Most notable characteristics are:

- Large, heavy stemmed and leaf-shaped projectile points commonly made of a variety of materials other than obsidian;
- Perforated charmstones;
- Haliotis and Olivella shell beads and ornaments;
- 5 Trident fish spears;
- Baked clay balls (presumably for cooking in baskets);
- Flat slab milling stones;
- Small numbers of mortars; and
- Ventrally extended burials oriented toward the west.

The subsistence pattern of Windmiller groups probably emphasized hunting and fishing, with supplemental seed collecting (possibly including acorns) (Heizer 1949; Moratto 1984; Ragir 1972).

Windmiller groups acquired obsidian from at least two Coast Ranges and three trans-Sierran sources, Haliotis and Olivella shells and ornaments from the coast, and quartz crystals from the Sierra Nevada foothills (Heizer 1949; Ragir 1972). It is widely hypothesized that the bulk of these materials were acquired through trade, however some may have been acquired as part of seasonal movements between the Central Valley and the Sierra Nevada foothills.

There is evidence for seasonal transhumance in the distribution of Windmiller artifacts, sites, and burial patterns. Johnson's work along the edge of the Sierra Nevada foothills at Camanche Reservoir and CA-AMA-56, the Applegate site, suggests a link between Windmiller groups of the Central Valley and the Sierra Nevada mortuary caves (Johnson 1967, 1970). Johnson (1970) suggested that his data reveals a pattern of gradual change from the Early through the Middle Horizon (as defined by Beardsley 1948), rather than a displacement of local groups by foreign populations as theorized by Baumhoff and Olmstead (1963) based on ethnolinguistic evidence. Rondeau (1980), also working at the edge of the Central Valley at CA-ELD-426, the Bartleson Mound, identified components of the Early Horizon (as defined by Beardsley 1948). He even postulated a potential relationship between the Early Horizon cultures and the Martis Complex—a basalt-preferring culture in the Martis Valley of the Sierra Nevada (Rondeau 1980). In addition, analysis of Windmiller burial orientation (Schulz 1970) and skeletal analyses (e.g., Harris Lines) by McHenry (1968) suggest a high percentage of winter death among Windmiller groups. Incorporating all of this data, Moratto (1984) postulated that Windmiller groups were exploiting the foothills of the Sierra Nevada during the summer and returning in the winter to villages in the Central Valley as early as 4,000 B.P.

Excavations at CA-PLA-500 (Wohlgemuth 1984), the Sailor Flat site located near CA-PLA-101, sites at the 12 Twelve Bridges Golf Course, now the Catta Verdera Golf Course, in Rocklin, Lincoln, and Spring Garden

Ravine site CA-PLA-101 provide examples of Windmiller sites that had items in their cultural assemblages similar to the material culture of groups elsewhere in California and the foothills.

The succeeding Middle Horizon, namely the Cosumnes Culture after Ragir (1972), the Berkeley Pattern after Fredrickson (1974), and absorbed into the Middle and Upper Archaic designations by Rosenthal et al. (2007) was first recognized at site CA-SAC-66. Much less- published material discusses the patterns defined for this era than does Windmiller, none the less, some of the most notable characteristics are:

- Tightly flexed burials with variable orientation;
- Red ochre stains in burials;
- Distinctive Olivella and Haliotis beads and ornaments;
- Distinctive charmstones;
- Cobble mortars and evidence of wooden mortars;
- Numerous bone tools and ornaments;
- Large, heavy foliate and lanceolate concave base projectile points made of materials other than obsidian; and
- Objects of baked clay.

Further classification of the Middle Archaic (as defined by Rosenthal et al. 2007) into the Foothill Tradition and Valley Tradition helped to clarify the different types of cultural sequences, which occurred during these time periods. Functional artifact assemblages consisting primarily of locally sourced flaked- stone and groundstone cobbles characterize the Foothills Tradition, with very few trade goods. Sites that represent the Valley Tradition are much fewer in number and are generally characterized by much more diverse subsistence practices and extended periods of sedentism. Specialized tools, trade goods, and faunal refuse that indicate year-round occupation are evident on sites of the Valley Tradition (Rosenthal et al. 2007). Distinct artifacts attributed to this tradition include one of the oldest dated shell bead lots in central California (4,160 B.P.) and a particular type of pestle used with a wooden mortar (Meyer and Rosenthal 1997).

The Sierra Nevada experienced significant climactic shifts and concomitant vegetation change throughout the Holocene, but pollen analysis and climactic records indicate that the current climate pattern and primary constituents of vegetation communities were in place by the Middle Archaic around 1,000 B.C. (Hull 2007). Seasonal transhumance practiced by indigenous populations of the Sierra may have become more consistent during this period of relative environmental stasis.

Paleobotanical analysis from sites of the Foothill Tradition including CA-CAL-789, CA-CAL-629, and CA-CAL-630 confirm that acorns and pine nuts were preferred for subsistence (Rosenthal and McGuire 2004; , Wohlgemuth 2004) Sites near the Project Area associated with the Valley Tradition are rare in the early Middle Archaic (ca. 5,550 to 2,050 cal. B.C.) but include the Reservation Road site (CA-COL-247), and two buried sites in the northern Diablo range (CA-CCO-637 and CA-CCO-18/548). Sites associated with later portions of the Middle Archaic (post-2,050 cal. B.C.) near the Project Area include CA-SAC-107 and CA-

BUT-233, both of which produced elaborate material culture and diverse dietary and technological assemblages.

The next era in the region is identified as the Late Horizon by Beardsley (1948, 1954), the Hotchkiss Culture by Ragir (1972), and the Augustine Pattern by Fredrickson (1974). The culture was formed by populations during the later Upper Archaic and Emergent Periods, as defined by Rosenthal et al. (2007), and ranges in age from around 550 cal. B.C. to contact (dates vary between the different models of prehistory developed for the region). The Upper Archaic, as discussed above, corresponds with the late Holocene change in environmental conditions to a wetter and cooler climate. The Emergent Period and Late Horizon are markedly represented by the introduction of bow and arrow technology, as well as more pronounced cultural diversity as reflected in diversity of burial posturing, artifact styles, and material culture. Cultural patterns for this era are represented in the northern Sacramento Valley, namely within the Whiskeytown Pattern, at sites CA-SHA-47, CA-SHA-571/H, CA-SHA-890, CA-SHA-891, and CA-SHA-892 (Sundahl 1982, 1992).

This era primarily represents both local innovation and the blending of new cultural traits introduced into the Central Valley. The Emergent Occupation (as defined by Rosenthal et al. 2007) coincides with the Augustine Pattern (Fredrickson 1974) in the lower Sacramento Valley/Delta region, and with the Sweetwater and Shasta complexes in the northern Sacramento Valley (Fredrickson 1974; Kowta 1988; Sundahl 1982). The emergence of the Augustine Pattern appears to have been associated with the expansion of Wintun populations from the north, which appears to have led to an increase in settlements in the area after 550 B.P. (Bennyhoff 1994; Moratto 1984).

During this period in the Sierra Nevada, paleoenvironmental data suggests severe droughts occurred from around A.D. 892 to 1112 and A.D. 1210 to 1350 (Hull 2007; Lindstrom 1990; Stine 1994). These drier conditions surely affected the seasonal resource procurement rounds of the native populations during this time, and likely led to an influx of population movement and cultural blending into the foothills zone and Central Valley by Sierra Nevada groups.

Despite the varying designations, this emergent era is distinguished in the archaeological record by intensive fishing, extensive use of acorns, elaborate ceremonialism, social stratification, and cremation of the dead. Artifacts associated with the defined patterns (Augustine, Emergent, Hotchkiss) include bow- and -arrow technology (evidenced by small projectile points), mortars and pestles, and fish harpoons with unilaterally or bilaterally placed barbs in opposed or staggered positions (Bennyhoff 1950). Mortuary patterns include flexed burials and cremations, with elaborate material goods found in association with prestigious individuals. A local form of pottery, Cosumnes brownware, emerged in the lower Sacramento Valley (Rosenthal et al. 2007). Sites contain this ceramic type in their artifact assemblage near the Project Area include CA-SAC-6, CA-SAC-67, CA-SAC-107, CA-SAC-265, and CA-SAC-329. Human animal effigies are also a marker of this emergent era around the Project Area and are present at sites CA-SAC-6, CA-SAC-16, CA-SAC-29, CA-SAC-267, and CA-SAC-267

3.3 Ethnographic History

3.3.1 Eastern Miwok

Ethnographically, the Project Area is near the territory occupied by the Plains Miwok group of the Eastern Miwok. The Miwok is comprised of four groups: the Plains Miwok, Bay Miwok, Coast Miwok and Sierra Miwok. The Plains Miwok were located between Freeport and Rio Vista along the Sacramento River and extended south along the lower reaches of the Mokelumne and Cosumnes Rivers. The Bay Miwok occupied the western Sacramento-San Joaquin Delta area to the eastern portion of Contra Costa County. The Coast Miwok occupied Marin and Sonoma counties.

The Sierra Miwok are further identified by three subgroups, the Northern Sierra Miwok, Central Sierra Miwok, and Southern Sierra Miwok. The Northern Sierra Miwok occupied the "the foothill and mountain portions of the Stanislaus and Tuolumne drainages" (Levy 1978). The Central Sierra Miwok occupied the foothill region south of the Cosumnes River to the upper drainages of the Chowchilla and Merced Rivers (Levy 1978). The Southern Sierra Miwok occupied the upper drainages of the Merced and Chowchilla rivers.

The Project Area is situated within the Plains Miwok indigenous territory, which included tribelets along the Sacramento, Cosumnes, and Mokelumene rivers. Tribelets were the primary political units and had defined boundaries which excluded resource use by members of other tribelets. Tribelets often consisted of a population of 300 to 500 people. Within each tribelet were permanent settlements, as well as seasonal hunting and gathering campsites (Levy 1978). A total of 28 tribelets made up the Plains Miwok, and according to Bennyhoff (1977), tribelets would sometimes group together to form larger units, such as the Mokelumne, the Cosumnes, and the North Delta groups.

Subsistence for the Plains Miwok centered on hunting, gathering, and fishing within the confines of their tribelet areas. During the fall and early winter, acorns were gathered, stored, and processed for consumption year-round. Acorns were the main staple in the Plains Miwok diet, with at least seven different types available; acorns from valley oaks were commonly used. In addition to acorns, seeds and roots were also important food items, gathered primarily in the summer (Levy 1978). Hunting of game animals occurred during the winter months, with deer, tule elk, and antelope being the most common. These animals were hunted individually and by families and tribelets. Smaller game, such as rabbit and various waterfowl, were also hunted, but were usually taken by trapping. The dominant aquatic resource for the Plains Miwok was salmon, which was caught primarily using nets, but also by harpoon during the spring and summer months. Sturgeon was also fished, using line and hook (Levy 1978).

Among the Plains Miwok, the most common dwelling consisted of a thatched structure with poles arranged in a cone-shape with grasses, brush, and tules applied to the exterior. Wealthier people, or those of higher status, sometimes lived in earth-covered semi-subterranean dwellings. At the center of the village were roundhouses or assembly houses. These large gathering structures were usually composed of a 40- to 50-foot diameter pit dug down to about three to four feet below the surface. The structure had a planked roof with a layer of earth on top, which resembled a mound (Levy 1978).

The role of tribelet chief was passed down from father to son. The chief was responsible for advising the tribe, managing the natural resources of the area, acting as a delegate between the other tribes, and serving as leaders during times of war. The chief had control of religious and social gatherings, as well as acting as the deciding body in times of arguments and disputes (Aginsky 1947). Under the chief were messengers and speakers. The roles of messengers were to deliver invitations to ceremonies and to announce during ritual ceremonies. The titles of messengers were passed down to males within the families, in the same fashion as the chief. The roles of the speakers were to gather food contributions and ritual paraphernalia for ceremonies, and to make announcements for the chief regarding food preparation and gathering. The speaker's position was an elected one and there were speakers elected for each settlement within the tribelet (Merriam 1966, Merriam 1967a and Merriam 1967b).

The Plains Miwok encountered European culture beginning in the late 1700s. Traditional lifeways were drastically altered during the early to mid-1800s as Spanish colonization and proselytization, Mexican land grants, and the American takeover and settlement pushed indigenous peoples into the rugged California interior and reduced their numbers through transport to the missions, disease, and slaughter. Missionization of the Amuchamne people began in 1834-1835. However, only seven baptisms were recorded at that time. The population of the Amuchamne was depleted by the 1833 epidemic, which may in addition to resistance, account for the low number of subsequent baptisms (Bennyhoff 1977).

The discovery in 1848 of gold in the Sierra foothills and the ensuing Gold Rush led to a flood of nonindigenous peoples into Miwok territory. The Amuchamne was the only organized Cosumnes River Miwok village to survive the 1849 California Gold Rush. However, according to Bennyhoff, sometime between 1850 and 1870, the people of the Amuchamne moved their village to the outskirts of Elk Grove. By 1870, the native people had built a dance house at the Elk Grove village, which became a principal dance center for the Plains Miwok (Bennyhoff 1977). By 1890, Amuchamne descendants were reported to have left the village to take jobs as farm laborers. During the first half of the 1900s, the federal government acquired lands (from 2 acres to more than 300 acres) and established reservations, or rancherias, for the Plains Miwok, Northern Sierra Miwok, and Central Sierra Miwok (Levy 1978). The U.S. Bureau of Indian Affairs terminated relations with most of these Rancherias between 1934 and 1972, but status has been restored to most of the Rancherias, beginning in 1984.

3.3.2 Nisenan

Prior to the arrival of Euro-Americans in the region, indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. Kroeber (1925, 1936), and others (i.e., Murdock 1960; Driver 1961), recognized the uniqueness of California's indigenous groups and classified them as belonging to the California culture area. Kroeber (1925) further subdivided California into four subculture areas: Northwestern, Northeastern, Southern, and Central.

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about 1/3 of the state's native population, lived in the Central Valley (Moratto 1984). At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction (Rosenthal et al. 2007). The Central area (as defined by Kroeber 1925) encompasses the current Project Area and includes the Nisenan or Southern Maidu.

Ethnographically, the Project Area is in the southwestern portion of the territory occupied by the Penutian-speaking Nisenan. Nisenan inhabited the drainages of the Yuba, Bear, and American rivers, and also the lower reaches of the Feather River, extending from the east banks of the Sacramento River on the west to the mid to high elevations of the western flank of the Sierra Nevada to the east (Wilson and Towne 1978). The territory extended from the area surrounding the current City of Oroville on the north to a few miles south of the American River in the south. The Sacramento River bounded the territory on the west, and in the east, it extended to a general area located within a few miles of Lake Tahoe.

As a language group, Nisenan (meaning "from among us" or "of our side") are members of the Maiduan Family of the Penutian stock and are generally divided into three groups based on dialect differences: the Northern Hill (mountain) Nisenan in the Yuba River drainage; the Valley Nisenan along the Sacramento River; and the Southern Hill (foothills) Nisenan along the American River (Beals 1933; Kroeber 1925; Wilson and Towne 1978). Individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged (Kroeber 1925; Wilson and Towne 1978). Residence was generally patrilocal, but couples actually had a choice in the matter (Wilson and Towne 1978).

The basic social and economic group for the Nisenan was the family or household unit. The nuclear and/or extended family formed a corporate unit. These basic units were combined into distinct village or hamlet groups, each largely composed of consanguine relatives (Beals 1933; Littlejohn 1928). Lineage groups were important political and economic units that combined to form tribelets, which were the largest sociopolitical unit identified for Nisenan (Wilson and Towne 1978). Each tribelet had a chief or headman who exercised political control over all villages within it. Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The role of chief seems to have been an advisory role with little direct authority (Beals 1933) but with the support of the shaman and the elders, the word of the chief became virtually the law (Wilson and Towne 1978). Tribelets assumed the name of the head village where the chief resided (Beals 1933; Levy 1978).

The office of tribelet chief was hereditary, with the chieftainship being the property of a single patrilineage within the tribelet. Tribelet populations of Valley Nisenan were as large as 500 persons (Wilson and Towne 1982), while foothill and mountain tribelets ranged between 100 and 300 persons (Littlejohn 1928; Levy 1978). Each tribelet owned a bounded tract of land and exercised control over its natural resources (Littlejohn 1928). Beals (1933) estimated that Nisenan tribelet territories averaged approximately 10 miles along each boundary, or 100 square miles, with foothill territories tending to encompass more area than mountain territories. Littlejohn (1928) noted that in many instances, these boundaries were indicated by piles of stones. Regardless, Nisenan groups tended to stay within their village areas except during the summer season when groups of people would sojourn into the mountains to hunt and gather (Littlejohn 1928).

Nisenan practiced seasonal transhumance, a subsistence strategy involving moving from one area or elevation to another to harvest plants, fish, and hunt game across contrasting ecosystems that were in relatively close proximity to each other. Valley Nisenan generally did not range beyond the valley and lower foothills, while foothill and mountain groups ranged across a more extensive area that included jointly shared territory whose entry was subject to traditional understandings of priority of ownership and current relations between the groups (d'Azevedo 1963).

During most of the year, Nisenan usually lived in permanent villages located below about 2,500 feet that generally had a southern exposure, were surrounded by an open area, and were located above, but close to watercourses (Littlejohn 1928). The rather large uninhabited region between the 3,000-foot contour and the summit of the Sierra Nevada was considered open ground, which was only used by communities living along its edge (Littlejohn 1928). Beals (1933) noted that permanent villages in the foothills and mountains were usually located on high ground between rivers. Valley villages were also usually located on raised areas to avoid flooding. Littlejohn (1928) stated that at one time there were settlements located on every small stream within Nisenan territory, but permanent villages were not located in steep, dark, narrow canyons of large rivers, or at altitudes where deep snows persisted throughout the winter. In fact, permanent occupation sites above 3,500 feet were only located in protected valleys (Littlejohn 1928).

The availability of resources influenced the location of Nisenan permanent villages, since they acquired a proportion of their food resources from the general surrounding area (Littlejohn 1928; Wilson and Towne 1978). Other essential and critical food resources were obtained during the summer, when small base camps were established at higher altitudes in proximity to a water source. Individuals would stage expeditions to acquire natural, faunal, and plant resources from these camps (Littlejohn 1928; Wilson and Towne 1978).

Communally organized Nisenan task groups exploited a wide variety of resources. Communal hunting drives were undertaken to obtain deer, quail, rabbits, and grasshoppers. Bears were hunted in the winter when their hides were at their best condition. Runs of salmon in the spring and fall provided a regular supply of fish, while other fish such as suckers, pike, whitefish, and trout were obtained with snares, fish traps, or with various fish poisons such as soaproot (Beals 1933; Faye 1923; Wilson and Towne 1978). Birds were caught with nooses or large nets and were also occasionally shot with bow and arrow. Game was prepared by roasting, baking, or drying. In addition, salt was obtained from a spring near modern-day Rocklin (Wilson and Towne 1978).

Acorns were gathered in the fall and stored in granaries for use during the rest of the year. Although acorns were the staple of the Nisenan diet, they also harvested roots like wild onion and “Indian potato,” which were eaten raw, steamed, baked, or dried and processed into flour cakes to be stored for winter use (Wilson and Towne 1978). Buckeye, pine nuts, hazelnuts, and other edible nuts further supplemented the diet. Key resources such as acorns, salmon, and deer were ritually managed through ceremonies to facilitate successful exploitation and equitable distribution of resources (Beals 1933; Swezey 1975; Swezey and Heizer 1977).

Trade was important, with goods traveling from the coast and valleys up into the Sierra Nevada, and beyond to the east. Coastal items like shell beads, salmon, salt, and Foothill pine nuts were traded for resources from the mountains and farther inland, such as bows and arrows, deer skins, and sugar pine nuts. In addition, obsidian was imported from the north (Wilson and Towne 1978).

Nisenan built residential dwellings, ceremonial structures, semi-subterranean sweat lodges, and menstruation huts (Wilson and Towne 1978). The typical hill and mountain dwelling was the conical bark house made by overlapping three or four layers of bark with no interior support. A thatched house was used at lower elevations, consisting of a conical framework of poles that was covered by brush, grass, or tules. Semisubterranean earth lodge roundhouses were also built by hill and mountain groups and used for ceremonial gatherings, assemblies, local feasts, and for housing visitors (Beals 1933; Levy 1978).

Flaked and ground stone tools were common among the Nisenan and included knives, arrow and spear points, club heads, arrow straighteners, scrapers, rough cobble and shaped pestles, bedrock mortars, grinding stones (metates), pipes, charms, and short spears (Barrett 1917; Beals 1933; Voegelin 1942; Wilson and Towne 1978). Beals (1933) also noted that certain colored stone points were considered lucky and could be traded for four or five other projectile points. In addition, obsidian was highly valued and imported. Nisenan informants stated that obsidian only came from a place to the north, outside of Nisenan territory (Littlejohn 1928). Littlejohn (1928) also noted that soapstone was used for bowl mortars, although informants of Wilson and Towne (1978) claimed that neither they nor their ancestors made mortars.

Wood was used for a variety of tools and weapons, including both simple and sinew-backed bows, arrow shafts and points, looped stirring sticks, flat-bladed mush paddles, pipes, and hide preparation tools (Wilson and Towne 1978). Cordage was made from plant material and was used to construct fishing nets and braided and twined tumplines. Soaproot brushes were commonly used during grinding activities to collect meal or flour. Specialized food processing and cooking techniques included the grinding and leaching of ground acorn and buckeye meal; burning of umbelliferae, a plant with cabbage-like leaves, to obtain salt; and roasting various foods in earth ovens (Wilson and Towne 1978; d'Azevedo 1986). Both hill and valley groups used the bedrock mortar and pestle (both rough cobble and shaped) to grind acorns, pine nuts, seeds, other plant foods, and meat. A soaproot brush was used to sweep ground meal into mortar cups and collect flour. Fist-sized heated stones were used to cook or warm liquid-based foods such as acorn gruel and pine nut meal. Whole acorns were stored in granaries and pine nuts were stored in large pine bough covered caches (Wilson and Towne 1978).

Nisenan groups managed many wild plants, primarily by controlled burning, which removed underbrush and encouraged growth of edible grasses, seed producing plants, and other useful plant resources (e.g., basketry materials) (Blackburn and Anderson 1993). The use of fire for environmental modification and as an aid in hunting is frequently mentioned in the ethnographic literature relating to the Nisenan. Littlejohn (1928) noted that the lower foothills in the Valley oak zone were thickly covered with herbaceous vegetation that was annually burned by the Nisenan to remove and limit its growth while facilitating the growth of oaks for harvesting acorns. The annual fires destroyed seedlings but did not harm established oak trees. Beals (1933) also noted that the Nisenan regularly burned the land, primarily for the purpose of driving game, and consequently created stands of timber that were much more open than currently exist in the area. Beals (1933:363) informants stated that before their traditional burning regimes were halted by Euro-Americans, "it was often a mile or more between trees on the ridges." In addition to removing underbrush, improving travel conditions, and facilitating plant growth, burning may also have improved areas of deer forage, potentially altering migratory patterns of deer populations by lessening their need to seek fresh forage on a seasonal basis (Matson 1972).

Nisenan used baskets for a variety of tasks, including storage, cooking, serving, and processing foods, traps, cradles, hats, cages, seed beaters, and winnowing trays. Basket manufacturing techniques included both twining and coiling, and baskets were decorated with a variety of materials and designs. Other woven artifacts include tule matting and netting made of milkweed, sage fibers, or wild hemp (Wilson and Towne 1978).

Like most indigenous cultures, Nisenan groups had a holistic epistemology; a theorem of holistic knowledge in which any subject is a composite of all other subjects, and every aspect of knowledge is interconnected. The Nisenan world contained many ineffable supernatural beings and spirits, and all natural objects were endowed with potential supernatural powers (Beals 1933).

Stories about world creation and human origins vary amongst different ethnographic accounts as well as amongst different groups. Some expressed the idea that the world has always existed, but in different forms; some told that everything was made by someone, and that all birds and animals were once human; others told of a flood that killed the first people because they were bad (Kroeber 1929). In creation stories there was a culture hero, usually who created earth, and Coyote the trickster, who introduced death and conflict to a once utopian existence (Beals 1933; Kroeber 1929).

Ethnographic accounts of specific religious practices were stymied by several factors, including reluctance on behalf of Nisenan groups to discuss their religion, many variations in cultural practices, and disease epidemics during contact period. However, certain central themes were identified by Gifford (1927), who divided Nisenan religious ceremonies into three chronological strata: indigenous dances (early); northern-influenced dances of the Kuksu or god-impersonating cult performed in dance houses; and a Kuksu religious revival circa 1870 adapted to the Ghost Dance religion.

The Kuksu cult was the major religious system in Central California and was practiced by the Nisenan in various forms. Cult membership was reserved for initiated few, who danced disguised as the spirits of deities (Heizer 1962). Other religious ceremonies included a mourning ceremony, an annual ritual for the dead performed in the fall in which dancers covered their faces with ash and wailed and cried around a central brush pyre (Gifford 1927). This ceremony was observed and documented among mountain groups, but little is known about whether valley and foothills groups performed similar rites (Wilson and Towne 1978). Other ceremonial dances included a Kamin dance celebrated in late March to mark the beginning of spring; the Weda or Flower dance of late April; a Dappe or Coyote Dance; and a Nemulsa or "Big Festival" to which people came from a distance to celebrate (Gifford 1927).

The Nisenan had two types of doctors or shamans, curing and religious, both of whom performed their rituals publicly in the village dance house (Wilson and Towne 1978). The curing shamans could be of either sex and possessed certain charms and medicines. They diagnosed feeling and sucked out the area of pain to remove the offending object (such as dead fly, a small bone, a blood clot), which was displayed, and then buried immediately. Curing shamans were only paid if they cured the afflicted patient (Wilson and Towne 1978). The religious shaman, or oshpe, represented the supernatural and was a dominant figure in dance house rituals. He gained control over spirits by dreams or esoteric encounters, and it was believed he could conjure up spirits and voices of the deceased (Wilson and Towne 1978).

The Spanish arrived on the central California coast in 1769 and missions to convert the native population, presidios (forts) and pueblos (towns), were established. Early contact with the first Spanish explorers to enter California was limited to the peripheries of Nisenan territory; they occurred mainly to the south on lands of the Miwok which had been explored by José Canizares in 1776, with only ephemeral explorations into Nisenan lands. There are no records of Nisenan groups being removed to the missions. They did, however, receive escapees from the missions, as well as pressure of displaced Miwok populations on their southern borders. The first known occupation by Euro-Americans was marked by American and Hudson Bay Company fur trappers in the late 1820s establishing camps in Nisenan territories. This occupation was thought to have been peaceful (Wilson and Towne 1978).

In 1833, a deadly epidemic (probably malaria) swept through the Sacramento Valley and had a devastating effect on Nisenan populations. Entire villages were lost, and surviving Nisenan retreated into the hills. An estimated 75 percent of their population was wiped out, and only a handful were left to face the gold miners and settlers who were soon to follow (Cook 1955). Captain John Sutter settled in Nisenan territory in 1839, and through force and persuasion he coerced most of the remaining Valley Nisenan to be on peaceful terms (Wilson and Towne 1978).

The mountain Nisenan groups encountered Europeans in their territory but were not adversely affected by the epidemics and early settlers. The discovery of gold, however, led to their territory being overrun within a matter of a few years. James Marshal's 1848 gold discovery was in the middle of Nisenan territory, and thousands of miners were soon living in the area. This dynamic led to widespread killing, destruction, and persecution of the Nisenan and their culture. The few survivors were relegated to working in agriculture, logging, ranching, or domestic pursuits (Wilson and Towne 1978). A native culture resurgence occurred around 1870 with influence from the Ghost Dance revival, but by 1890s the movement had all but ended in dissolution. By the time of the Great Depression, it was said that no living Nisenan could remember a time before White contact (Wilson and Towne 1978).

The turn of the 20th century was fraught with deplorable conditions for the surviving Nisenan populations, marked by low educational attainment, high unemployment, poor housing and sanitation, and prevalence of alcoholism. The 1960 U.S. census (California State Advisory Commission of Indian Affairs 1966 as cited in Wilson and Towne 1978:396) reported 1,321 Native Americans resided in the counties originally held as Nisenan territory, but none had tribal affiliation. Sacramento County listed 802 Native Americans, of which only four were known descendants of the Valley Nisenan. El Dorado, Placer, Yuba, and Nevada counties had several Nisenan families in the 1970s who are descended from mountain groups and could speak the language and retained knowledge of traditional lifeways (Wilson and Towne 1978).

A few people still practiced Nisenan customs through the turn of the 21st century, but the old ways have been largely lost. Despite the hardships on their people through the past few centuries, many modern Native American populations participate in pan-Indian activities and celebrations. Nisenan descendants continue to be active in social movements and organizations that seek to improve the Native American situation in the dominant America culture.

3.4 Regional History

The first Viceroy of New Spain, Antonio de Mendoza, commissioned maritime explorer Hernando de Alarcón to chart the Gulf of California and Colorado River in 1540. Alarcón and his crew became the first Europeans to reach Alta (Upper) California when they set foot on the banks of the Colorado River in what is now Imperial County. In 1542, Juan Rodriguez Cabrillo sailed north up the Pacific coast from Mexico in search of the Strait of Anián. Cabrillo and his crew, the first Europeans to explore the Alta California coast, visited San Diego Bay, Santa Catalina Island, and San Pedro Bay, and may have reached as far north as Point Reyes. In 1579, the English privateer Francis Drake visited Miwok villages north of San Francisco Bay. Sebastian Vizcaíno, sailing north from Mexico, charted Monterey Bay in 1602 (Starr 2005).

Spanish colonization of Alta California began in 1769 with the Portolá land expedition. Led by Captain Gaspar de Portolá and Father Junipero Serra, the expedition proceeded north from San Diego on foot to the Santa Clara Valley, where an advance party of scouts led by José Ortega became the first Europeans to observe San Francisco Bay. Spain subsequently established a string of 21 Franciscan missions, 4 presidios (forts), and 4 pueblos (towns) in coastal regions of Alta California (Starr 2005). In 1808, the explorer Gabriel Moraga led an expedition from San Jose pueblo into the Central Valley. Moraga named the valley's major rivers, including the Sacramento and San Joaquin, but made no attempt to establish missions, presidios, or pueblos in Alta California's interior (Avella 2003).

The Republic of Mexico achieved independence from Spain in 1821. A year later, Alta California became a territory of Mexico with its capital at Monterey. In 1827, the American fur trapper Jedediah Smith led a party associated with the Rocky Mountain Fur Company across the Mojave Desert to Southern California, north up the Central Valley, and east into Nevada, demonstrating the possibility of overland travel across the Sierra Nevada mountain range (Starr 2005).

During the 1830s the Mexican government confiscated mission lands and expelled Alta California's Franciscan friars. Former mission lands, along with unclaimed lands in the Sacramento and San Joaquin valleys, became granted to retired soldiers and other Mexican citizens. Vast swaths of Alta California's coastal regions and interior valleys became private ranchos, or cattle ranches. Three of the region's Spanish pueblos—Los Angeles, San Jose, and Sonoma—survived as Mexican towns. Other settlements developed around presidios at San Francisco, Monterey, Santa Barbara, and San Diego. Many rancho owners maintained residences in town, while hired vaqueros and unpaid Native American laborers worked on ranchos to produce cow hides and tallow (cow fat) prized by foreign merchants (Starr 2005).

After 1821, the Mexican government began welcoming non-Hispanic immigrants to Alta California. Hundreds of Americans, British, and other foreigners arrived to establish trading relationships; others became naturalized Mexican citizens and applied for land grants. John Sutter, a German-speaking immigrant from Switzerland, built a fort at the confluence of the Sacramento and American rivers in 1839 and petitioned the Mexican governor of Alta California for a land grant; he received nearly 49,000 acres along the Sacramento River in 1841 (Hurtado 2006).

Following the Mexican-American War of 1846–1848, Mexico ceded Alta California to the United States. Under the Treaty of Guadalupe Hidalgo, Congress agreed to honor the property rights of former Mexican citizens living within the new boundaries of the United States. That meant recognizing Alta California's Mexican land grants. In 1851, Congress passed the California Land Act creating the Board of Land Commissioners to determine the validity of the individual grants, placing the burden of proof on patentees. The Board, with assistance from U.S. courts, confirmed most of California's Mexican land grants in subsequent decades (Starr 2005).

In January 1848, one of John Sutter's hired laborers, James Marshall, discovered gold in the flume of a lumber mill at Coloma on the South Fork of the American River. News of Marshall's discovery spread around the world, leading to the California Gold Rush of 1849. Tens of thousands of prospectors arrived in the Sierra Nevada foothills, prompting the creation of hundreds of small mining camps along streambeds. The cities of Marysville, Sacramento, and Stockton sprang up in the Sacramento and San Joaquin valleys as supply centers for the mines; San Francisco became California's largest city and the focal point for Gold Rush economic activity. In 1850, following a year of rapid growth, Congress admitted California as the 31st U.S. state (Starr 2005). In the following decades, federal surveyors arrived in California to stake out 36-square-mile townships and 1-square-mile sections on California's unclaimed public lands. At general land offices, buyers paid cash for public lands. After 1862, many filed homestead applications to obtain 40, 80, and 160-acre tracts at low upfront costs in exchange for establishing farms (Robinson 1948).

3.5 Local History

Towns and camps developed in the Sierra foothills to supply goods and services to miners in the area. In the project vicinity these included the Mormon Tavern stage stop, constructed in 1849, and the town of Clarksville, located northeast of the project area. The Carson Road provided access between Sacramento and Placerville and continued over the Sierra Nevada to Carson City, Nevada.

Placerville became the El Dorado County seat in 1857 and the Mormon Tavern stage stop became a remount station for the Central Overland Pony Express in 1860. Clarksville was located one half mile east of Mormon Tavern on the Placerville Road and was originally known as Clarkson's Village. When a post office was established there in 1855, the name was changed to Clarksville. Early settlers in Clarksville included the Tong family who operated a hotel and restaurant known as Railroad House beginning in 1855. By 1866 Clarksville had a population of several hundred and the surrounding area had been settled by ranchers and dairy farmers (Peak & Associates 1992).

In 1866 the Southern Pacific Railroad completed a railroad line from Sacramento and Folsom to Placerville via Latrobe, located south of Clarksville. The rail line bypassed Clarksville, greatly reducing the freight and traffic that formerly went through Clarksville on the Placerville Road on its way to the silver mines around Carson City. The completion of the transcontinental railroad line in 1869 via Auburn further reduced use of the Placerville Road through Clarksville. In the early 20th century, U.S. Highway 50 went through Clarksville, but it was later re-routed around Clarksville. More recently, the development of El Dorado Hills to the west of Clarksville resulted in the closure of all commercial enterprises in Clarksville. Currently, only a few residences remain in Clarksville (Peak & Associates 1992).

4.0 METHODS

4.1 Personnel Qualifications

Registered Professional Archaeologist (RPA) Christa Westphal, who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historical archaeology, was responsible for this cultural resource investigation. Associate Archaeologist Erica Ramirez-Schroeder conducted the fieldwork. Ms. Ramirez-Schroeder and Ms. Westphal prepared the technical report. Lisa Westwood, RPA provided technical report review and quality assurance.

Christa Westphal, RPA is a Staff Archaeologist with more than 10 years of experience in California cultural resources management. She has experience in many aspects of archaeological fieldwork, laboratory, and reporting. These include archaeological survey, excavation, monitoring, artifact analysis, artifact collections management, graphics production, Geographic Information System analysis, CHRIS records searches, Native American Heritage Commission requests, preparation of California Department of Parks and Recreation (DPR) forms and author and contributor of technical reports. She holds a B.A. and M.A. in Anthropology.

Erica Ramirez-Schroeder is an Associate Archaeologist with 4 years of experience in California cultural resources management. She has experience in many aspects of archaeological fieldwork, laboratory, and reporting. These include archaeological survey, monitoring, artifact collection management, artifact analysis, CHRIS record searches, preparation of California Department of Parks and Recreation (DPR forms), and ground penetrating radar. She holds a B.A. in History and an M.A. in Cultural Resources Management.

Lisa Westwood, RPA has 29 years of experience and meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historical archaeology. She holds a B.A. in Anthropology and an M.A. in Anthropology (Archaeology). She is the Director of Cultural Resources for ECORP.

4.2 Records Search Methods

ECORP requested a records search for the Project Area at the North Central Information Center (NCIC) of the CHRIS at California State University, Sacramento on September 29, 2023 (NCIC File No.: ELD-23-83; Appendix A). The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the Proposed Project Area, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. NCIC staff completed and returned the records search to ECORP on September 29, 2023.

In addition to the official records and maps for archaeological sites and surveys in El Dorado County, the following references were also reviewed: Built Environment Resource Directory (OHP 2022); Historic Property Data File for El Dorado County (OHP 2012); the National Register Information System (National Park Service [NPS] 2023); Office of Historic Preservation, California Historical Landmarks (CHL; OHP 2023); CHL (OHP 1996 and updates); California Points of Historical Interest (OHP 1992 and updates); Directory of Properties in the Historical Resources Inventory (1999); Caltrans Local Bridge Survey (California

Department of Transportation [Caltrans] 2019); Caltrans State Bridge Survey (Caltrans 2018); and *Historic Spots in California* (Kyle 2002).

Other references examined include a RealQuest Property Search and General Land Office (GLO) land patent records (Bureau of Land Management [BLM] 2023). Maps reviewed include the:

- 1856 BLM GLO Plat map for Township 9 North, Range 8 East;
- 1891 USGS Sacramento, California topographic quadrangle map (1:125,000 scale);
- 1892 USGS Sacramento, California topographic quadrangle map (1:125,000 scale);
- 1893 USGS Sacramento, California topographic quadrangle map (1:125,000 scale); and
- 1941 (photorevised 1957) USGS Folsom, California topographic quadrangle map (1:62,500 scale).

ECORP reviewed aerial photographs taken in 1949, 1952, 1953, 1962, 1966, 1971, 1981, 1984, 1993, 2005, 2009, 2010, and every two years between 2010 and 2020 for any indications of property usage and built environment.

ECORP conducted a search for a local historical registry; however, El Dorado County does not have a local historical registry available.

4.3 Sacred Lands File Coordination Methods

In addition to the records search, ECORP contacted the California Native American Heritage Commission (NAHC) on September 29, 2023 to request a search of the Sacred Lands File for the Project Area (Appendix B). This search determines whether the California Native American tribes within the Project Area have recorded Sacred Lands because the Sacred Lands File is populated by members of the Native American community with knowledge about the locations of tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the Native American community regarding TCRs, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal laws. The lead agencies do not delegate government-to-government authority to any private entity to conduct tribal consultation.

4.4 Other Interested Party Consultation Methods

ECORP emailed letters to the El Dorado County Historical Museum and El Dorado County Historical Society/Fountain and Tallman Museum on September 29, 2023 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area (Appendix A).

4.5 Field Methods

ECORP subjected the APE to an intensive pedestrian survey on October 10, 2023 under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983) using 15-meter transects (Figure 2). ECORP expended one person-day in the field. At the time, ECORP examined the ground surface for indications of surface or subsurface cultural resources and inspected the general

Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Cultural_Resources\John Adams SUrvey Coverage_20231011.aprx - JAAS Survey Coverage 20231206 (kedwards - 12/6/2023)

Map Date: 12/6/2023

Sources: Esri Imagery, Vivid Advanced, MAXAR (2022)

Figure 2. Survey Coverage

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2023-195 John Adams Academy

morphological characteristics of the ground surface for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, ECORP examined the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. ECORP did not conduct subsurface investigations or artifact collections during the pedestrian survey.

Standard professional practice requires that all cultural resources encountered during the survey be recorded using DPR 523-series forms approved by the California OHP. The resources are usually photographed, mapped using a handheld Global Positioning System receiver, and sketched as necessary to document their presence using appropriate DPR forms.

5.0 RESULTS

5.1 Records Search

The records search consisted of a review of previous research and literature, records on file with the NCIC for previously recorded resources, and aerial photographs and maps of the vicinity.

5.1.1 Previous Research

A total of 12 previously cultural resources investigations have been conducted within 0.5-mile of the Project Area, covering approximately 95 percent of the total surrounding the Project Area within the records search radius. Of the 12 studies completed within the 0.5-mile radius, 2 included the entire Project Area (Table 1). Appendix A lists the reports located within 0.5-mile of the Project Area. These studies revealed the presence of Native American resources, including a habitation site, a lithic scatter, and bedrock mortars, and the presence of historic-period resources, including sites associated with mining and farming/ranching activities The previous studies were conducted in 1976 and 2019.

Table 1. Previous Cultural Studies within the Project Area

Report Number	Author(s)	Report Title	Year
9576	James N. Snoke	El Dorado Hills Sewage Treatment Facility Expansion	1976
1330	Ric Windmiller	Creekside Village, Cultural Resources Inventory and Evaluation, El Dorado Hills, El Dorado County, California	2019

The results of the records search indicate that the entire Project Area has been previously surveyed for cultural resources. Windmiller (2019) completed a pedestrian survey in 2018; therefore, ECORP resurveyed the Project Area. By the time this report has been reviewed by the California Office of Historic Preservation, it will have been 5 years since the Project Area was surveyed by Windmiller. ECORP completed the survey of the Project Area to ensure timely completion of the Project.

The records search also determined that 25 previously recorded pre-contact and historic-era cultural resources are located within 0.5-mile of the Project Area (Table 2). Of these, 7 are believed to be associated with Native American occupation of the vicinity, 16 are historic-era sites associated with early European-American ranching and mining activities, and 1 site contains both historic-period and pre-contact components. There are no previously recorded cultural resources within the Project Area.

Table 2. Previously Recorded Cultural Resources within 0.5-mile of the Project Area

Site Number CA-ELD-	Primary Number P-9-	Recorder and Year	Age/Period	Site Description
891H	76	Peak and Associates 1988; Bennett et al. 1997	Historic	Rock Fence
69	157	Payen 1958; Payen and Davis 1958	Pre-contact	Petroglyphs and Lithic Scatter
785/H	873	Peak and Associates 1988; Lopez et al. 1999	Pre-contact and Historic	Bedrock Mortar and Lithic Scatter; Rock Wall and Ditch
786/H	874	Peak and Associates 1988; Ric Windmiller 1999	Historic	Farm/Ranch
886H	984	Bennett et al. 1997; Bennett and Lindström 1998	Historic	Farm/Ranch
–	990	Bennett et al. 1997; Bennett and Lindström 1998	Historic	Farm/Ranch
–	992	Bennett et al. 1995; Bennett et al. 1997;	Historic	Farm/Ranch
897	1005	Bennett et al. 1995; Atchley et al. 1999	Pre-contact	Lithic Scatter and Bedrock Mortars
913/H	1021	Bennett et al. 1995; Bennett et al. 1997;	Historic	Tailings
–	1044	Bennett et al. 1995; Bennett et al. 1997;	Historic	Brass Cap Marker
–	1133	Bennett et al. 1995; Bennett et al. 1997;	Historic	Mining Claim Marker
1272/H	1686	Bennett et al. 1995;	Historic	Foundation and Well
–	1693	Bennett et al. 1995;	Pre-contact	Isolated Projectile Point
3013	5657	Bennett et al. 1995;	Pre-contact	Bedrock Mortar
–	5666	Bennett et al. 1995;	Historic	Road
–	5667	Bennett et al. 1995;	Historic	Road
3016	6004	Ric Windmiller 2018	Pre-contact	Bedrock Mortar
–	6005	Ric Windmiller 2018	Historic	Mine Shaft
–	6006	Ric Windmiller 2018	Historic	Mine Shaft

Table 2. Previously Recorded Cultural Resources within 0.5-mile of the Project Area				
Site Number CA-ELD-	**Primary Number P-9-**	**Recorder and Year**	**Age/Period**	**Site Description**
3107H	6007	Ric Windmiller 2018	Historic	Ditch
3108H	6008	Ric Windmiller 2018	Historic	Placer Mine
–	6009	Ric Windmiller 2018	Historic	Trough
–	6010	Ric Windmiller 2018	Historic	Well
3109	6011	Ric Windmiller 2018	Pre-contact	Bedrock Mortar
3110	6012	Ric Windmiller 2018	Pre-contact	Bedrock Mortar

5.1.2 Records

The OHP's Built Environment Resource Directory for El Dorado County (dated August 2, 2022) did not include any resources within 0.5-mile of the Project Area (OHP 2023). The list includes one property in the City of El Dorado Hills, approximately 8.8 miles northwest of the Project Area.

The National Register Information System (NPS 2023) failed to reveal any eligible or listed properties within the Project Area. The nearest National Register property is the Southern Pacific Railroad Section Superintendent House (Property ID 08000501). It is located at 815 Oakdale Street in the City of Folsom, approximately 10.3 miles northwest of the Project Area.

ECORP reviewed resources listed as *California Historical Landmarks* (OHP 1996) by the OHP (2023) on October 2, 2023. The nearest listed landmark is No. 465 Shingle Springs, which is located approximately 11.3 miles northeast of the Project Area.

Historic Spots in California (Kyle 2002) mentions that El Dorado County was one of the original 27 counties in California. The word *El Dorado* derived from the Spanish word for *Gilded Man*, which stems from a Spanish legend about a mythological place covered in gold. The name was adopted for the county at the time of the first discovery of gold in the area by European-American pioneers. Kyle also mentioned Benjamin H. Latrobe, who was the civil engineer who assisted in the construction of the Placerville-Sacramento Valley Railroad in the southwestern part of the County. Latrobe Road, located immediately east of the Project Area, was most likely named after him.

Historic GLO land patent records from the BLM's patent information database (BLM 2023; Table 3) revealed that the northeastern quarter of the southwestern quarter of Section 24 was patented to James L.E. Cothrin on February 10, 1882. The entire Project Area was part of the 160-acre homestead that the federal government granted to Cothrin as part of the Land Act of 1820.

Table 3. GLO Land Patent Records

Patentee	Patent Date	Serial Number	Patent Type/Authority	Location
James L. E. Cothrin	February 10, 1882	CA1660.252	April 24, 1820; Sale-Cash Entry (3 Stat. 566)	NE ¼ SW ¼ of Section 24
James L. E. Cothrin	February 10, 1882	CACAAA 048954	April 24, 1820; Sale-Cash Entry (3 Stat. 566)	NE ¼ SW ¼ of Section 24

A RealQuest online property search for APNs 117-720-007-000, 117-720-004-000, and 117-720-009-000 revealed that the parcels consist of a total of 49.19 acres of land for parking lot and industrial land use; however, the Project Area only encompasses 5.88 acres. No other property history information was on record with RealQuest.

The Caltrans Bridge Local and State Inventories (Caltrans 2018, 2019) did not list any historic bridges within 0.5-mile of the Project Area.

According to Littlejohn (1928), the nearest Native American village is *Po Lun Kit* on the banks of Screech Owl Creek near Clarksville. The village is located approximately 2.5 miles north of the Project Area.

A review of the El Dorado County Archaeological Resources Directory conducted by the NCIC did not reveal any resources in the vicinity of the Project Area.

5.1.3 Map Review and Aerial Photographs

The review of aerial photographs and maps of the Project Area provides information on the past land use of the Project Area and the potential for buried archaeological sites. This information shows that the Project Area was primarily used for ranching purposes since at least 1949, as evidenced by an unimproved road that is visible in a 1949 aerial photograph. The following is a summary of the review of maps and photographs.

- The 1856 BLM GLO Plat map for Township 9 North, Range 8 East does not depict any structures or development within the Project Area.
- The 1891, 1892, and 1893 USGS Sacramento, California topographic quadrangle maps (1:125,000 scale) do not depict any structures or development within the Project Area. An unnamed northeast–southwest-oriented road is located east of the Project Area. The towns of White Rock and Cothrins are labeled on the maps northwest and southeast of the Project Area, respectively. The map depicts a northwest–southeast-oriented railroad, likely the Southern Pacific Railroad, to the west of the Project Area.
- The 1941 (photorevised 1957) USGS Folsom, California topographic quadrangle map (1:62,500 scale) and the 1954 (photorevised 1955) USGS Folsom SE, California topographic quadrangle map (1:24,000 scale) do not depict any structures or development within the Project Area. The maps depict a northwest–southeast-oriented road, likely Latrobe Road, immediately east of the Project Area.

- Aerial photographs from 1949, 1952, 1953, 1961, 1962, 1966, 1971, 1981, and 1984 show that the Project Area is a vacant field. The photographs show an unimproved northwest–southeast-oriented road, likely a ranching road, within the eastern portion of the Project Area. The road parallels an improved road that corresponds with present-day Latrobe Road, east of the Project Area.
- An aerial photograph from 1993 shows a north–south-oriented ranching road along the northeastern boundary of the Project Area; it parallels Latrobe Road on its western side. An east–west-oriented road corresponding to present-day Investment Boulevard provides access from Latrobe Road to a large building and three parking lots. The road is located to the north and outside of the Project Area.
- An aerial photograph from 2005 shows the previously unimproved north–south-oriented ranching road adjacent to and west of Latrobe Road as unchanged compared to the 1993 aerial photograph. A second ranching road segment oriented in an east–west alignment begins at an unimproved north–south-oriented road and continues westward to provide access to the fields southwest of the Project Area. The photograph also shows that the previous building and parking lots have expanded and the surrounding area has been developed into a commercial district, which corresponds to present-day El Dorado Hills Business Park. John Adams Academy is shown in its current location.
- All other aerial photographs from 2009 and every two years from 2010 to 2020 show the Project Area in its current state.

In sum, the Project Area has been a vacant field since at least the late 1940s, as evidenced by the unimproved road that first appeared in the 1949 aerial photograph. In addition, based on the records and information available to ECORP, John Adams Academy was constructed between 1993 and 2005.

5.2 Sacred Lands File Results

A search of the Sacred Lands File by the NAHC failed to indicate the presence of Native American cultural resources within the Project Area. A record of all correspondence is provided in Appendix B.

5.3 Other Interested Party Consultation Results

ECORP has not received any responses to the letters sent to the El Dorado County Museum and El Dorado County Historical Society/Fountain and Tallman Museum as of the date of the preparation of this document.

5.4 Field Survey Results

ECORP surveyed the Project Area for cultural resources on October 10, 2023. The Project Area is composed of an open, mostly undeveloped property containing short to medium-tall grasses and weeds (Figure 3). A north–south-oriented unimproved road is located on the eastern boundary of the Project Area and parallels Latrobe Road to the west of the Project Area (Figure 4). Another east–west-oriented unimproved road is located on the southern boundary of the Project Area (Figure 5). ECORP observed a few small piles of bulldozed rocks along the southern boundary of the Project Area. ECORP also observed aggregate concrete and a modern piece of equipment. The northern portion of the Project Area and parts of the southwestern portion that border the parking lots have been previously disturbed, as evidenced by the graded slopes and stockpile of sand (Figure 6). John Adams Academy is located with the El Dorado Hills Business Park, and the ground disturbance within the Project Area was likely construction material from the construction of the Academy. As a result of the survey, ECORP did not identify any archaeological material or surface manifestation indicating the presence of subsurface archaeological deposits.

Figure 3. Overview of Project Area (view east; October 10, 2023).

Figure 4. Overview of East–West-Oriented Unimproved Road (view east; October 10, 2023).

Figure 5. Overview of North–South-Oriented Unimproved Road (view north; October 10, 2023).

Figure 6. Overview of Graded Slope and Sand Stockpile along the Northern Boundary of the Project Area (view east; October 10, 2023).

6.0 MANAGEMENT CONSIDERATIONS

6.1 Conclusions

The records search and the 2023 field survey did not yield any historic-period or pre-contact cultural resources within the Project Area. Therefore, no known Historic Properties under Section 106 of the NHPA or Historical Resources under CEQA will be affected by the Proposed Project. Until the lead agencies concur with the identification and evaluation of eligibility of cultural resources, no Project activity should occur.

6.2 Likelihood for Subsurface Cultural Resources

The likelihood of buried pre-contact archaeological deposits within the Project Area is low. There exists a low potential for buried archaeological sites because the underlying geology of the Project Area is Mesozoic age, which predates the time of human occupation. Additionally, the soil's shallow depth-to-bedrock (i.e., bedrock starting at 14 to 18 inches) restricts the depth of cultural deposits and lowers the probability of any intact subsurface deposits. Overall, the Project Area has a low potential for subsurface pre-contact archaeological deposits.

6.3 Post-Review Discoveries

There always remains the potential for ground-disturbing activities to expose previously unrecorded cultural resources. Both CEQA and Section 106 of the NHPA require the lead agency to address any unanticipated cultural resource discoveries during Project construction. Therefore, ECORP recommends the lead agency adopt and implement the following mitigation measures to reduce potential adverse impacts to Less than Significant:

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:
    - If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
    - If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical

Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the El Dorado County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

The Lead Agency is responsible for ensuring compliance with these mitigation measures. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, *Mitigation Monitoring or Reporting*, "The public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

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LIST OF APPENDICES

APPENDIX A

Records Search Confirmation and Historical Society Coordination

California Historical Resources Information System

NORTH CENTRAL INFORMATION CENTER

AMADOR
EL DORADO
NEVADA
PLACER
SACRAMENTO
YUBA

California State University, Sacramento
6000 J Street, Folsom Hall, Suite 2042
Sacramento, California 95819-6100
phone: (916) 278-6217
fax: (916) 278-5162
email: ncic@csus.edu

9/29/2023 NCIC File No.: ELD-23-83

Christa Westphal
ECORP Consulting, Inc.
2525 Warren Drive
Rocklin, CA 95677

Please note: I will be out of the office on PTO from 10/10/2023-10/27/2023. If you have a priority records search please submit request prior to 10/5/2023.

Re: John Adams Academy-Sports Field Expansion Project (2023-195)

The North Central Information Center (NCIC) received your records search request for the project area referenced above, located on the Folsom SE USGS 7.5' quad. The following reflects the results of the records search for the project area and a ½-mi radius.

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ custom GIS maps ☒ GIS data

Recorded resources within project area: Recorded resources outside project area, within radius:	None See list below
Known reports within project area: Known reports outside project area, within radius:	9576 13330 See list below

Resource Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed/NA

Resource Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed/NA

Resource Digital Database Records: ☒ enclosed ☐ not requested ☐ nothing listed/NA

Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed/NA

Report Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed/NA

Report Digital Database Records: ☒ enclosed ☐ not requested ☐ nothing listed/NA

Resource Record Copies: ☒ enclosed ☐ not requested ☐ nothing listed/NA

Report Copies: ☒ enclosed ☐ not requested ☐ nothing listed/NA

Built Environment Resources Directory: ☐ enclosed ☒ not requested ☐ nothing listed/NA

Archaeological Resources Directory:	☒ enclosed	☐ not requested	☐ nothing listed/NA
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed/NA
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Historical Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Local Inventories:	☐ enclosed	☐ not requested	☒ nothing listed/NA
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Shipwreck Inventory:	☐ enclosed	☒ not requested	☐ nothing listed/NA
Soil Survey Maps:	☐ enclosed	☒ not requested	☐ nothing listed/NA

Please forward a copy of any resulting reports and resource records from this project to NCIC as soon as possible. The lead agency/authority and cultural resources consultant should coordinate sending documentation to NCIC. Digital materials are preferred and can be sent to our office via our file transfer system. Please contact NCIC for instructions. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, it is possible that not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the records search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Sincerely,

Paul Rendes, Coordinator
North Central Information Center

Recorded resources outside project area, within radius:

PrimCo	PrimNo
09	000076
09	000157
09	000873
09	000874
09	000984
09	000990
09	000992
09	001005
09	001021
09	001044
09	001133
09	001686
09	001693
09	005657
09	005666
09	005667
09	006004
09	006005
09	006006
09	006007
09	006008
09	006009
09	006010
09	006011
09	006012

Known reports outside project area, within radius:

DocNo
000506
002588
002963
003592
003638
003767
007279
009053
009570
013064

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
000506		1988		Cultural Resource Assessment of the Manikas Property, El Dorado County, California	Peak & Associates, Inc.	09-000076, 09-000077, 09-000873, 09-000874, 09-000875, 09-000876
002588		2001	Windmiller, Ric	A Cultural Resource Survey and Assessment of the Latrobe and White Rock Road Widening Project El Dorado County, California	Foothill Archaeological Services	09-000809

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
002963		1997	Susan Lindstrom	Heritage Resource Inventory Valley View Specific Plan EIR 2038-acre Parcel Near El Dorado Hills, CA, El Dorado County Volume 1 Report; A 33% Sample Archaeology Survey Confidential Appendix	Consultant	09-000070, 09-000076, 09-000077, 09-000168, 09-000873, 09-000874, 09-000875, 09-000876, 09-000950, 09-000951, 09-000952, 09-000953, 09-000954, 09-000955, 09-000956, 09-000957, 09-000958, 09-000959, 09-000960, 09-000961, 09-000962, 09-000963, 09-000964, 09-000965, 09-000966, 09-000967, 09-000968, 09-000969, 09-000970, 09-000971, 09-000972, 09-000973, 09-000974, 09-000975, 09-000976, 09-000977, 09-000978, 09-000979, 09-000980, 09-000981, 09-000982, 09-000983, 09-000984, 09-000985, 09-000986, 09-000987, 09-000988, 09-000989, 09-000990, 09-000991, 09-000992, 09-000993, 09-000994, 09-001001, 09-001002, 09-001003, 09-001004, 09-001005, 09-001006, 09-001007, 09-001008, 09-001009, 09-001010, 09-001011, 09-001012, 09-001013, 09-001014, 09-001015, 09-001016, 09-001017, 09-001018, 09-001019, 09-001020, 09-001021, 09-001022, 09-001023, 09-001024, 09-001025, 09-001026, 09-001027, 09-001028, 09-001029, 09-001030, 09-001031, 09-001032, 09-001033, 09-001034, 09-001035, 09-001036, 09-001037, 09-001038, 09-001039, 09-001040, 09-001041, 09-001042, 09-001043, 09-001044, 09-001045, 09-001046, 09-001047, 09-001048, 09-001049, 09-001050, 09-001051, 09-001052, 09-001053, 09-001054, 09-001055, 09-001056, 09-001057, 09-001058, 09-001059, 09-001060, 09-001061, 09-001062, 09-001063, 09-001064, 09-001065, 09-001066, 09-001067, 09-001068, 09-001069, 09-001070, 09-001071, 09-001072, 09-001073, 09-001074, 09-001075, 09-001076, 09-001077, 09-001078, 09-001079, 09-001080, 09-001081, 09-001082, 09-001083, 09-001084, 09-001085,

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
						09-001086, 09-001087, 09-001088, 09-001089, 09-001090, 09-001091, 09-001092, 09-001093, 09-001094, 09-001095, 09-001096, 09-001097, 09-001098, 09-001099, 09-001100, 09-001101, 09-001102, 09-001103, 09-001104, 09-001105, 09-001106, 09-001107, 09-001108, 09-001109, 09-001110, 09-001111, 09-001112, 09-001113, 09-001114, 09-001115, 09-001116, 09-001117, 09-001118, 09-001119, 09-001120, 09-001121, 09-001122, 09-001123, 09-001124, 09-001125, 09-001126, 09-001127, 09-001128, 09-001129, 09-001130, 09-001131, 09-001132, 09-001133, 09-005656, 09-005657, 09-005658, 09-005659, 09-005660, 09-005661, 09-005662, 09-005663, 09-005664, 09-005665, 09-005666, 09-005667, 09-005668, 09-005669, 09-005670
003592		2006	Jensen, Sean	Archaeological Inventory Survey Carson Creek Developmenet Project, c. 394 acres El Dorado County, CA	Genesis Society	09-003424
003638		1983	R. Gerry and M. Peak	Intensive Cultural Resource Assessment Of A 30 Percent Sample of the Proposed El Dorado Hills Business Park	Peak & Associates, Inc	09-000168, 09-001592, 09-001593, 09-001594
003767		1995	Lindstrom, Susan	Heritage Resource Inventory Carson Creek Specific Plan EIR 710-Acre Parcel Near El Dorado Hills, California, El Dorado County 50% Sample Archaeological Survey	Consulting Archaeologist	09-001685, 09-001686, 09-001687, 09-001688, 09-001689, 09-001690, 09-001691, 09-001692, 09-001693, 34-004323

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
007279		1999	Windmiller, Ric and Dan Osanna	Evaluation of Cultural Resources Valley View Specific Plan Area		09-000168, 09-000873, 09-000874, 09-000875, 09-000876, 09-001001, 09-001002, 09-001004, 09-001005, 09-001006, 09-001007, 09-001008, 09-001009, 09-001010, 09-001013, 09-001014, 09-001015, 09-001016, 09-001017, 09-001018, 09-001019, 09-001020, 09-001022, 09-001023, 09-001024, 09-001026, 09-001027, 09-001029, 09-001030, 09-001031, 09-001032, 09-001033, 09-001034, 09-001035, 09-001036, 09-001037, 09-001038, 09-001041, 09-001042, 09-003538, 09-003539, 09-003540, 09-003541
009053		1993		Cultural Resources Assessment of Alternative Sites for the Russell Ranch Project LSA Project #DCC201	LSA Associates, Inc	
009570		2003	Peak & Associates	Proposed El Dorado Hills Self-Storage Hillsdale Site, El Dorado Hills	Peak & Associates	
009576		1976	James N. Snoke	El Dorado Hills Sewage Treatment Facility Expansion	American River College	
013064		1959	L. Arthur Payen	Reports of the University of California Archaeological Survey, No. 48, Papers on California Archaeology: 70-73, Petroglyphs of Sacramento and Adjoining Counties California	Department of Anthropology, University of California, Berkeley	09-000157, 31-000128, 31-000163, 34-000240, 34-000243, 34-000254, 34-000255, 34-000256, 34-000258, 34-000261
013330		2019	Ric Windmiller	Creekside Village , Cultural Resources Inventory and Evaluation, El Dorado Hills, El Dorado County, CA	Windmiller Consulting, Inc.	09-006003, 09-006004, 09-006005, 09-006006, 09-006007, 09-006008, 09-006009, 09-006010, 09-006011, 09-006012, 09-006013

From:	Erica Ramirez
To:	museum@edcgov.us
Subject:	Cultural Resources Identification Effort: El Dorado County Historical Museum
Date:	Friday, September 29, 2023 1:25:00 PM
Attachments:	image001.gif El Dorado County Historical Museum Letter.pdf

Dear El Dorado County Historical Museum,

Attached is a letter and a map regarding the cultural resources study for John Adams Academy-Sports Field Expansion Project in El Dorado Hills, California.

We are seeking information parties that may have knowledge or concerns about possible cultural resources within or adjacent to the Project Area.

Feel free to reach out if you have questions and thank you for time.

Best,

Erica J. Ramirez-Schroeder (She/Her)
Associate Archaeologist

Federal Small Business
California Small Business for Public Works (SB-PW)
Rocklin Headquarters Office
2525 Warren Drive, Rocklin, California 95677
Ph: 916.782.9100 ◆ Cell: 916.824.5147
eramirez@ecorpconsulting.com ◆ www.ecorpconsulting.com
Rocklin ◆ Redlands ◆ Santa Ana ◆ San Diego ◆ Chico ◆ Santa Fe, NM ◆ Flagstaff, AZ

September 29, 2023

El Dorado County Historical Museum
104 Placerville Drive
Placerville, California
Email sent: museum@edcgov.us

RE: ***Cultural Resources Identification Effort for the*** **John Adams Academy-Sports Field Expansion Project, El Dorado County, California, T*ownship 9 North, Range 8 East and Section 24 (ECORP Project No. 2023-195)*****

Dear El Dorado County Historical Museum

ECORP Consulting, Inc. has been retained to assist in the planning of the development of the John Adams Academy-Sports Field Expansion Project. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the Project Area.

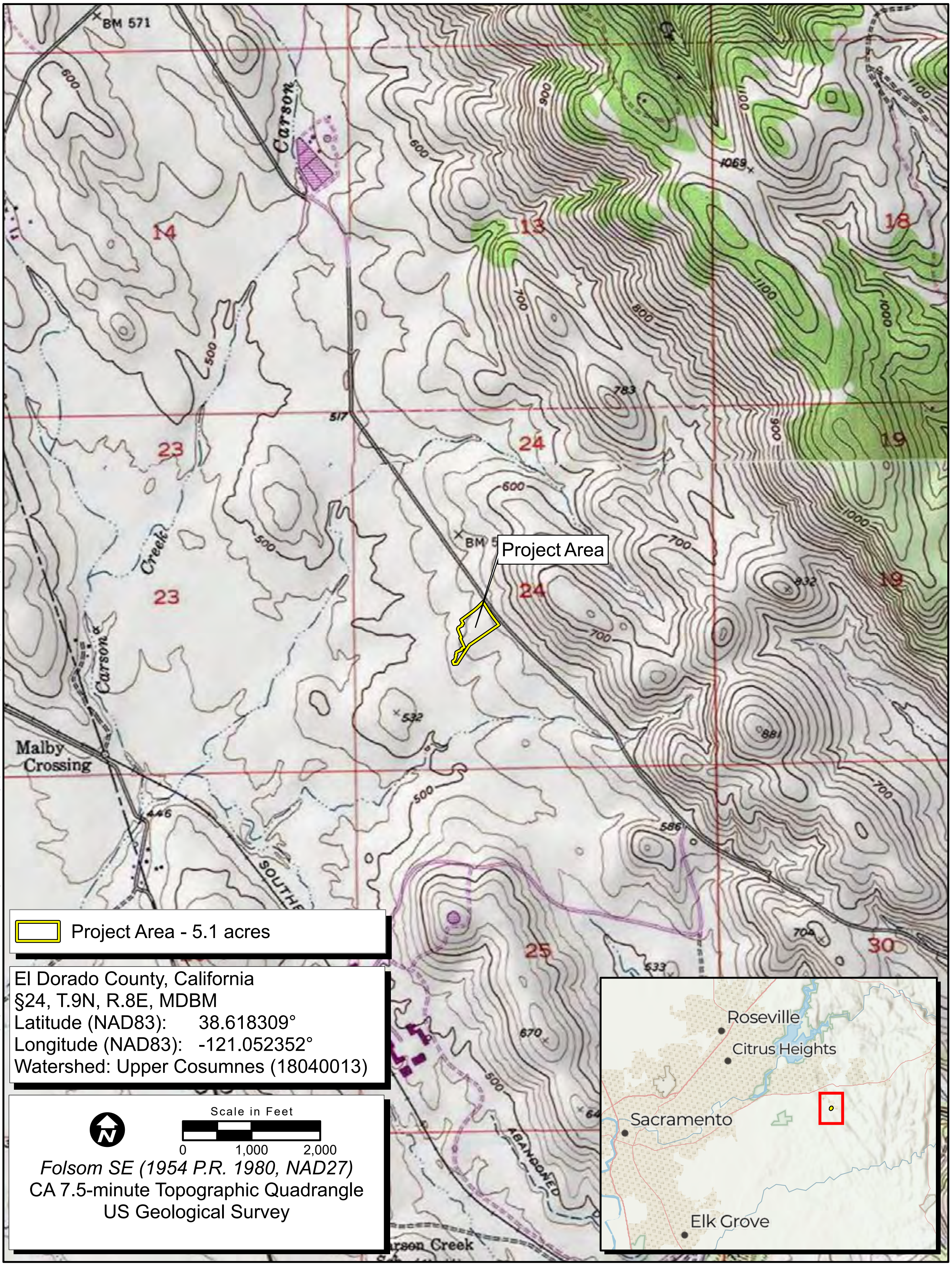
Included is a map showing the Project Area outlined. We would appreciate input on this undertaking from the historical society with concerns about possible cultural properties or potential impacts within or adjacent to the area of potential effect. If you have any questions or would like to respond to this inquiry, please contact me at (916) 782-9100 or eramirez@ecorpconsulting.com.

Thank you in advance for your assistance in our cultural resource management study.

Sincerely,

Erica Ramirez

Erica Ramirez
Associate Archaeologist



Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Location_Vicinity\John Adams Vicinity.aprx - John Adams LnV (mguidry - 9/28/2023)

Map Date: 9/28/2023

Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2023-195 John Adams Academy Sports

From:	Erica Ramirez
To:	fountaintallman524@gmail.com
Subject:	Cultural Resources Identification Effort: El Dorado County Historical Society and the Fountain and Tallman Museum
Date:	Friday, September 29, 2023 1:33:00 PM
Attachments:	image001.gif El Dorado County Historical Society Letter.pdf

Dear El Dorado County Historical Society and the Fountain and Tallman Museum,

Attached is a letter and a map regarding the cultural resources study for John Adams Academy-Sports Field Expansion Project in El Dorado Hills, California.

We are seeking information parties that may have knowledge or concerns about possible cultural resources within or adjacent to the Project Area.

Feel free to reach out if you have questions and thank you for time.

Best,

Erica J. Ramirez-Schroeder (She/Her)

Associate Archaeologist

Federal Small Business

California Small Business for Public Works (SB-PW)

Rocklin Headquarters Office

2525 Warren Drive, Rocklin, California 95677

Ph: 916.782.9100 ◆ Cell: 916.824.5147

eramirez@ecorpconsulting.com ◆ www.ecorpconsulting.com

Rocklin ◆ Redlands ◆ Santa Ana ◆ San Diego ◆ Chico ◆ Santa Fe, NM ◆ Flagstaff, AZ

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

September 29, 2023

El Dorado County Historical Society
Fountain and Tallman Museum
524 Main Street
Placerville, California
Email sent: fountaintallman524@gmail.com

RE: ***Cultural Resources Identification Effort for the* John Adams Academy-Sports Field Expansion Project, El Dorado County, California, T*ownship 9 North, Range 8 East and Section 24 (ECORP Project No. 2023-195)***

Dear El Dorado County Historical Society and Fountain and Tallman Museum,

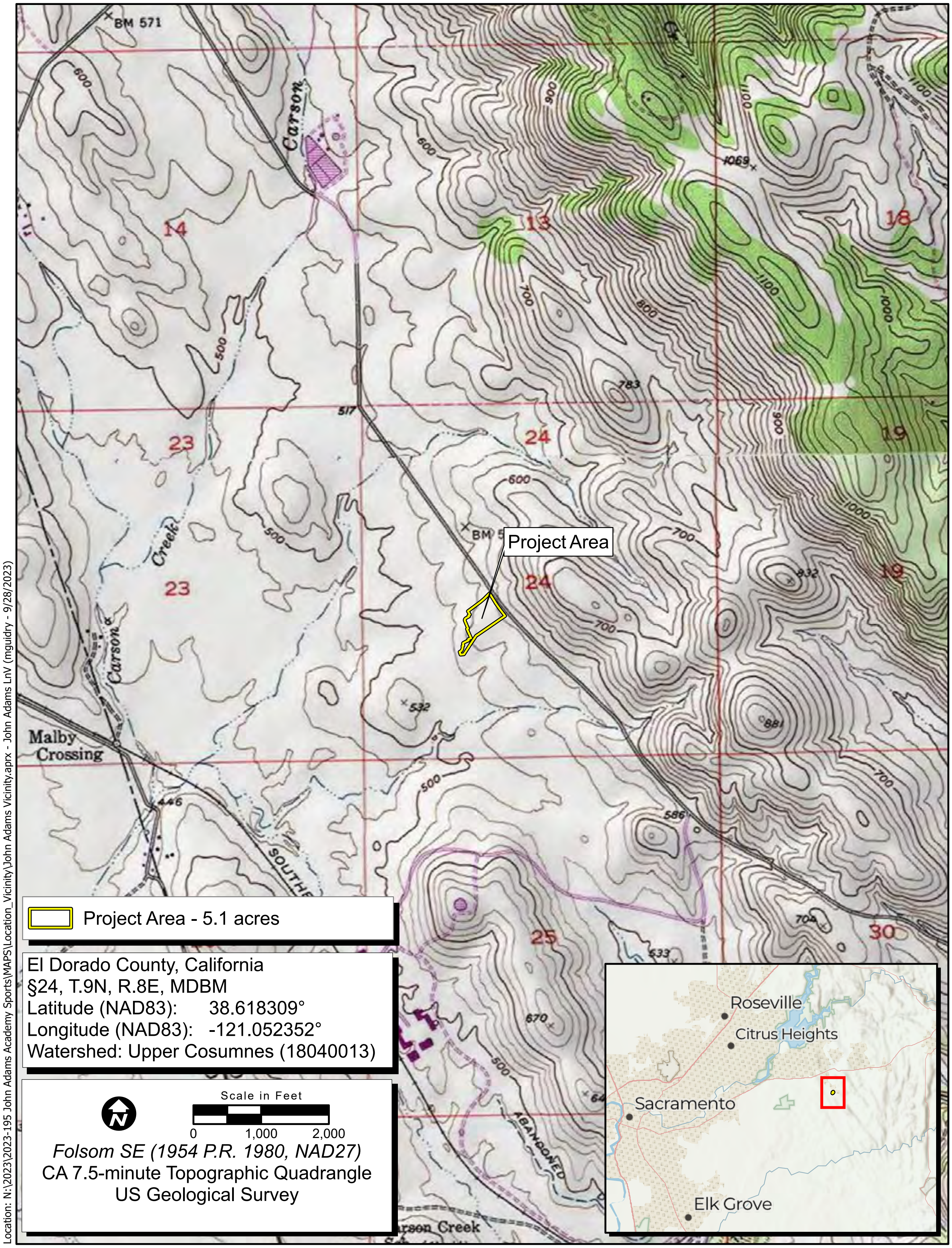
ECORP Consulting, Inc. has been retained to assist in the planning of the development of the John Adams Academy- Sports Field Expansion Project. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the Project Area.

Included is a map showing the Project Area outlined. We would appreciate input on this undertaking from the historical society with concerns about possible cultural properties or potential impacts within or adjacent to the area of potential effect. If you have any questions or would like to respond to this inquiry, please contact me at (916) 782-9100 or eramirez@ecorpconsulting.com.

Thank you in advance for your assistance in our cultural resource management study.

Sincerely,

Erica Ramirez
Associate Archaeologist



Map Date: 9/28/2023
Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

2023-195 John Adams Academy Sports

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

APPENDIX B

Sacred Lands File Coordination

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: John Adams Academy- Sports Field Expansion Project

County: El Dorado

USGS Quadrangle: Folsom SE, California 1954

Township: 9N Range: 8E Section: 24

Company/Firm/Agency: ECORP Consulting, Inc.

Contact Person: Erica Ramirez

Street Address: 2525 Warren Drive

City: Rocklin Zip: 95677

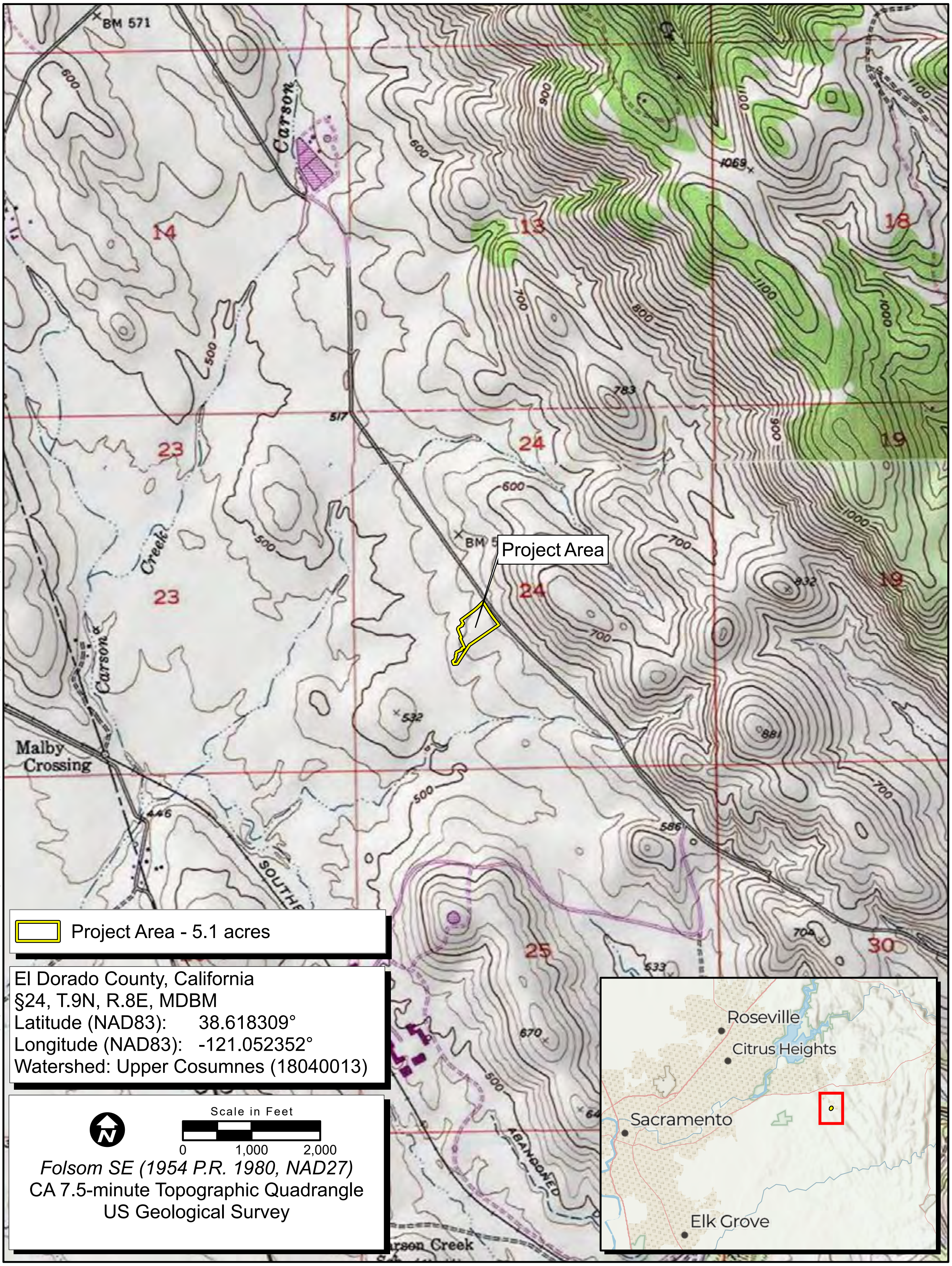
Phone: (916) 782-9100

Fax: (916) 782-9134

Email: eramirez@ecorpconsulting.com

Date: September 29, 2023

Project Description: Please see attached a map for reference



Location: N:\2023\2023-195 John Adams Academy Sports\MAPS\Location_Vicinity\John Adams Vicinity.aprx - John Adams LnV (mguidry - 9/28/2023)

Map Date: 9/28/2023
Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

2023-195 John Adams Academy Sports

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710

November 3, 2023

Erica Ramirez-Schroeder
EBI Consulting

Via Email to: eramirez@ecorpconsulting.com

Re: John Adams Academy- Sports Field Expansion Project, El Dorado County

Dear Ms. Ramirez-Schroeder:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
El Dorado County
11/3/2023

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
El Dorado	Colfax-Todds Valley Consolidated Tribe	N	Pamela Cubbler, Vice Chairperson	P.O. Box 4884 Auburn, CA, 95604	(530) 320-3943		pcubbler@colfaxrancheria.com	Maidu Miwok	Amador,El Dorado,Nevada,Placer,Sacramento,Yuba	3/28/2023
	Colfax-Todds Valley Consolidated Tribe	N	Clyde Prout, Chairperson	P.O. Box 4884 Auburn, CA, 95604	(916) 577-3558		c.prout@colfaxrancheria.com	Maidu Miwok	Amador,El Dorado,Nevada,Placer,Sacramento,Yuba	3/28/2023
	Colfax-Todds Valley Consolidated Tribe	N	CTVCT Preservation, Cultural Preservation Dept.	P.O. Box 4884 Auburn, CA, 95604	(530) 320-6032		ctvctpreservation@gmail.com	Maidu Miwok	Amador,El Dorado,Nevada,Placer,Sacramento,Yuba	3/28/2023
	Ione Band of Miwok Indians	F	Sara Dutschke, Chairperson	9252 Bush Street Plymouth, CA, 95669	(209) 245-5800		consultation@ionemiwok.net	Miwok	Amador,Calaveras,El Dorado,Sacramento,San Joaquin	
	Shingle Springs Band of Miwok Indians	F	James Sarmento, Executive Director of Cultural Resources	5281 Honpie Road Placerville, CA, 95667	(530) 698-1559		jsarmento@ssband.org	Maidu Miwok	Amador,El Dorado,Placer,Sacramento,Sutter,Yolo,Yuba	7/13/2023
	Shingle Springs Band of Miwok Indians	F	Kara Perry, Director of Site Protection	5281 Honpie Road Placerville, CA, 95667	(530) 363-5123		kperry@ssband.org	Maidu Miwok	Amador,El Dorado,Placer,Sacramento,Sutter,Yolo,Yuba	7/13/2023
	Shingle Springs Band of Miwok Indians	F	Regina Cuellar, Chairperson	5281 Honpie Road Placerville, CA, 95667	(530) 698-1400	(530) 387-8067	info@ssband.org	Maidu Miwok	Amador,El Dorado,Placer,Sacramento,Sutter,Yolo,Yuba	7/13/2023
	Shingle Springs Band of Miwok Indians	F	Krystal Moreno, TEK Program Manager				kmoreno@ssband.org	Maidu Miwok	Amador,El Dorado,Placer,Sacramento,Sutter,Yolo,Yuba	7/13/2023
	Shingle Springs Band of Miwok Indians	F	Malissa Tayaba, Vice Chairperson; Director of TEK	P.O. Box 1340 Shingle Springs, CA, 95682	(916) 468-2730		matayaba@ssband.org	Maidu Miwok	Amador,El Dorado,Placer,Sacramento,Sutter,Yolo,Yuba	7/13/2023
	Shingle Springs Band of Miwok Indians	F	Dustin Murray, Tribal Administrator	P.O Box 1340 Shingle Springs, CA, 95682	(530) 957-8925		dumurray@ssband.org	Maidu Miwok	Amador,El Dorado,Placer,Sacramento,Sutter,Yolo,Yuba	7/13/2023
	Tsi Akim Maidu	N	Grayson Coney, Cultural Director	P.O. Box 510 Browns Valley, CA, 95918	(530) 383-7234		tsi-akim-maidu@att.net	Maidu	Butte,El Dorado,Lassen,Nevada,Placer,Plumas,Sacramento,Sierra,Yuba	
	United Auburn Indian Community of the Auburn Rancheria	F	Gene Whitehouse, Chairperson	10720 Indian Hill Road Auburn, CA, 95603	(530) 883-2390	(530) 883-2380	bguth@auburnrancheria.com	Maidu Miwok	Amador,Butte,El Dorado,Nevada,Placer,Plumas,Sacramento,San Joaquin,Sierra,Solano,Sutter,Yolo,Yuba	
	Wilton Rancheria	F	Cultural Preservation Department,	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		cpd@wiltonrancheria-nsn.gov	Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	8/7/2023
	Wilton Rancheria	F	Dahlton Brown, Executive Director of Administration	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		dbrown@wiltonrancheria-nsn.gov	Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	8/7/2023
	Wilton Rancheria	F	Herbert Griffin, Executive Director of Cultural Preservation	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		hgriffin@wiltonrancheria-nsn.gov	Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	8/7/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed John Adams Academy- Sports Field Expansion Project, El Dorado County.

Record: PROJ-2023-005161
Report Type: List of Tribes
Counties: El Dorado
NAHC Group: All

APPENDIX C

Project Area Photographs

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PHOTOGRAPH RECORD

Primary #
HRI#
Trinomial

Page 1 of **1** **Project Name: John Adams Academy Project** **Year** 2023
Camera: iPhone 12 Lens Size: 35mm
Film Type and Speed: Digital Negatives Kept at: ECORP Consulting, Inc.

Mo.	Day	Subject/Description	View Toward	Accession #
10	10	Overview of Project Area's Southwestern Boundary	W	0752
10	10	Overview of Project Area's Southwestern Boundary with Parking Lot and Building in Background	N	0753
10	10	Overview of the Project Area's Western Boundary with John Adams Academy Parking Lot in the Background	W	0754
10	10	Overview of Project Area's Southwestern Boundary	W	0755
10	10	Overview of Ranching Road	N	0756
10	10	Overview of Project Area	NE	0757
10	10	Overview of Project Area's Northern Boundary	E	0774
10	10	Overview of Project Area's Northern Boundary	S	0775
10	10	Overview of Project Area's Northern Boundary	E	0776
10	10	Overview of the Ranching Road with Latrobe Road in the Background	E	0779
10	10	Overview of Ranching Road and Project Area	N	0780
10	10	Overview of Ranching Road within Project Area's Eastern Boundary	NW	0793
10	10	Overview of Project Area	W	0794
10	10	Overview of the John Adams Academy Parking Lot	N	0807
10	10	Overview of the John Adams Academy Parking Lot	W	0808


IMG_0752

IMG_0753

IMG_0754

IMG_0755

IMG_0756

IMG_0757

IMG_0774

IMG_0775

IMG_0776

IMG_0779

IMG_0780

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IMG_0794

IMG_0807

IMG_0808



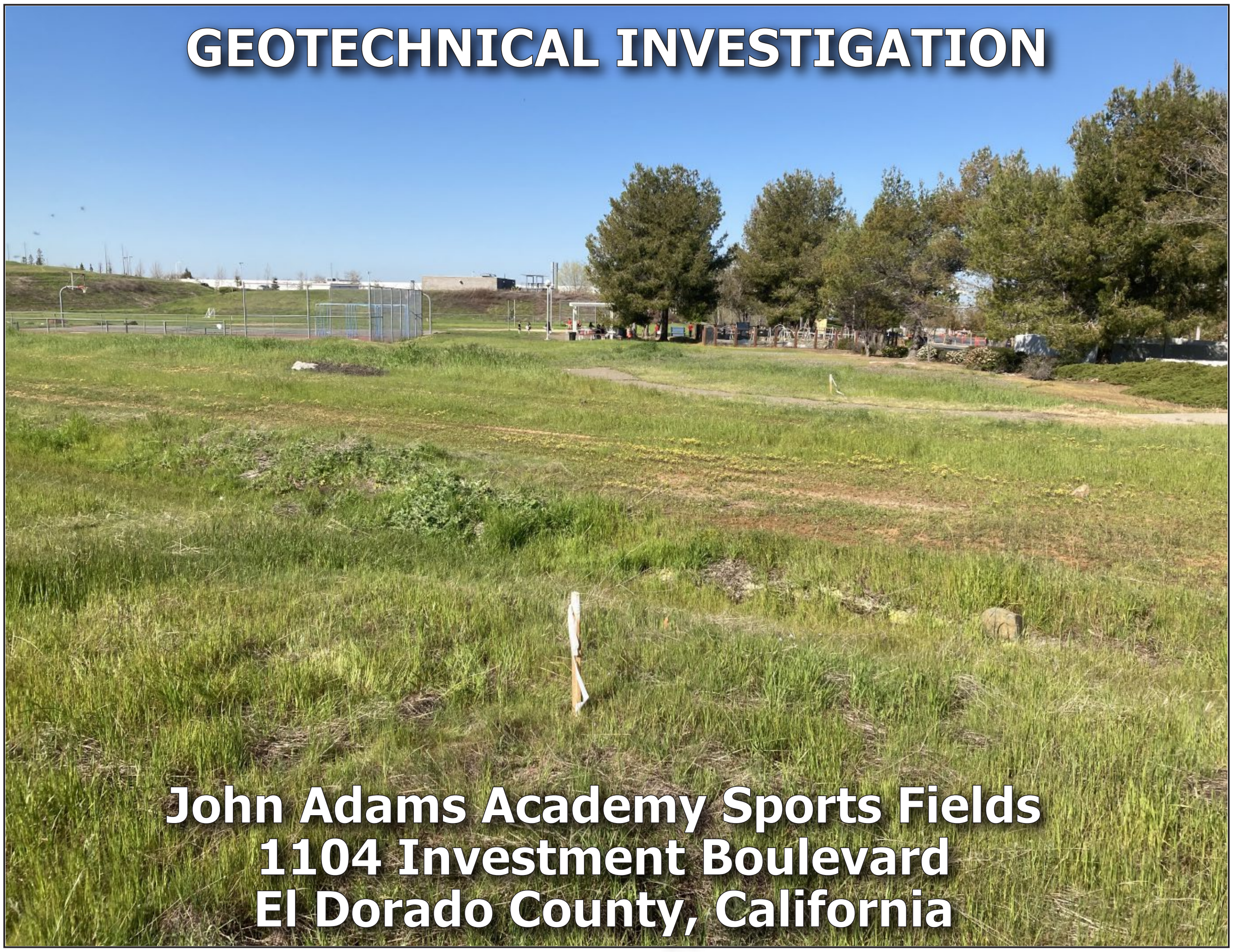







APPENDIX D
Geotechnical Investigation

GEOTECHNICAL INVESTIGATION



John Adams Academy Sports Fields
1104 Investment Boulevard
El Dorado County, California

PREPARED FOR:

JAA FACILITIES, LLC
1 SIERRA GATE PLAZA
ROSEVILLE, CALIFORNIA 95678

PREPARED BY:

GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DRIVE, SUITE 800
RANCHO CORDOVA, CALIFORNIA 95742

GEOCON PROJECT NO. S2573-05-01 **JUNE 2023**

Project No. S2573-05-01
June 21, 2023

VIA ELECTRONIC MAIL

JAA Facilities, LLC
c/o Bill Hagman
Project CM
1 Sierra Gate Plaza
Roseville, California 95678
Bill@ProjectCM.com

Subject: GEOTECHNICAL INVESTIGATION
JOHN ADAMS ACADEMY SPORTS FIELDS
1104 INVESTMENT BOULEVARD
EL DORADO COUNTY, CALIFORNIA

Mr. Hagman:

In accordance with authorization of our proposal (Geocon Proposal No. LS-23-42, dated February 22, 2023) and issuance of a Professional Services Agreement (dated March 24, 2023), we performed a geotechnical investigation for the proposed sports fields development project located at the John Adams Academy campus, 1104 Investment Boulevard, near El Dorado Hills in El Dorado County, California.

The accompanying report presents our findings, conclusions, and recommendations for the project as presently proposed. In our opinion, no adverse geotechnical conditions were encountered that would preclude development at the site provided recommendations of this report are incorporated into the design and construction of the project.

Please contact us if you have any questions regarding this report or if we may be of further service.

Respectfully submitted,

GEOCON CONSULTANTS, INC.

Alice M. Orton, PG
Project Geologist

Tom DeSimone, PG, CEG
Senior Geologist

REGISTERED PROFESSIONAL ENGINEER
JEREMY J. ZORNE
No. 2636
GEOTECHNICAL
STATE OF CALIFORNIA

Jeremy J. Zorne, PE, GE
Senior Engineer

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

GEOTECHNICAL INVESTIGATION

1.0 PURPOSE AND SCOPE

This report presents the results of our geotechnical investigation for the proposed sports fields development project located at the John Adams Academy campus, 1104 Investment Boulevard, near El Dorado Hills in El Dorado County, California. The approximate site location is depicted on the Vicinity Map, Figure 1.

The purpose of our investigation was to evaluate subsurface soil and geologic conditions at the site and provide conclusions and recommendations relative to the geotechnical aspects of designing and constructing the project as presently proposed.

To prepare this report, we performed the following scope of services:

- Performed a limited geologic literature review to aid in evaluating the geologic conditions present at the site. A list of referenced material is included in Section 9.0 of this report.
- Reviewed available design plans to select test pit and infiltration test locations.
- Performed a site reconnaissance to review project limits, determine equipment access, and mark out exploratory test pit locations for subsequent utility clearance.
- Notified subscribing utility companies via Underground Service Alert (USA) a minimum of two working days (as required by law) prior to performing exploratory excavations at the site.
- Observed the excavation of 10 test pits (TP1 through TP10) within the project limits to investigate subsurface conditions.
- Obtained representative soil samples from the test pits.
- Logged the test pits in accordance with the Unified Soil Classification System (USCS).
- Upon completion, backfilled the test pits with excavated soil and compacted using the backhoe bucket.
- Performed 11 hand-augered borings (IT1 through IT5 and IT7 through IT12) to depths ranging from approximately 3½ to 13 inches within potential stormwater basin/swale areas for the purposes of field infiltration testing.
- Performed field infiltration testing in each of the shallow borings using an Aardvark permeameter.
- Performed laboratory tests to evaluate pertinent geotechnical parameters.
- Prepared this report to summarize our findings, conclusions, and recommendations with respect to design and construction of the project.

Approximate locations of our test pits and infiltration tests are shown on the Site Plan, Figure 2, and Proposed Development Plan, Figure 3. Details of our field exploration program including test pit logs and infiltration test data sheets are presented in Appendix A. Details of our laboratory testing program and test results are summarized in Appendix B.

2.0 SITE AND PROJECT DESCRIPTION

The approximately 7.6-acre site is located on the southwest side of Latrobe Road, southeast of Investment Boulevard, near El Dorado Hills in El Dorado County, California, adjacent to the existing John Adams Academy campus (1102 and 1104 Investment Boulevard). The site generally consists of undeveloped land that is vegetated with seasonal grasses and brush. Site topography includes gentle slopes separated by natural drainages with ground surface elevations ranging from approximately 510 to 565 feet above mean sea level (MSL) (USGS, 2022). Site geology is mapped as Jurassic Copper Hill Volcanics characterized by lava flows and tuff (pyroclastics), underlain by Jurassic Salt Springs Slate (Gutierrez, 2011). Additional mapping by the California Geological Survey indicates the site to be underlain by Mesozoic age metavolcanic rocks (CGS, 2023, Jennings et al, 2010).

A garden area, baseball field, volleyball court, basketball court, tennis court, and lunch yard currently occupy the western portion of the site. Utilities within this area include surficial and piped stormwater drainage culverts, irrigation lines, light posts and associated subsurface electrical lines, and underground communication (undefined) lines. The eastern portion of the project area is undeveloped. The current site configuration is shown on the Site Plan, Figure 2.

The project consists of removing the existing facilities, where present, and constructing new sports fields and outdoor learning areas. Based on the preliminary site plan provided, the project will include three soccer fields, a basketball court, other hardcourts, a playground, an amphitheater, outdoor learning plazas, gardens, walkways and running trails, and stormwater retention ponds. Associated new buildings and structures will include a restroom/concession building, an amphitheater shell, bleacher seating, a sports scoreboard, patio covers, a trash enclosure, and lighting towers. The restroom/concession building, amphitheater shell, and trash enclosure are expected to be of concrete masonry (CMU) construction and will likely be supported on shallow foundations with interior concrete slab-on-grade floors. Based on site topography, we expect that site grading will include cuts or fills on the order of 5 to 8 feet. Other improvements will likely include underground utility infrastructure, retaining walls, concrete flatwork, and landscaping. The proposed site configuration is shown on the Proposed Development Plan, Figure 3.

3.0 SOIL AND GEOLOGIC CONDITIONS

We identified geologic and soil conditions by observing and sampling exploratory excavations and reviewing the referenced geologic literature (Section 9.0). Soil descriptions below include the USCS symbol where applicable. Site geology generally consists of surficial fill material related to prior development atop a relatively thin layer of Jurassic Copper Hill Volcanics consisting of mafic to felsic pyroclastic rocks, lava, and pillow lava (Gutierrez, 2011). In our test pits, the volcanic bedrock was completely weathered into a residual clay soil. The Copper Hill Volcanics Formation is underlain by Jurassic Salt Springs Slate.

3.1 Fill

We encountered fill material at the surface in Test Pits TP1 through TP4 to depths ranging from approximately 1½ to 3 feet. Fill generally consists of soft, brown, sandy clay (CL) and loose, yellowish brown clayey sand (SC) with varying amounts of clay, sand, gravel, cobbles, and boulders. Cobbles and boulders consist of angular pieces of slate and volcanic tuff, ranging in size up to 1½ feet in diameter. In addition, we encountered approximately 6 inches of aggregate base (AB) material immediately below surface soil in Test Pit TP4. We assume the fill material is generally associated with original mass grading of existing material within the western portion of the site. The AB in TP4 appears to be related to a nearby buried communications line which we did not encounter. Given the variable consistency, the fill is not suitable for direct support of structures and improvements. Remedial grading in the form of removal and re-compaction will be required during site grading. Specific recommendations are provided in this report.

3.2 Copper Hill Volcanics Formation

Below the fill in Test Pits TP1 through TP4 and at the surface in TP5 through TP10, we encountered Jurassic-age Copper Hill Volcanics (Jch on the Geologic Map, Figure 4) to depths ranging from a few inches to 12 feet, the maximum depth excavated. The Copper Hill Volcanics Formation as encountered in our test pits consists of completely weathered pyroclastic deposits and breccia which excavate as soft to medium stiff, damp to wet lean clay (CL) and loose, moist clayey sand (SC) with varying amounts of clay, sand, gravel, cobbles, and boulders to approximately 2 feet in diameter. In TP2, we encountered a moderately cemented layer at approximately 2½ feet.

3.3 Salt Springs Slate Formation

Below the Copper Hill Volcanics in Test Pits TP1 and TP3 through TP10, we encountered Salt Springs Slate Formation (Jss) to depths of approximately 3½ to 9½ feet. Onsite, the Salt Springs Slate consists of completely to moderately weathered, weak to strong, laminated to blocky slate which excavates as angular gravel and cobbles. Based on prior experience in the vicinity, the slate bedding is typically steeply dipping or near vertical. We encountered excavation refusal at depths of approximately 1½ to 4½ feet into the Salt Springs Slate Formation.

Soil conditions described in the previous paragraphs are generalized. The excavation logs included in Appendix A detail soil type, color, moisture, consistency, and USCS classification of the soils encountered at specific locations and elevations.

3.4 Infiltration Testing

We performed field infiltration tests using a SoilMoisture Corp. Aardvark Permeameter to evaluate infiltration characteristics within potential stormwater basin or swale areas. The infiltration tests were intended to provide preliminary infiltration data so that stormwater management methods for the project could be determined. The tests were generally performed as follows:

1. A total of 11 infiltration borings (IT1 through IT5 and IT7 through IT12) were excavated to depths of 3½ to 13 inches using a hand auger. Borings were terminated on refusal for coarse gravel or cobbles. The planned infiltration boring at IT6 was not excavated due to the presence of outcropping bedrock (slate) at this location.
2. Each infiltration boring was filled with water and allowed to pre-saturated for a minimum of 2 hours prior to infiltration testing.
3. For each test, the permeameter was set within the boring and arranged to allow a constant flow of water from a water jug set on a digital scale.
4. The original water weight was recorded and the system opened to maintain a constant head within the boring.
5. The change in water weight was measured at regular intervals until a stabilized infiltration rate was obtained.
6. Upon test completion, the borings were backfilled with excavated soil.

The approximate infiltration test locations are shown on the Site Plan, Figure 2, and Proposed Development Plan, Figure 3. Stabilized infiltration rates and the USCS classification of the soil types encountered at the infiltration test locations are summarized in Table 3.4. Infiltration test data sheets are included in Appendix A.

TABLE 3.4
SUMMARY OF INFILTRATION TEST RESULTS

Test ID	Approximate Test Depth (inches)	USCS Soil Classification at Test Depth	Stabilized Infiltration Rate (in/hr)	Factored Infiltration Rate[1] (in/hr)
IT1	6	Sandy Lean CLAY (CL) with gravel and cobbles	0.3	0.15
IT2	8	Sandy Lean CLAY (CL) with gravel and cobbles	0.2	0.1
IT3	9	Sandy Lean CLAY (CL) with gravel and cobbles	0.7	0.35
IT4	12	Sandy Lean CLAY (CL) with gravel and cobbles	0.1	0.05
IT5	12	Sandy Lean CLAY (CL)	0.4	0.2
IT6	TEST NOT PERFORMED	-	-	-
IT7	10	Sandy Lean CLAY (CL) with gravel	0.2	0.1
IT8	12	Sandy Lean CLAY (CL) with gravel	0.3	0.15
IT9	13	Sandy Lean CLAY (CL) with gravel	0.7	0.35
IT10	11	Sandy Lean CLAY (CL) with gravel	0.1	0.05
IT11	3½	Sandy Lean CLAY (CL) with gravel and cobbles	3.0	1.5
IT12	12	Sandy Lean CLAY (CL) with gravel	1.5	0.75
Notes: [1]A Factor of Safety of 2 was applied to account for soil variability.				

Soil infiltration rates are strongly influenced by soil type (percentage of fines), density, moisture content, and other factors. A small change in clay/silt content and/or compaction can greatly reduce or increase infiltration rates. Therefore, the factored infiltration rate includes a factor of safety of 2 to account for variability in the measured infiltration rates. Based on the factored infiltration rates, the soil at the majority of locations tested has a very slow infiltration rate. This should be considered in the stormwater basin design. Similar conditions are expected across the site due to the presence of clay soils and shallow bedrock.

4.0 GROUNDWATER

We encountered groundwater seeps at depths ranging from 4 to 12 feet in Test Pits TP2 and TP3 in the western portion of the site during our exploratory excavations performed on April 18 and 19, 2023, to a maximum depth of approximately 12 feet. The ground surface west of TP2 was wet (boggy) at the time of our site investigation. Historic aerial photographs (Google Earth, 2023) indicate this is a common condition following installation of a drainage basin on the adjacent property in 2015.

Depth-to-groundwater data are not available for the project area on the California Department of Water Resources (CADWR) *Sustainable Groundwater Management Act (SGMA) Data Viewer* (https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels), *Well Completion Report Map Application* (https://dwr.maps.arcgis.com/apps/webappviewer/index.html), or *GeoTracker* (https://geotracker.waterboards.ca.gov) websites. However, permanent groundwater depths in this region are typically greater than 50 feet. Therefore, the seeps encountered in our test pits are considered perched groundwater.

It should be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, temperature, and other factors. Depth to groundwater can also vary significantly due to localized pumping, irrigation practices, and seasonal fluctuations. Therefore, it is possible that groundwater may be higher or lower than the levels observed during our investigation. Additionally, perched groundwater may develop seasonally above cemented horizons and near the contact between soil and hard formational material. Recommendations related to perched groundwater/seepage are provided in this report.

5.0 SEISMICITY AND GEOLOGIC HAZARDS

5.1 Regional Active Faults / Surface Fault Rupture Hazard

The numerous faults in California include Holocene-active, pre-Holocene (Quaternary), and inactive (pre-Quaternary) faults. The criteria for these major groups were developed by the California Geological Survey (CGS, formerly known as the California Division of Mines and Geology) for the Alquist-Priolo Earthquake Fault Zone Program (CGS, 2018). By definition, a Holocene-active fault is one that has had surface displacement within Holocene time (about the last 11,700 years). A pre-Holocene fault has demonstrated surface displacement during Quaternary time (approximately the last 1.6 million years) but has had no known Holocene movement. Faults that have not moved in the last 1.6 million years are considered inactive.

Based on online mapping by the United States Geological Survey (USGS, https://www.usgs.gov/programs/earthquake-hazards/faults), the closest mapped Holocene-active and pre-Holocene (Quaternary) fault to the site is within the Foothills fault system, located approximately 9.6 miles northeast of the site.

The site is not within a state-designated Alquist-Priolo Earthquake Fault Zone for surface fault rupture hazards (CGS, 2023). No Holocene-active or pre-Holocene faults with the potential for surface fault rupture are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low.

5.2 Ground Shaking

The greater Sacramento region has a history of relatively low seismicity in comparison with more active seismic regions such as the San Francisco Bay Area or southern California. The two most commonly referred to earthquakes that resulted in some reported building damage in Sacramento are the Winters and Vacaville events in 1892. There are no reported occurrences of seismic-related ground failure in the Sacramento region due to earthquakes.

We used the United States Geological Survey (USGS) *Unified Hazard Tool* (https://earthquake.usgs.gov/hazards/interactive/) to determine the deaggregated seismic source parameters including controlling magnitude and fault distance. The USGS estimated modal magnitude is 6.3 and the estimated Peak Ground Acceleration (PGA) for the Maximum Considered Earthquake (MCE) with a 2,475-year return period is 0.2099g.

While listing PGA is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including frequency and duration of motion and soil conditions underlying the site. The site could be subjected to ground shaking in the event of an earthquake along the faults mentioned above or other area faults.

5.3 Liquefaction

Liquefaction is a phenomenon in which loose, saturated, cohesionless soil deposits located beneath the groundwater table lose strength when subjected to intense and prolonged ground shaking. The seismic excitation increases pore water pressure creating a buoyant effect of the loose soil. When liquefaction occurs, building foundations may sink or tilt and differential ground settlement may occur. Other effects may include sand boils (ground loss) and lateral spreading if the liquefiable soil is located adjacent to a steep free face. The areas that have the greatest potential for liquefaction are those in which the water table is less than 50 feet below ground surface and the soils are predominantly clean, poorly graded sand deposits of loose to medium-dense relative density.

The site is not located in a currently established State of California Seismic Hazard Zone for liquefaction. Based on the subsurface conditions encountered at the site, including shallow bedrock and a lack of cohesionless soils in the top 50 feet, liquefaction is not a hazard for the site. Mitigation and specific design measures with respect to liquefaction are not necessary for the project.

5.4 Expansive Soil

Laboratory Plasticity Index (PI) and Expansion Index (EI) tests on selected near-surface soil samples indicate low plasticity and very low expansion potential (Appendix B). Mitigation and specific design measures with respect to expansive soil are not necessary for the project.

5.5 Soil Corrosion Screening

We performed pH, resistivity, chloride, and sulfate tests on representative soil samples to generally evaluate the corrosion potential of the soil with respect to proposed subsurface structures. These tests were performed in accordance with California Test Method (CTM) Nos. 643, 422, and 417. The results are presented in Table 5.5A and should be considered for design of underground structures.

TABLE 5.5A
SOIL CORROSION PARAMETER TEST RESULTS
(CALIFORNIA TEST METHODS 643, 417, AND 422)

Sample No.	Sample Depth (ft.)	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
TP4 BULK	0-4	6.5	3,220	2.8	13.2

Note: ppm = parts per million

Soil with a low pH (higher acidity) is considered corrosive as it can react with lime in cement to leach out soluble reaction products and result in a more porous and weaker concrete. Per Caltrans *Corrosion Guidelines* (Caltrans, 2021), soil with a pH of 5.5 or lower may be corrosive to concrete or steel in contact with the ground. Based on the laboratory pH test results and Caltrans criteria, soil at the locations tested does not have a higher propensity for corrosion.

Soil resistivity is the measure of the soil's ability to transmit electric current. Corrosion of buried ferrous metal is proportional to the resistivity of the soil. A lower resistivity indicates a higher propensity for transmitting electric currents that can cause corrosion of buried ferrous metal items. In general, the higher the resistivity, the lower the rate of corrosion. Per Caltrans *Corrosion Guidelines*, resistivity serves as an indicator parameter for the possible presence of soluble salts and it is not included as a parameter to define a corrosive area for structures. A minimum resistivity value for soil less than 1,500 ohm-cm may indicate the presence of high quantities of soluble salts and a higher propensity for corrosion. Based on the laboratory minimum resistivity test results and Caltrans criteria, soil at the locations tested does not have a higher propensity for corrosion.

Table 5.5B presents a summary of concrete requirements set forth by the California Building Code (CBC) Section 1904 and American Concrete Institute (ACI) 318 for possible chloride exposure. Chlorides can break down the protective oxide layer on steel surfaces resulting in corrosion. Sources of chloride include, but are not limited to, deicing chemicals, salt, brackish water, seawater, or spray from these sources.

TABLE 5.5B
REQUIREMENTS FOR CONCRETE EXPOSED TO CHLORIDE-CONTAINING SOLUTIONS
(AFTER ACI 318 TABLES 19.3.1.1 and 19.3.2.1)

Chloride Severity	Exposure Class	Condition	Maximum Water to Cement Ratio by Weight	Minimum Compressive Strength (psi)
Not Applicable	C0	Concrete dry or protected from moisture	N/A	2,500
Moderate	C1	Concrete exposed to moisture but not to external sources of chlorides	N/A	2,500
Severe	C2	Concrete exposed to moisture and an external source of chlorides	0.40	5,000

The appropriate Chloride Severity/Exposure Class should be determined by the project designer based on the specific conditions at the location of the proposed structure. Further guidance is provided in ACI 318. Per Caltrans *Corrosion Guidelines*, soil with a chloride concentration of 500 ppm or higher may be corrosive to steel structures or steel reinforcement in concrete. Based on Caltrans criteria, soil at the locations tested is not corrosive with respect to chloride content.

Table 5.5C presents a summary of concrete requirements set forth by CBC Section 1904 and ACI 318 for sulfate exposure. Similar to chlorides, sulfates can break down the protective oxide layer on steel leading to corrosion. Sulfates can also react with lime in cement to soften and crack concrete.

TABLE 5.5C
REQUIREMENTS FOR CONCRETE EXPOSED TO SULFATE-CONTAINING SOLUTIONS
(AFTER ACI 318 TABLES 19.3.1.1 and 19.3.2.1)

Sulfate Severity	Exposure Class	Water-Soluble Sulfate (SO_4) Content		Cement Type (ASTM C 150)	Maximum Water to Cement Ratio by Weight[1]	Minimum Compressive Strength (psi)
		Percent By Mass	Parts Per Million (ppm)			
Not Applicable	**S0**	**$SO_4 < 0.10$**	**$SO_4 < 1{,}000$**	**No Type Restriction**	**N/A**	**2,500**
Moderate	S1	$0.10 \leq SO_4 < 0.20$	$1{,}000 \leq SO_4 < 2{,}000$	II	0.50	4,000
Severe	S2	$0.20 \leq SO_4 \leq 2.00$	$2{,}000 \leq SO_4 \leq 20{,}000$	V	0.45	4,500
Very Severe	S3 – Option 1	$SO_4 > 2.00$	$SO_4 > 20{,}000$	V+Pozzolan or Slag	0.45	4,500
	S3 – Option 2			V	0.40	5,000

Notes:

1. Maximum water to cement ratio limits are different for lightweight concrete, see ACI 318 for details.

Based on the laboratory test results, the Sulfate Severity is classified as “Not Applicable”, and the Exposure Class is S0. The concrete mix design(s) should be developed accordingly. The presence of water-soluble sulfates is not a visually discernible characteristic; therefore, other soil samples from the site could yield different concentrations. Additionally, over time landscaping activities (i.e., addition of fertilizers and other soil nutrients) may affect the concentration.

Geocon does not practice in the field of corrosion engineering and the above information is provided as screening criteria only. If corrosion sensitive improvements are planned, we recommend that further evaluations by a corrosion engineer be performed to incorporate the necessary precautions to avoid premature corrosion on buried metal pipes and metal or concrete structures in direct contact with the soils.

5.6 Naturally Occurring Asbestos

Soil and rock in portions of El Dorado County are known or suspected to contain naturally occurring asbestos (NOA) minerals which may pose a health hazard when disturbed (Churchill et al., 2000). NOA minerals (chrysotile, tremolite, and actinolite) are more likely to be encountered in areas with geology including serpentinite, ultramafic, or sheared metavolcanic rocks due to metamorphic processes. The site is not located within an area mapped with serpentinite or ultramafic rock units (Jennings et al., 2010). Site geology, which consists of pyroclastic and volcanoclastic deposits and associated fill over slate, is generally considered unlikely to contain NOA. However, as a screening measure, we submitted rock samples from Test Pits TP1 and TP7 to an analytical laboratory for asbestos testing. Laboratory analysis with 0.1% sensitivity of rock samples from Test Pits TP1 and TP7 detected no asbestos or other fibrous materials. Laboratory test reports for asbestos are included in Appendix B.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 General

6.1.1 No soil or geologic conditions were encountered during our investigation that would preclude development of the site as planned, provided the recommendations contained in this report are incorporated into the design and construction of the project.

6.1.2 Based on our findings, evaluation, and analyses to date, we have identified the following geotechnical constraints for the site:

- **Undocumented Fill:** Approximately 1 to 3 feet of existing fill was encountered in the western portion of the site; however, we expect that the thickness of fill may vary. Undocumented fill material is variable in consistency and is not suitable for direct support of structures and improvements. Remedial grading in the form of removal and re-compaction will be required during site grading.
- **Existing Structures and Utilities:** The site currently contains an outdoor lunch area, playing courts, and associated improvements such as irrigation lines and underground utilities. Removal of any such features within building pad areas will be required as part of site development.
- **Groundwater Seeps:** We observed groundwater seeps as shallow as 4 feet below ground surface within the western portion of the site. Wet soil may require additional drying effort prior to construction. Seepage within utility excavations may require pumping or removal during construction. Significant drying effort (e.g., discing/aeration) to attain moisture contents suitable for compaction should be anticipated regardless of the time of year.
- **Cemented Horizons and Hard Formational Material:** Outside of fill areas, we observed cemented soil and strong formational material in our test pits at variable depths beginning at approximately 2 inches below ground surface throughout the site. The presence of cemented soil or strong bedrock material will increase excavation difficulty during construction and has the potential to impede water infiltration which may create zones of perched groundwater.

These conditions impact design and construction of the project. Discussion of these geotechnical constraints and specific mitigation, design, and construction recommendations are provided herein.

6.1.3 Conclusions and recommendations provided in this report are based on our review of referenced literature, analysis of data obtained from our field exploration and laboratory testing program, and our understanding of the proposed development at this time.

6.1.4 We should review the project plans as they develop further, provide engineering consultation as needed during final design, and perform geotechnical observation and testing services during construction.

6.2 Seismic Design Criteria

6.2.1 Seismic design of structures should be performed in accordance with the provisions of the 2022 California Building Code (CBC) which is based on the American Society of Civil Engineers (ASCE)/Structural Engineering Institute (SEI) publication *ASCE/SEI 7-16, Minimum Design Loads and Associated Criteria for Buildings and Other Structures* (ASCE/SEI, 2017). We used the Structural Engineers Association of California (SEAOC) and Office of Statewide Health Planning and Development (OSHPD) web application *Seismic Design Maps* (https://seismicmaps.org/) to evaluate site-specific seismic design parameters in accordance with ASCE 7-16.

For seismic design purposes, sites are classified as Site Class "A" through "F" as follows:

- Site Class A – Hard Rock;
- Site Class B – Rock;
- Site Class C – Very Dense Soil and Soft Rock;
- Site Class D – Stiff Soil;
- Site Class E – Soft Clay Soil; and
- Site Class F – Soils Requiring Site Response Analysis.

Based on the subsurface conditions at the site, the Site Classification is Site Class "C – Very Dense Soil and Soft Rock" per Table 20.3-1 of ASCE/SEI 7-16. For the purpose of evaluating code-based seismic parameters for design, we assumed a seismic Risk Category II (per the CBC) for the project. Results are summarized in Table 6.2.1.

TABLE 6.2.1
ASCE 7-16 SEISMIC DESIGN PARAMETERS
SITE CLASS "C – VERY DENSE SOIL AND SOFT ROCK"

Parameter	Value	ASCE 7-16 Reference
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	0.397g	Figure 22-1
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.205g	Figure 22-2
Site Coefficient, F_A	1.3	Table 11.4-1
Site Coefficient, F_V	1.5	Table 11.4-2
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	0.517g	Eq. 11.4-1
Site Class Modified MCE_R Spectral Response Acceleration (1 sec), S_{M1}	0.308g	Eq. 11.4-2
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.344g	Eq. 11.4-3
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.205g	Eq. 11.4-4

6.2.2 Table 6.2.2 presents additional seismic design parameters for projects with Seismic Design Categories of D through F in accordance with ASCE 7-16 for the mapped maximum considered geometric mean (MCE_G).

TABLE 6.2.2
ASCE 7-16 SITE ACCELERATION DESIGN PARAMETERS

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.169g	Figure 22-7
Site Coefficient, F_{PGA}	1.231	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.208g	Section 11.8.3 (Eq. 11.8-1)

6.2.3 Conformance to the criteria presented in Tables 6.2.1 and 6.2.2 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and not to avoid structural damage, since such design may be economically prohibitive.

6.3 Soil and Excavation Characteristics

6.3.1 Excavation characteristics will vary at the site depending on location and excavation depths. Table 6.3.1 summarizes anticipated excavation characteristics.

TABLE 6.3.1
ANTICIPATED EXCAVATION CHARACTERISTICS

Geologic Unit	Excavation Characteristics
Fill / Copper Hill Volcanics	Fill soil and Copper Hill Volcanics generally consist of soft to medium stiff lean clay and loose clayey sand with varying amounts of clay, sand, gravel, cobbles, and boulders. Occasional cemented layers may be encountered throughout. We anticipate moderate excavation effort with conventional, heavy-duty grading equipment. The presence of oversize rock (greater than 6 to 24 inches in maximum dimension) should be anticipated and may increase excavation difficulty.
Salt Springs Slate Formation	The upper (weathered) portion of the Salt Springs Slate generally excavates as gravel and cobbles. The presence of oversize rock exceeding 6 inches in maximum dimension should be anticipated and may increase excavation difficulty. We encountered excavation refusal at depths ranging from 1½ to 4½ feet within the Salt Springs Slate using a John Deere 310L backhoe with a 24-inch-wide toothed bucket. Difficult excavation characteristics should be anticipated below weathered material. Weathering of formational material generally decreases with depth and pre-ripping with a large dozer (such as Caterpillar D10 or larger) may be required for cuts below the existing soil. A large excavator (such as Caterpillar 323 or larger) with a ripping shank or a rock trencher will likely be required for trenching. We note that pre-ripping may generate large cobbles and boulders that may require further processing to reduce size for use as engineered fill or trench backfill.

6.3.2 Protruding rocks in excavation bottoms should be removed and resulting depressions filled in accordance with the recommendations in this report.

6.3.3 Excavations may generate some oversized rock material (greater than 6 to 12 inches in dimension), and possibly boulders, at the anticipated excavation depths. Excavation difficulty will increase significantly with depth as less weathered rock is encountered. The contractor should select appropriate excavation equipment.

6.3.4 Temporary excavations deeper than 4 feet and entered by workers must meet Cal-OSHA requirements as appropriate. Excavation sloping, benching, the use of trench shields, and the placement of trench spoils should conform to the latest applicable Cal-OSHA standards. The contractor should have a Cal-OSHA-approved "competent person" onsite during excavation to evaluate trench conditions and to make appropriate recommendations where necessary. It is the contractor's responsibility to provide sufficient and safe excavation support as well as protecting nearby utilities, structures, and other improvements which may be damaged by earth movements.

6.3.5 The excavation support recommendations provided by Cal-OSHA are generally geared toward protecting human life and not necessarily toward preventing damage to nearby structures or surface improvements. The contractor should be responsible for using the proper active shoring systems or sloping to prevent damage to any structure or improvements near underground excavations.

6.3.6 Permanent cut and fill slopes should be constructed no steeper than 2H:1V (horizontal to vertical). To mitigate potential erosion, slopes should be vegetated as soon as possible and surface drainage should be directed away from the tops of slopes.

6.3.7 Seasonal shallow perched groundwater (seepage) are likely to be present if grading occurs during or after the wet season. Perched groundwater typically develops atop cemented horizons and at the contact between soil and formational material. Fill derived from shallow excavations during perched groundwater conditions will likely need to be aerated/dried to achieve suitable moisture content for compaction. We should evaluate conditions in the field at the time of construction and evaluate the type, level, and extent of mitigation alternatives.

6.3.8 If grading occurs during or after the wet season or in periods of precipitation, in-place and excavated soils will likely be wet. Earthwork contractors should be aware of moisture sensitivity of the near-surface fine-grained soils and potential compaction/workability difficulties. The presence of cemented soil/rock tends to exacerbate wet soil conditions as water can become trapped (perched) on the cemented materials.

6.3.9 Earthwork and pad preparation operations in these conditions will likely be difficult with low productivity. Often, a period of at least one month of warm and dry weather is necessary to allow the site to dry sufficiently so that heavy grading equipment can operate effectively. Conversely, during dry summer and fall months, dry clay soils may require additional grading effort (discing, mixing, or other means) to attain proper moisture conditioning.

6.4 Materials for Fill

6.4.1 Excavated soil and rock generated from cut operations at the site are suitable for use as engineered fill in structural areas provided they are screened/processed and selectively placed during grading in accordance with the following recommendations:

- Deleterious material, material with greater than 3% organics by weight, and debris should be exported from the site and not incorporated into structural fill.
- Fill material in areas with underground utilities and foundations should consist of 6-inch-minus material with a sufficient amount of soil to provide adequate binder to reduce the potential for excavation caving.

- In other areas (general fill areas without utilities or foundations) rock or cementations up to 2 feet in maximum dimension may be used. However, this material should contain a sufficient amount of smaller rock and soil to fill void spaces between large rocks and avoid rock nesting (concentrations of rock with void space).
- If sufficient soil fill materials are not present at the site to mix with onsite rock material, import of soil fill material will be necessary.

6.4.2 Import fill material should be primarily granular with a "very low" expansion potential (Expansion Index less than 20), have a Plasticity Index less than 15, be free of organic material and construction debris, not contain rock/cementations larger than 3 inches in greatest dimension, and contain sufficient fines (approximately 12% to 15% or more) to act as a binder to reduce caving potential when excavated.

6.4.3 Environmental characteristics and corrosion potential of import soil materials should also be considered. Proposed import materials should be sampled, tested, and approved by Geocon prior to its transportation to the site.

6.5 Grading

6.5.1 All earthwork operations should be observed and all fills tested for recommended compaction and moisture content by a representative of Geocon.

6.5.2 References to relative compaction and optimum moisture content in this report are based on the latest American Society for Testing and Materials (ASTM) D1557 Test Procedure. Structural building pad areas should extend a minimum of 5 feet horizontally beyond the outside dimensions of structures, including footings and overhangs carrying structural loads.

6.5.3 Prior to commencing grading, a pre-construction conference with representatives of the client, grading contractor, and Geocon should be held at the site. Site preparation, soil handling, and/or the grading plans should be discussed at the pre-construction conference.

6.5.4 Site preparation within building pads should begin with removal of existing vegetation or organic material, debris, surface/subsurface structures (if any), and existing fill. Fill material, existing pipelines, and overlying trench backfill should be completely removed to expose undisturbed soil. Surface vegetation consisting of grasses and other similar vegetation should be removed by stripping to a sufficient depth to remove organic-rich topsoil. We estimate required stripping depths will range from approximately 1 to 2 inches. The actual stripping depth should be determined based on site conditions prior to grading. Material generated during stripping is not suitable for use within 5 feet of building pads or within pavement/flatwork areas but may be placed in landscaped or non-structural areas or exported from the site.

6.5.5 Alternatively, surface vegetation may be mowed such that 1 to 2 inches of stubble remains. After removing mowed vegetation, the ground surface should be thoroughly disced in two perpendicular directions to a depth of 12 inches to blend the remaining grass and roots into the surface soil. The resulting soil should be thoroughly mixed such that vegetation segments longer than 1 inch are not visually discernable, and the overall organic content is 3% by dry weight or less.

6.5.6 Excavations or depressions resulting from site clearing operations, or other existing excavations or depressions, should be restored with engineered fill in accordance with the recommendations of this report.

6.5.7 The most effective site preparation alternatives will depend on site conditions prior to grading. We should evaluate site conditions and provide supplemental recommendations immediately prior to grading, if necessary.

6.5.8 After site preparation, the bottom of cut areas, areas left at grade, and areas to receive fill, should be scarified at least 12 inches, uniformly moisture-conditioned at or above optimum moisture content and compacted to at least 90% relative compaction. Scarification and re-compaction operations should be performed in the presence of our representative to evaluate performance of the subgrade under compaction equipment loading and to identify any areas that may require additional removals.

6.5.9 Engineered fill should be compacted in horizontal lifts not exceeding 8 inches (loose thickness) and brought to final subgrade elevations. Each lift should be moisture-conditioned at or above optimum moisture content and compacted to at least 90% relative compaction. The top 12 inches of building pads, whether completed at-grade or by excavation or filling, should be uniformly moisture-conditioned at or above optimum moisture content and compacted to at least 90% relative compaction, or per the compaction method specification presented in Section 6.5.10 if the soil contains greater than 30 percent rock larger than ¾ inches by mass.

6.5.10 Soils exceeding 30 percent rock larger than ¾ inches by mass are considered non-testable by conventional methods. In this case, the following compaction method specification will apply. Compaction equipment shall consist of a self-propelled sheepsfoot compactor with a minimum operating weight of 12 tons (Caterpillar 563 or equivalent). Under the continuous observation of a representative of Geocon, each lift of rocky soil fill shall be moisture-conditioned and compacted in place by 6 to 8 passes with the approved compactor. Additional passes as deemed necessary during fill placement to achieve the desired condition based upon field conditions may be recommended. Each compaction pass shall overlap the adjacent pass by a minimum of 1 foot. Geocon will visually verify proper lift thickness, spreading, mixing, and compaction operations. Fills containing soils exceeding 30% rock larger than ¾ inches by mass should be placed and proof-rolled under our observation.

6.5.11 Site grading will likely result in cut-fill transitions below some building or ancillary structure pads. To reduce the potential for differential settlement, the cut portion of building pads with cut-fill transitions, if any, should be undercut to the depth of the adjacent fill but not to exceed 3 feet and backfilled with properly compacted fill. Building pads formed entirely in cut should be undercut 3 feet during mass grading and backfilled with properly compacted fill in order to provide more uniform bearing conditions and to facilitate in-pad utility excavations with smaller equipment.

6.5.12 Final pavement subgrade, whether completed at-grade, by excavation, or by filling, should be uniformly moisture-conditioned at or above optimum moisture content, be compacted to at least 95% relative compaction, and be stable. The 95% relative compaction requirement applies to the top 6 inches of pavement area subgrade; however, underlying materials must be sufficiently compacted and stable. We recommend proof-rolling the subgrade with a loaded water truck (or similar equipment with high contact pressure) to verify the stability of the subgrade prior to placing aggregate base (AB). We note that deeper scarification, moisture-conditioning, and compaction efforts may be required in order to achieve overall stability and compaction.

6.5.13 Underground utility trenches should be backfilled with properly compacted material. Pipe bedding, shading, and backfill should conform to the requirements of the appropriate utility authority. Material excavated from trenches should be adequate for use as general backfill above shading provided it does not contain deleterious matter, vegetation, or cementations larger than 6 inches in maximum dimension. Trench backfill should be placed in loose lifts not exceeding 8 inches. Lifts should be compacted to a minimum of 90% relative compaction at or above optimum moisture content. Compaction should be performed by mechanical means only; jetting of trench backfill should not be allowed.

6.6 Foundations

6.6.1 Provided the building pads are graded in accordance with the recommendations of this report, the proposed buildings may be supported on conventional shallow foundations bearing on undisturbed native soil or engineered fill.

6.6.2 Foundations should consist of continuous perimeter footings with interior spread footings. Perimeter footings should be continuous around the entire perimeter of the structure without breaks or discontinuities. Continuous footings should be at least 12 inches wide and interior spread footings should be at least 24 inches square. All footings should be embedded at least 12 inches below pad grade.

6.6.3 Footing bottoms should be level, and projections of rock greater than 2 inches above the footing bottom should be removed or a leveling course of structural fill, crushed rock, or lean-mix concrete should be placed to at least 2 inches higher than the highest projection of rock. The intent of removing rock projections or placing fill is to avoid point loading of the foundation.

6.6.4 Underground utilities running parallel to footings should not be constructed in the zone of influence of footings. The zone of influence may be taken to be the area within 18 inches laterally of the footing, beneath the footing, and within a 1:1 plane extending out and down from the bottom of the footing.

6.6.5 Continuous footings should be reinforced with at least two No. 4 reinforcement bars, one each placed near the top and bottom of the footing to allow footings to span isolated soil irregularities. The reinforcement recommended above is for soil characteristics only and is not intended to replace reinforcement required for structural considerations. The project structural engineer should evaluate the need for additional reinforcement.

6.6.6 Foundations may be designed using an allowable bearing capacity of 3,000 psf for dead plus live load conditions. A one-third increase in allowable bearing capacity is permitted for use with the alternative load combinations given in Section 1605.2 of the 2022 CBC.

6.6.7 Allowable passive pressure used to resist lateral movement of the footings may be assumed to be equal to a fluid weighing 350 pounds per cubic foot (pcf). The coefficient of friction to resist sliding is 0.35 for concrete against soil. Combined passive resistance and friction may be utilized for design provided that the frictional resistance is reduced by 50%.

6.6.8 Foundations designed in accordance with the recommendations above should experience total post-construction settlement due to building loads of less than one inch and differential settlement of ½ inch or less over a distance of 30 feet due to the building loads. The majority of settlement will be immediate and occur as the buildings are constructed.

6.6.9 A Geocon representative should observe foundation excavations prior to placing reinforcing steel or concrete to observe that the exposed soil conditions are consistent with those anticipated. If unanticipated soil conditions are encountered, foundation modifications may be required.

6.6.10 Conventional interior concrete slabs-on-grade are suitable for the building pads prepared as recommended in this report. Slab thickness and reinforcement should be determined by the structural engineer based on anticipated loading. However, slabs should be at least 4 inches thick and reinforced with at least No. 3 reinforcing bars placed 24 inches on center, each way. Control joints should be provided at periodic intervals in accordance with American Concrete Institute (ACI) or Portland Cement Association (PCA) recommendations, as appropriate.

6.6.11 If building pad soils become dry, they should be re-moistened prior to concrete slab-on-grade construction. Building pads should be moistened to at least optimum moisture content, at least 48 hours before placing the vapor barrier. Moisture content should be verified by Geocon prior to placing the vapor barrier.

6.6.12 Migration of moisture through concrete slabs-on-grade or moisture otherwise released from slabs is not a geotechnical issue. However, for the convenience of the owner and design team, we are providing the following general suggestions for consideration by the owner, architect, structural engineer, and contractor. The suggested procedures may reduce the potential for moisture-related floor covering failures on concrete slabs-on-grade, but moisture problems may still occur even if the procedures are followed. If more detailed recommendations are desired, we recommend consulting a specialist in this field.

6.6.13 For slabs that receive floor coverings, a minimum 10-mil-thick vapor barrier meeting ASTM E1745-97 Class C requirements may be placed directly below the slab, without a sand cushion. To reduce the potential for punctures, a higher quality vapor barrier (15 mil, Class A or B) may be used. The vapor barrier, if used, should extend to the edges of the slab and should be sealed at all seams and penetrations. At least 4 inches of ½- or ¾-inch crushed rock, with no more than 5% passing the No. 200 sieve, may be placed below the vapor barrier to serve as a capillary break.

6.6.14 The concrete water/cement ratio should be as low as possible. The water/cement ratio should not exceed 0.45 for concrete placed directly on the vapor barrier. Midrange plasticizers could be used to facilitate concrete placement and workability.

6.6.15 Proper finishing, curing, and moisture vapor emission testing should be performed in accordance with the latest guidelines provided by the ACI, PCA, and ASTM.

6.7 Retaining Walls and Lateral Loads

6.7.1 Design of retaining walls and buried structures may be based on the lateral earth pressures (equivalent fluid pressure) summarized in Table 6.7.1.

TABLE 6.7.1
RECOMMENDED LATERAL EARTH PRESSURES

Condition	Equivalent Fluid Density
Active	40 pcf
At-Rest	60 pcf
Seismic[1]	Not Applicable

1. Based on research by Lew, et al. 2010, the seismic increment of earth pressure may be neglected if the maximum peak ground acceleration (PGA) at the site is 0.4 g or less. The Site Class Modified MCE_G Peak Ground Acceleration (PGA_M) for this site is 0.208g; therefore, the seismic increment of earth pressure may be neglected.

6.7.2 Unrestrained walls should be designed using the active case. Unrestrained walls are those that are allowed to rotate more than 0.001H (where H is the height of the wall). Walls restrained from movement should be designed using the at-rest case. The soil pressures above assume that the backfill material within an area bounded by the wall and a 1:1 plane extending upward from the base of the wall will be composed of the existing onsite soils.

6.7.3 Retaining wall foundations with a minimum depth of 18 inches may be designed using the allowable bearing capacity provided in Section 6.6.6 of this report. To resist lateral movement of retaining wall foundations, an allowable passive earth pressure equivalent to a fluid density of 350 pcf may be used for footings or shear keys poured neat against properly compacted engineered fill soils or undisturbed natural soils. This allowable passive pressure is based on the assumption that a horizontal surface extends at least 5 feet or three times the depth of the footing or shear key, whichever is greater, beyond the face of the retaining wall foundation. If this surface is not protected by floor slabs or pavement, the upper 12 inches of material should not be included in the design for lateral resistance. An allowable friction coefficient of 0.35 may be used for resistance to sliding between soil and concrete. Combined passive resistance and friction may be utilized for design provided that the frictional resistance is reduced by 50%.

6.7.4 Retaining walls greater than 2 feet tall (retained height) should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces and should be waterproofed as required by the project architect. Positive drainage for retaining walls should consist of a vertical layer of permeable material positioned between the retaining wall and the soil backfill. The permeable material may be composed of a composite drainage geosynthetic or a natural permeable material such as crushed gravel at least 12 inches thick and capped with at least 12 inches of native soil. A geosynthetic filter fabric should be placed between the gravel and the soil backfill. Provisions for removal of collected water should be provided for either system by installing a perforated drainage pipe along the bottom of the permeable material, which leads to suitable drainage facilities.

6.7.5 The recommendations presented above are generally applicable to the design of rigid concrete or masonry retaining walls with a level backfill and having a maximum retained height of 10 feet. In the event that walls higher than 10 feet or other types of walls are planned, Geocon should be consulted for additional recommendations.

6.8 Stormwater Infiltration Device Design

6.8.1 The measured soil infiltration rates at test depths of approximately 3½ to 13 inches (near surface) ranged from 0.1 inches per hour (in/hr) to approximately 3 in/hr. The soils at these depths generally consist of sandy lean clay to clayey sand (high fines content). After applying an appropriate reduction factor, the factored infiltration rates range from 0.05 to 1.5 in/hr.

6.8.2 Based on the criteria outlined in the *National Engineering Handbook – Chapter 7 – Hydrologic Soil Groups* (USDA, 2009), the near surface soil at the site may be classified as Hydrologic Soil Group "D" for infiltration device design, if needed.

6.9 Concrete Sidewalks and Flatwork

6.9.1 Although site soils tested as very low for expansion potential, onsite exterior flatwork may experience seasonal movement. Therefore, some cracking/vertical offset should be anticipated. We are providing the following recommendations to reduce distress to concrete flatwork. Recommendations include moisture conditioning subgrade soils and providing adequate construction and control joints. It should be noted that even with implementation of these measures, minor slab movement or cracking could still occur.

6.9.2 Concrete flatwork should be at least 4 inches thick and may be underlain by at least 4 inches of aggregate base (AB) compacted to at least 90% relative compaction.

6.9.3 We recommend using construction and control joints in accordance with ACI and/or PCA guidelines. Construction joints that abut building foundations should include a felt strip, or approved equivalent, that extends the full depth of the exterior slab. Exterior slabs should be structurally independent of building foundations except at doorways, where vertical offset could impact doorway operation. Dowels should be used at these locations.

6.9.4 To reduce the potential for water from landscaped areas migrating under concrete flatwork and into the AB, consideration should be given to using plastic moisture cutoffs or full-depth curbs in areas where flatwork abuts irrigated landscaping. The cutoffs or full-depth curbs should extend at least 4 inches or more into the soil subgrade beneath the AB.

6.10 Pavement – Hot Mix Asphalt

6.10.1 We performed Resistance-Value (R-Value) testing on one representative bulk soil sample. Our testing resulted in an R-Value of 41 (see Appendix B). To account for subgrade soil variability and based on our experience in the area, we recommend using an R-Value of 40 for the purpose of pavement design.

6.10.2 We recommend the following alternative hot mix asphalt (HMA) pavement sections for design. The project civil engineer should determine the appropriate Traffic Index (TI) based on anticipated traffic conditions. Table 6.10.2 provides alternative pavement sections based on assumed TIs. We can provide additional sections based on other TIs if necessary.

TABLE 6.10.2
FLEXIBLE PAVEMENT SECTIONS

Street Type	Design TI	HMA[1] (inches)	AB[2] (inches)
Walking Paths / Minimal Vehicular Traffic	4.0	3	4
Fire Lanes	6.0	4	4
Driveways / Trash Truck Areas	6.5	4	6

Notes:
[1]HMA = Hot Mix Asphalt (Type A) conforming to Section 39 of Caltrans' latest *Standard Specifications*.
[2]AB = Class 2 Aggregate Base conforming to Section 26 of Caltrans' latest *Standard Specifications*.

6.10.3 The recommended pavement sections are based on the following assumptions:

1. Subgrade soil has a minimum R-Value of 40.
2. Subgrade soil is stable, moisture-conditioned, and compacted in accordance with the recommendations of this report. Prior to placing AB, subgrade soil should be proof rolled with a loaded water truck to verify stability.
3. Class 2 AB has a minimum R-Value of 78 and meets the requirements of Section 26 of the latest Caltrans *Standard Specifications*.
4. Class 2 AB is compacted to 95% or higher relative compaction at or near optimum moisture content. Prior to placing HMA, the AB should be proof-rolled with a loaded water truck to verify stability.
5. HMA should conform to Section 39 of Caltrans' latest *Standard Specifications.*
6. Periodic maintenance of HMA pavements is performed.

6.10.4 HMA pavement section recommendations for driveways and parking areas are based on the design procedures of Caltrans' *Highway Design Manual* (Design Manual), Chapter 600, latest edition. It should be noted that most rational pavement design procedures are based on projected street or highway traffic conditions and, hence, may not be representative of vehicular loading that occurs in parking lots and driveways. Pavement proximity to landscape irrigation, reduced traffic speed, and short turning radii increase the potential for pavement distress to occur in parking lots even though the volume of traffic is significantly less than that of an adjacent street. The resulting pavement sections for parking lots based on traditional pavement design methods are reasonable because additional asphalt surfacing can be added later, if needed, and generally without incurring traffic hazards or traffic handling problems. It is generally not economically feasible to design and construct the entire parking lot and driveways for the unique loading conditions previously described. Periodic maintenance of the pavement in these areas, therefore, should be anticipated.

6.10.5 To reduce the potential for water from landscaped areas migrating under pavement into the AB, consideration should be given to using full-depth curbs in areas where pavement abuts irrigated landscaping. The full-depth curbs should extend at least 4 inches or more into the soil subgrade beneath the AB. Alternatively, modified drop-inlets that contain weep-holes may be used to encourage accumulated water to drain from beneath the pavement.

6.11 Pavement – Rigid Concrete

6.11.1 If rigid Portland cement concrete (PCC) pavement is used in automobile and light-truck traffic areas and in front of trash bins, we recommend that the PCC pavement be at least 6 inches thick. PCC pavement should be underlain by at least 6 inches of Class 2 AB meeting the requirements of Section 26 of Caltrans' *Standard Specifications* and compacted to at least 95% relative compaction.

6.11.2 Subgrade soils should be prepared and compacted in accordance with the recommendations of this report. Subgrade should be finished to a smooth, unyielding surface and proof-rolled with a loaded water truck to verify stability.

6.11.3 PCC should have a minimum 28-day compressive strength of 3,500 pounds per square inch (psi). Adequate construction and crack control joints should be used to control cracking inherent in concrete construction. We note that the American Concrete Pavement Association (ACPA) recommends a maximum joint spacing no greater than 24 times the slab thickness for PCC pavements directly underlain by granular bases.

6.11.4 Steel reinforcement, if used, should be detailed in accordance with PCA, ACI, or similar guidelines. Alternatively, macro synthetic fibers (Euclid Chemical Tuf-Strand™ SF or equivalent) mixed into the concrete mix may be considered in lieu of conventional steel reinforcement provided they meet the requirements of ASTM C1116 and ASTM D7508 for Type III Synthetic Fibers.

6.11.5 Adequate dowels should also be used at joints to facilitate load transfer and reduce vertical offset. In addition, the recommendations in Section 6.10.5 pertaining to deepened curbs, moisture cut-offs, and subsurface drainage apply to concrete pavements, sidewalks, and flatwork, as well as asphalt pavements.

6.11.6 In general, we recommend that concrete pavements be detailed, designed, constructed, and maintained in accordance with industry standards such as those provided by the ACI and ACPA.

6.12 Site Drainage and Moisture Protection

6.12.1 Adequate site drainage is critical to reduce the potential for differential soil movement, soil expansion, erosion, and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to building foundations. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with the 2022 CBC or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices.

6.12.2 Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

6.12.3 Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. We recommend use of area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes. In addition, where landscaping is planned adjacent to the pavement or flatwork, we recommend construction of a cutoff wall (deepened curb) along the edge of the pavement/flatwork that extends at least 4 inches into the soil subgrade below the bottom of the base material.

6.12.4 We recommend implementing measures to reduce infiltrating irrigation water near buildings, flatwork, or pavements. Such measures may include:

- Selecting drought-tolerant plants that require little or no irrigation, especially within 3 feet of buildings, slabs-on-grade, or pavements.
- Using drip irrigation or low-output sprinklers.
- Using automatic timers for irrigation systems.
- Using appropriately spaced area drains.

The project landscape architect should consider incorporating these measures into the landscaping plans.

6.12.5 Experience has shown that even with these provisions, subsurface seepage may develop in areas where no such water conditions existed prior to site development. This is particularly true where a substantial increase in surface water infiltration has resulted from an increase in landscape irrigation.

7.0 FURTHER GEOTECHNICAL SERVICES

7.1 Plan and Specification Review

Geocon should review the foundation and grading plans prior to final design submittal to assess whether our recommendations have been properly implemented and evaluate if additional analysis and/or recommendations are required.

7.2 Testing and Observation Services

The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record (GER) throughout the construction phase and provide construction observation and testing services. Providing these services during construction is important in order to maintain continuity of geotechnical interpretation and confirm that field conditions encountered are similar to those anticipated during design. If we are not retained for these services, we cannot assume any responsibility for others' interpretation of our recommendations or the future performance of the project.

8.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, we should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous materials or environmental contamination was not part of our scope of services.

This report is issued with the understanding that it is the responsibility of the owner or their representative to ensure that the information and recommendations contained herein are brought to the attention of the design team for the project and incorporated into the plans and specifications, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

The recommendations contained in this report are preliminary until verified during construction by representatives of our firm. Changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. Additionally, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated partially or wholly by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices used in the site area at this time. No warranty is provided, express or implied.

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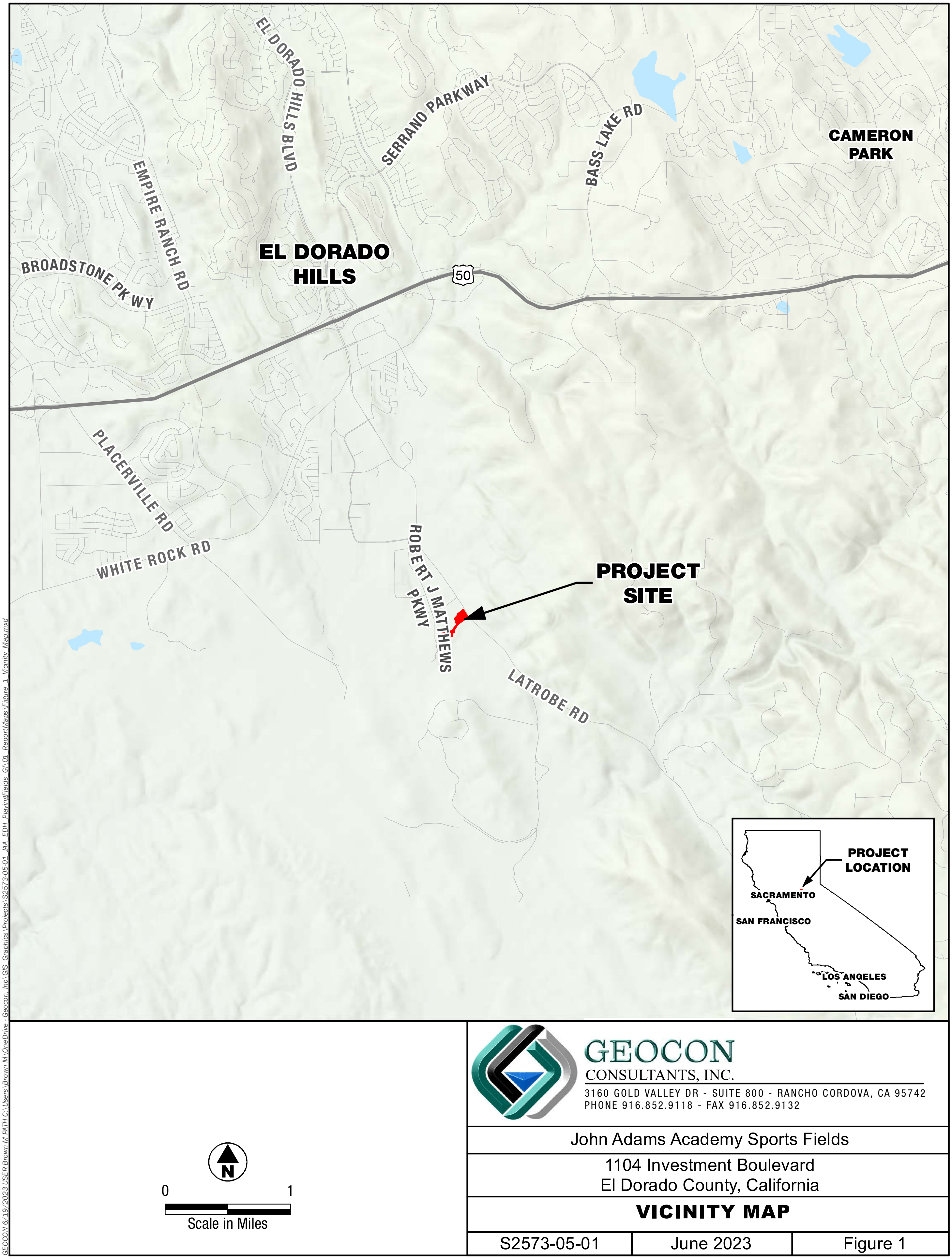

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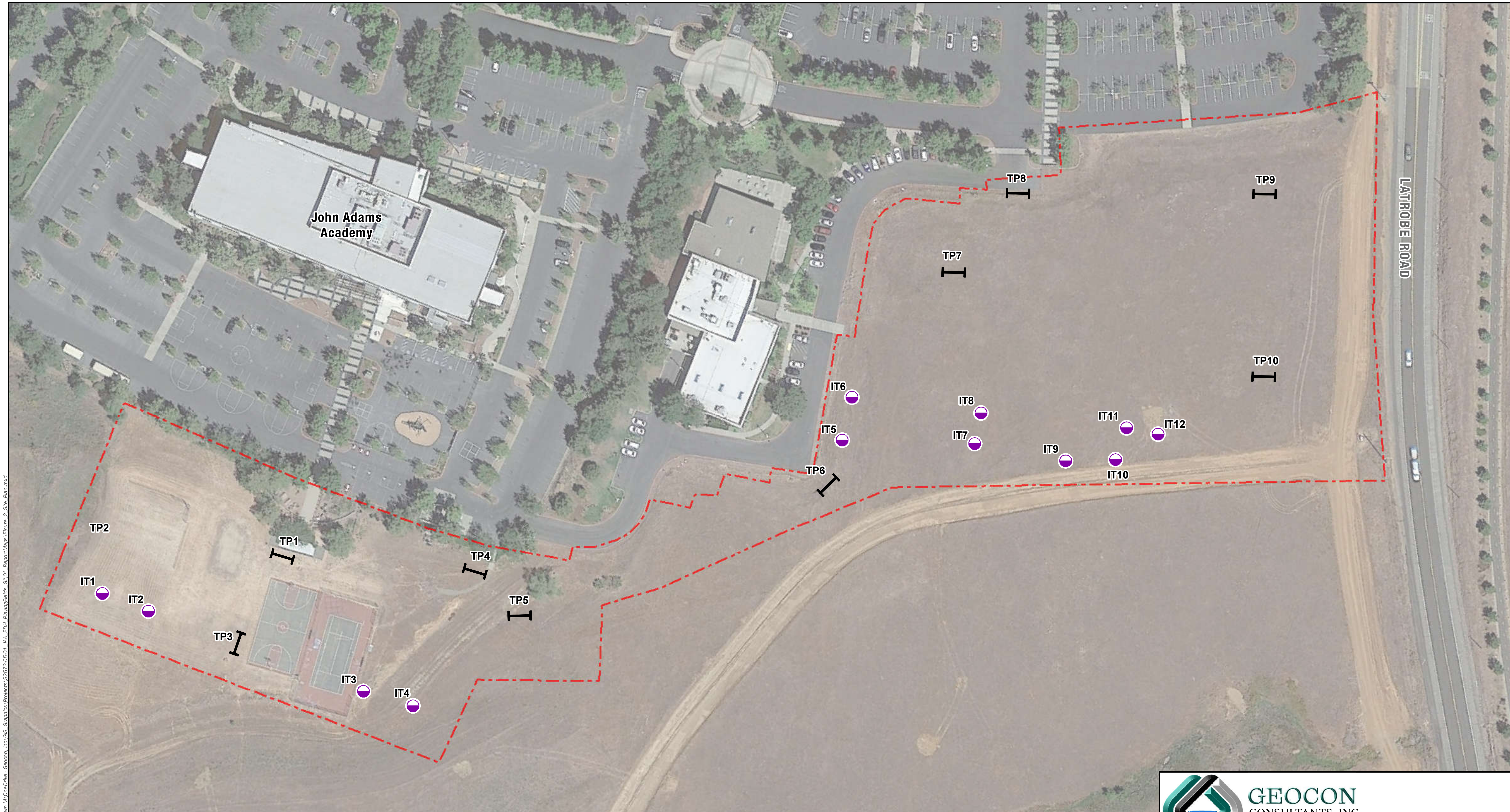
John Adams Academy Sports Fields		
1104 Investment Boulevard El Dorado County, California		
VICINITY MAP		
S2573-05-01	June 2023	Figure 1



Development Design by Comstock Johnson Architects, Inc. (12/30/2022)

Legend

IT12 Approximate Infiltration Test Location

TP10 Approximate Test Pit Location

Approximate Site Boundary

0 100

Scale in Feet

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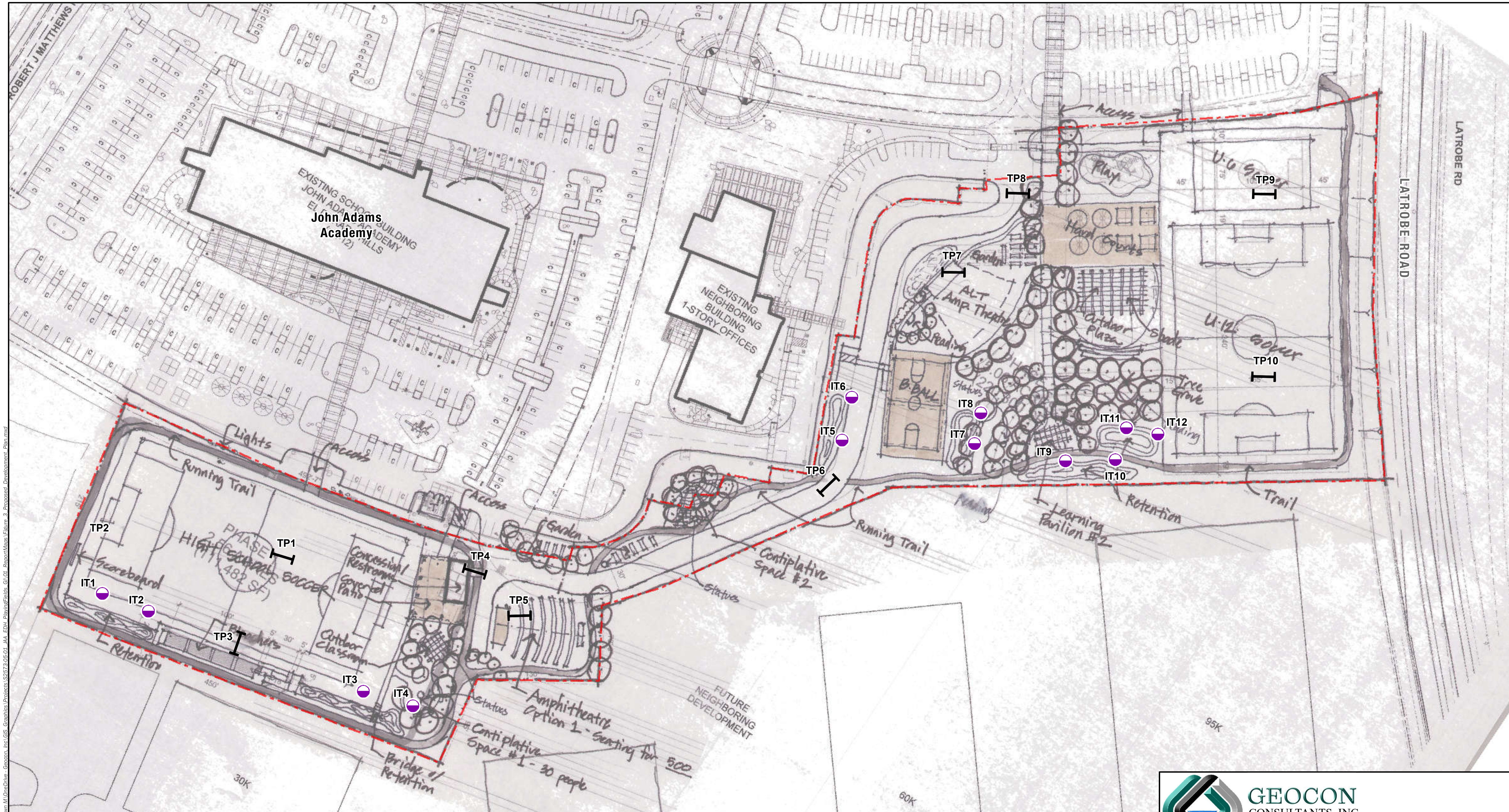
John Adams Academy Sports Fields

1104 Investment Boulevard
El Dorado County, California

SITE PLAN

S2573-05-01	June 2023	Figure 2



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Legend

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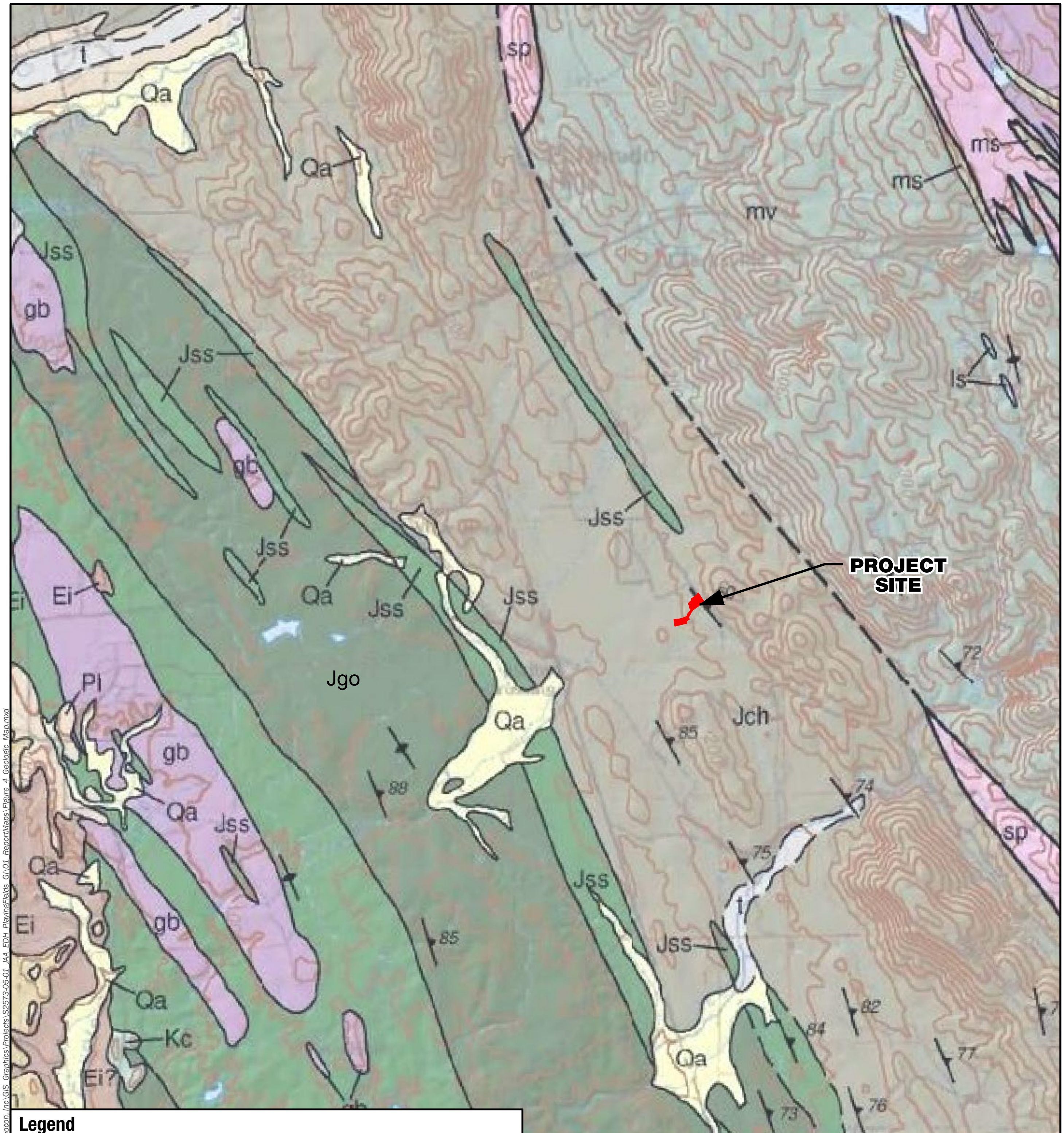
John Adams Academy Sports Fields

1104 Investment Boulevard
El Dorado County, California

PROPOSED DEVELOPMENT PLAN

S2573-05-01	June 2023	Figure 3



Legend

t	Dredge tailings
Qa	Alluvium (undivided)
Pl	Laguna Formation
Ei	Ione Formation
Kc	Chico Formation
Jch	Copper Hill Volcanics
Jss	Salt Spring Slate
Jgo	Gopher Ridge Volcanics

Foothill Melange

mv	sp	mv - Metavolcanic rock
ms	gb	ms - Metasedimentary rock
		sp - Serpentine and peridotite
		gb - Gabbro and metagabbro

N

0 1

Scale in Miles

Preliminary Geologic Map of the Sacramento 30'x60' Quadrangle, California (Gutierrez, 2011)

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1104 Investment Boulevard
El Dorado County, California

GEOLOGIC MAP

S2573-05-01	June 2023	Figure 4

Photo No. 1 Test Pit TP1 spoils


Photo No. 2 Test Pit TP2 spoils

PHOTOS NO. 1 & 2

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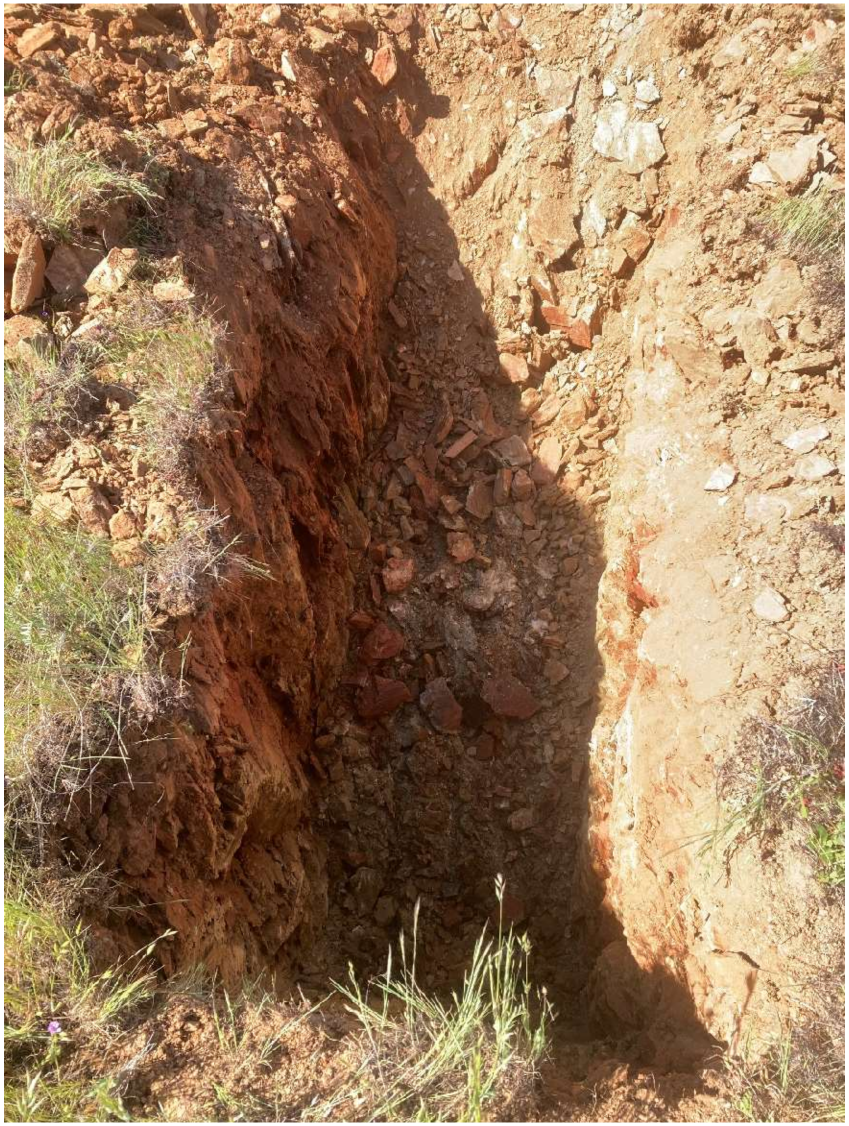

Photo No. 3   Test Pit TP6 with very near surface bedrock

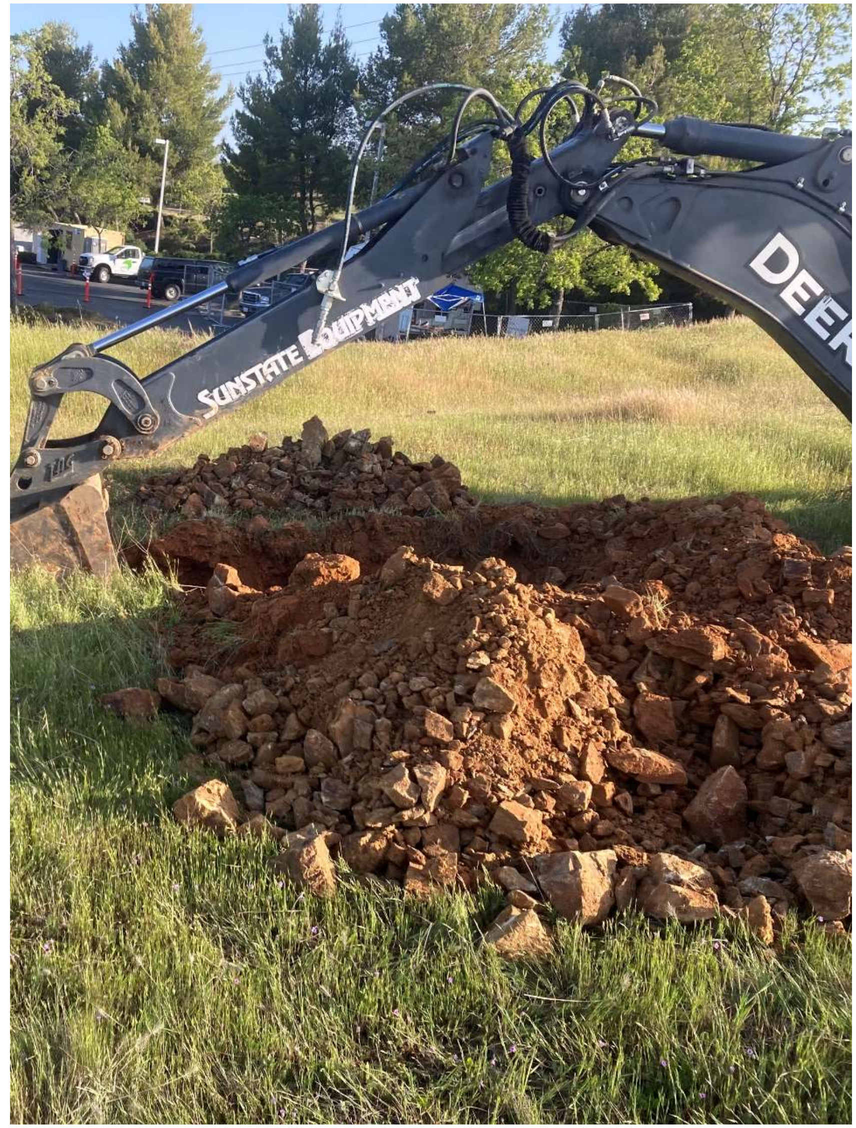

Photo No. 4   Test Pit TP9 spoils

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PHOTOS NO. 3 & 4

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GEOCON Project No. S2573-05-01   June 2023

APPENDIX A

APPENDIX A

FIELD EXPLORATION

We performed our geotechnical field exploration on April 18 and 19, 2023. Our field exploration program consisted of performing 10 exploratory test pits (TP1 through TP10) and performing 11 infiltration tests (IT1 through IT5 and IT7 through IT12) at the approximate locations depicted on the Site Plan, Figure 2, and Proposed Development Plan, Figure 3.

The test pit excavations were performed using a John Deere 310L EP backhoe with 24-inch bucket. We collected bulk, push, and bagged soil samples from soil horizons encountered. Upon completion, the test pits were backfilled with excavated soil.

We visually examined, classified, and logged the subsurface conditions in the excavations in general accordance with the American Society for Testing and Materials (ASTM) Practice for Description and Identification of Soils (Visual-Manual Procedure D2488-90). This system uses the Unified Soil Classification System (USCS) for soil designations. The logs depict soil and geologic conditions encountered and depths at which we obtained samples. Lines designating the interface between soil materials on the logs vary in the field and are estimated on the logs. Where applicable, we revised the field logs based on subsequent laboratory testing. Logs of test pits are presented on Figures A2 through A11.

We performed field infiltration tests using a SoilMoisture Corp. Aardvark Permeameter to evaluate infiltration characteristics within potential stormwater basin and swale areas. Clay soils and shallow bedrock prevalent throughout the site limited infiltration. Infiltration test data are presented on Figures A12 through A23.

UNIFIED SOIL CLASSIFICATION

MAJOR DIVISIONS				TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO.4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC	CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO.4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS WITH OR WITHOUT GRAVEL
			SC	CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL	ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
	HIGHLY ORGANIC SOILS		PT	PEAT AND OTHER HIGHLY ORGANIC SOILS

BORING/TRENCH LOG LEGEND

- No Recovery
- Shelby Tube Sample
- Bulk Sample
- SPT Sample
- Modified California Sample
- Groundwater Level (At Completion)
- Groundwater Level (Seepage)

PENETRATION RESISTANCE

SAND AND GRAVEL			SILT AND CLAY			
RELATIVE DENSITY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	CONSISTENCY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	COMPRESSIVE STRENGTH (tsf)
VERY LOOSE	0 - 4	0 - 6	VERY SOFT	0 - 2	0 - 3	0 - 0.25
LOOSE	5 - 10	7 - 16	SOFT	3 - 4	4 - 6	0.25 - 0.50
MEDIUM DENSE	11 - 30	17 - 48	MEDIUM STIFF	5 - 8	7 - 13	0.50 - 1.0
DENSE	31 - 50	49 - 79	STIFF	9 - 15	14 - 24	1.0 - 2.0
VERY DENSE	OVER 50	OVER 79	VERY STIFF	16 - 30	25 - 48	2.0 - 4.0
			HARD	OVER 30	OVER 48	OVER 4.0

*NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE LAST 12 INCHES OF AN 18-INCH DRIVE

MOISTURE DESCRIPTIONS

FIELD TEST	APPROX. DEGREE OF SATURATION, S (%)	DESCRIPTION
NO INDICATION OF MOISTURE; DRY TO THE TOUCH	$S<25$	DRY
SLIGHT INDICATION OF MOISTURE	$25\leq S<50$	DAMP
INDICATION OF MOISTURE; NO VISIBLE WATER	$50\leq S<75$	MOIST
MINOR VISIBLE FREE WATER	$75\leq S<100$	WET
VISIBLE FREE WATER	100	SATURATED

QUANTITY DESCRIPTIONS

APPROX. ESTIMATED PERCENT	DESCRIPTION
<5%	TRACE
5 - 10%	FEW
11 - 25%	LITTLE
26 - 50%	SOME
>50%	MOSTLY

GRAVEL/COBBLE/BOULDER DESCRIPTIONS

CRITERIA	DESCRIPTION
PASS THROUGH A 3-INCH SIEVE AND BE RETAINED ON A NO. 4 SIEVE (#4 TO 3")	GRAVEL
PASS A 12-INCH SQUARE OPENING AND BE RETAINED ON A 3-INCH SIEVE (3"-12")	COBBLE
WILL NOT PASS A 12-INCH SQUARE OPENING (>12")	BOULDER

LABORATORY TEST KEY

CP – COMPACTION CURVE (ASTM D1557)
CR – CORROSION ANALYSIS (CTM 422, 643, 417)
DS – DIRECT SHEAR (ASTM D3080)
EI – EXPANSION INDEX (ASTM D4829)
GSA – GRAIN SIZE ANALYSIS (ASTM D422)
MC – MOISTURE CONTENT (ASTM D2216)
PI – PLASTICITY INDEX (ASTM D4318)
R – R-VALUE (CTM 301)
SE – SAND EQUIVALENT (CTM 217)
TXCU – CONSOLIDATED UNDRAINED TRIAXIAL (ASTM D4767)
TXUU – UNCONSOLIDATED UNDRAINED TRIAXIAL (ASTM D2850)
UC – UNCONFINED COMPRESSIVE STRENGTH (ASTM D2166)

BEDDING SPACING DESCRIPTIONS

THICKNESS/SPACING	DESCRIPTOR
GREATER THAN 10 FEET	MASSIVE
3 TO 10 FEET	VERY THICKLY BEDDED
1 TO 3 FEET	THICKLY BEDDED
3 5/8-INCH TO 1 FOOT	MODERATELY BEDDED
1 1/4-INCH TO 3 5/8-INCH	THINLY BEDDED
3/8-INCH TO 1 1/4-INCH	VERY THINLY BEDDED
LESS THAN 3/8-INCH	LAMINATED

STRUCTURE DESCRIPTIONS

CRITERIA	DESCRIPTION
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS AT LEAST 1/4-INCH THICK	STRATIFIED
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS LESS THAN 1/4-INCH THICK	LAMINATED
BREAKS ALONG DEFINITE PLANES OF FRACTURE WITH LITTLE RESISTANCE TO FRACTURING	FISSURED
FRACTURE PLANES APPEAR POLISHED OR GLOSSY, SOMETIMES STRIATED	SLICKENSIDED
COHESIVE SOIL THAT CAN BE BROKEN DOWN INTO SMALLER ANGULAR LUMPS WHICH RESIST FURTHER BREAKDOWN	BLOCKY
INCLUSION OF SMALL POCKETS OF DIFFERENT SOIL, SUCH AS SMALL LENSES OF SAND SCATTERED THROUGH A MASS OF CLAY	LENSED
SAME COLOR AND MATERIAL THROUGHOUT	HOMOGENOUS

CEMENTATION/INDURATION DESCRIPTIONS

FIELD TEST	DESCRIPTION
CRUMBLES OR BREAKS WITH HANDLING OR LITTLE FINGER PRESSURE	WEAKLY CEMENTED/INDURATED
CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE	MODERATELY CEMENTED/INDURATED
WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE	STRONGLY CEMENTED/INDURATED

IGNEOUS/METAMORPHIC ROCK STRENGTH DESCRIPTIONS

FIELD TEST	DESCRIPTION
MATERIAL CRUMBLES WITH BARE HAND	WEAK
MATERIAL CRUMBLES UNDER BLOWS FROM GEOLOGY HAMMER	MODERATELY WEAK
1/8-INCH INDENTATIONS WITH SHARP END FROM GEOLOGY HAMMER	MODERATELY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **ONE** BLOW FROM GEOLOGY HAMMER	STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **COUPLE** BLOWS FROM GEOLOGY HAMMER	VERY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **MANY** BLOWS FROM GEOLOGY HAMMER	EXTREMELY STRONG

IGNEOUS/METAMORPHIC ROCK WEATHERING DESCRIPTIONS

DEGREE OF DECOMPOSITION	FIELD RECOGNITION	ENGINEERING PROPERTIES
SOIL	DISCOLORED, CHANGED TO SOIL, FABRIC DESTROYED	EASY TO DIG
COMPLETELY WEATHERED	DISCOLORED, CHANGED TO SOIL, FABRIC MAINLY PRESERVED	EXCAVATED BY HAND OR RIPPING (Saprolite)
HIGHLY WEATHERED	DISCOLORED, HIGHLY FRACTURED, FABRIC ALTERED AROUND FRACTURES	EXCAVATED BY HAND OR RIPPING, WITH SLIGHT DIFFICULTY
MODERATELY WEATHERED	DISCOLORED, FRACTURES, INTACT ROCK-NOTICEABLY WEAKER THAN FRESH ROCK	EXCAVATED WITH DIFFICULTY WITHOUT EXPLOSIVES
SLIGHTLY WEATHERED	MAY BE DISCOLORED, SOME FRACTURES, INTACT ROCK-NOT NOTICEABLY WEAKER THAN FRESH ROCK	REQUIRES EXPLOSIVES FOR EXCAVATION, WITH PERMEABLE JOINTS AND FRACTURES
FRESH	NO DISCOLORATION, OR LOSS OF STRENGTH	REQUIRES EXPLOSIVES

IGNEOUS/METAMORPHIC ROCK JOINT/FRACTURE DESCRIPTIONS

FIELD TEST	DESCRIPTION
NO OBSERVED FRACTURES	UNFRACTURED/UNJOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1 TO 3 FOOT INTERVALS	SLIGHTLY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 4-INCH TO 1 FOOT INTERVALS	MODERATELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1-INCH TO 4-INCH INTERVALS WITH SCATTERED FRAGMENTED INTERVALS	INTENSELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT LESS THAN 1-INCH INTERVALS; MOSTLY RECOVERED AS CHIPS AND FRAGMENTS	VERY INTENSELY FRACTURED/JOINTED

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KEY TO LOGS

Figure A1

PROJECT NO. **S2573-05-01** PROJECT NAME **John Adams Academy Sports Fields**

TEST PIT TP1

ELEV. (MSL.) **520** DATE COMPLETED **04/18/2023**

ENG./GEO. **A. Orton** DRILLER **Geocon**

EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP1 0-5			SC	**FILL** Loose, damp to moist, yellowish brown Clayey SAND with Gravel; some fine to coarse sand; some clay; few gravel; trace cobbles to boulders (angular, brown to dark gray laminated slate and light gray, fine grained volcanic tuff, to 1 1/2 ft. diam.)				GSA
1									
2									
3	TP1 3			CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Medium stiff, moist, reddish brown Lean CLAY; trace fine sand		114.9	15.2	
4									
5	TP1 5			CL	Medium stiff, moist, dark gray to green Lean CLAY				
6	TP1 6							19.6	
7					**SALT SPRINGS SLATE** Completely weathered, weakly indurated, damp, gray to brown laminated SLATE with oxide staining; excavates as gravel and cobbles				
8	TP1 8				- Becomes strong; highly to moderately weathered				NOA

REFUSAL AT 8 1/2 FEET
GROUNDWATER NOT ENCOUNTERED
BACKFILLED WITH EXCAVATED MATERIAL

Figure A2, Log of Test Pit, page 1 of 1

IN PROGRESS S2573-05-01 JAA SPORTS FIELDS.GPJ 05/12/23

GEOCON

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... DISTURBED OR BAG SAMPLE
- ... STANDARD PENETRATION TEST
- ... CHUNK SAMPLE
- ... DRIVE SAMPLE (UNDISTURBED)
- ... WATER TABLE OR SEEPAGE

PROJECT NO. **S2573-05-01** PROJECT NAME **John Adams Academy Sports Fields**

TEST PIT TP2

ELEV. (MSL.) **516** DATE COMPLETED **04/18/2023**

ENG./GEO. **A. Orton** DRILLER **Geocon**

EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP2 0-3			CL	**FILL** Soft, damp, brown Sandy CLAY; trace to little gravel and cobbles (angular)				
1									
2				CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Medium stiff, moist, brown Sandy Lean CLAY; trace to little gravel and cobbles (angular); trace boulders - 3" cemented layer at ~2 1/2'				
3	TP2 2.75 TP2 3							14.2	
4			∇		- Becomes reddish brown; decrease in gravel and cobbles - Seeps in sidewalls of excavation from 4 1/2' to 12'; becomes soft, moist to wet				
5									
6	TP2 6							14.2	
7									
8									
9									
10					- Pockets of dark gray CLAY from 10 1/2 to 12'				
11	TP2 11.5							21.1	
12					TOTAL DEPTH 12 FEET GROUNDWATER SEEPS FROM ~4 1/2 to 12 FEET BACKFILLED WITH EXCAVATED MATERIAL				

Figure A3, Log of Test Pit, page 1 of 1

IN PROGRESS S2573-05-01 JAA SPORTS FIELDS.GPJ 05/12/23

GEOCON

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... DISTURBED OR BAG SAMPLE
- ... STANDARD PENETRATION TEST
- ... CHUNK SAMPLE
- ... DRIVE SAMPLE (UNDISTURBED)
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S2573-05-01** PROJECT NAME **John Adams Academy Sports Fields**

TEST PIT TP3

ELEV. (MSL.) **517** DATE COMPLETED **04/18/2023**

ENG./GEO. **A. Orton** DRILLER **Geocon**

EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP3 0-4		CL	**FILL** Soft, damp, brown Sandy CLAY; few gravel and cobbles (angular)				
1								
2	TP3 2		CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Medium stiff, moist to wet, reddish brown sandy Lean CLAY; some fine to coarse sand; little to some gravel and cobbles (angular, to 8" diam.)			10.8	
3	TP3 3			- Becomes brown			17.9	
4		∇		- Seep at 4'				
5				- Boulder (~2' diam.)				
6			CL	Soft, moist to wet, reddish brown CLAY; trace sand; dark gray CLAY pockets; seeps from ~6 1/2 to 9'				
7								
8	TP3 8						23.3	
9				**SALT SPRINGS SLATE** Completely weathered, weakly indurated, damp, gray to brown laminated SLATE with oxide staining; excavates as gravel and cobbles; moderately strong to strong				

TOTAL DEPTH 9 1/2 FEET
GROUNDWATER SEEPS AT ~4 FEET
AND FROM ~6 1/2 to 9 FEET
BACKFILLED WITH EXCAVATED MATERIAL

Figure A4, Log of Test Pit, page 1 of 1

GEOCON

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... DISTURBED OR BAG SAMPLE
- ... STANDARD PENETRATION TEST
- ... CHUNK SAMPLE
- ... DRIVE SAMPLE (UNDISTURBED)
- ... WATER TABLE OR SEEPAGE

TEST PIT TP4

ELEV. (MSL.) **523** DATE COMPLETED **04/18/2023**
ENG./GEO. **A. Orton** DRILLER **Geocon**
EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP4 0-4				**AGGREGATE BASE** ~6"				CR
1				CL	**FILL** Soft, damp, light brown Sandy CLAY				
2	TP4 2 TP4 2			SC	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Loose, moist, reddish brown Clayey SAND; some fine sand; little medium to coarse sand; some clay; trace gravel and cobbles (angular)			16.5	PI, GSA
3									
4					**SALT SPRINGS SLATE** Completely weathered, weakly indurated, damp, gray to brown laminated SLATE with oxide staining; excavates as gravel and cobbles - Becomes highly to moderately weathered				

TOTAL DEPTH 4 1/2 FEET
GROUNDWATER NOT ENCOUNTERED
BACKFILLED WITH EXCAVATED MATERIAL

Figure A5, Log of Test Pit, page 1 of 1

GEOCON

SAMPLE SYMBOLS
... SAMPLING UNSUCCESSFUL
... DISTURBED OR BAG SAMPLE
... STANDARD PENETRATION TEST
... CHUNK SAMPLE
... DRIVE SAMPLE (UNDISTURBED)
... WATER TABLE OR SEEPAGE

PROJECT NO. **S2573-05-01** PROJECT NAME **John Adams Academy Sports Fields**

TEST PIT TP5

ELEV. (MSL.) **523** DATE COMPLETED **04/18/2023**

ENG./GEO. **A. Orton** DRILLER **Geocon**

EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP5 0-3			CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Medium stiff, damp, reddish brown Silty Lean CLAY; trace fine sand; few gravel and cobbles (angular)				CP
1	TP5 1								
2	TP5 2				- Becomes moist, yellowish brown; some gravel and cobbles (angular)			12.8	
3					**SALT SPRINGS SLATE** Completely weathered, weakly indurated, damp, gray to brown laminated SLATE with oxide staining; excavates as gravel and cobbles				
4					- Becomes highly to moderately weathered				
					REFUSAL AT 4 1/2 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH EXCAVATED MATERIAL				

Figure A6, Log of Test Pit, page 1 of 1

GEOCON

SAMPLE SYMBOLS
... SAMPLING UNSUCCESSFUL
... DISTURBED OR BAG SAMPLE
... STANDARD PENETRATION TEST
... CHUNK SAMPLE
... DRIVE SAMPLE (UNDISTURBED)
... WATER TABLE OR SEEPAGE

TEST PIT TP6

ELEV. (MSL.) **543** DATE COMPLETED **04/18/2023**

ENG./GEO. **A. Orton** DRILLER **Geocon**

EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP6 0-1 TP6 0			CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Medium stiff, damp, brown Sandy Lean CLAY; some fine sand; trace gravel (angular)				
1									
2					**SALT SPRINGS SLATE** Highly weathered, weakly indurated, damp, brown to red laminated SLATE; excavates as gravel and cobbles - Becomes moderately weathered; light brown pockets				
3									
4									

REFUSAL AT 4 1/2 FEET
GROUNDWATER NOT ENCOUNTERED
BACKFILLED WITH EXCAVATED MATERIAL

Figure A7, Log of Test Pit, page 1 of 1

IN PROGRESS S2573-05-01 JAA SPORTS FIELDS.GPJ 05/12/23

GEOCON

SAMPLE SYMBOLS
... SAMPLING UNSUCCESSFUL
... DISTURBED OR BAG SAMPLE
... STANDARD PENETRATION TEST
... CHUNK SAMPLE
... DRIVE SAMPLE (UNDISTURBED)
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **S2573-05-01** PROJECT NAME **John Adams Academy Sports Fields**

TEST PIT TP7

ELEV. (MSL.) **538** DATE COMPLETED **04/19/2023**

ENG./GEO. **A. Orton** DRILLER **Geocon**

EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP7 0-3			CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Soft, moist, brown to reddish brown Sandy Lean CLAY; some fine sand; trace gravel and cobbles (angular)				
1									
	TP7 1.5 TP7 1.5				- Pockets of gray CLAY (completely weathered bedrock)			18.2	PI, GSA
2					**SALT SPRINGS SLATE** Completely weathered, moderately weak, moist, brown to red, laminated to stratified SLATE with oxide staining; excavates as gravel and cobbles - Becomes highly to moderately weathered; some light green pockets				
3									
4	TP7 4								NOA
5					- Becomes moderately weathered, very strong				

TOTAL DEPTH 5 1/2 FEET
GROUNDWATER NOT ENCOUNTERED
BACKFILLED WITH EXCAVATED MATERIAL

Figure A8, Log of Test Pit, page 1 of 1

GEOCON

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... DISTURBED OR BAG SAMPLE
- ... STANDARD PENETRATION TEST
- ... CHUNK SAMPLE
- ... DRIVE SAMPLE (UNDISTURBED)
- ... WATER TABLE OR SEEPAGE

PROJECT NO. **S2573-05-01** PROJECT NAME **John Adams Academy Sports Fields**

TEST PIT TP8

ELEV. (MSL.) **539** DATE COMPLETED **04/19/2023**

ENG./GEO. **A. Orton** DRILLER **Geocon**

EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP8 0-1			CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock)				EI, R
	TP8 0.5				Medium stiff, moist, strong brown Sandy Lean CLAY; few to little sand; trace gravel and cobbles (angular)				
1	TP8 1							10.8	
2					**SALT SPRINGS SLATE** Completely weathered, weakly to moderately indurated, damp, brown to red, laminated to massive SLATE with oxide staining; excavates as gravel and cobbles				
3	TP8 3				- Becomes highly to moderately weathered; green				

TOTAL DEPTH 3 1/2 FEET
GROUNDWATER NOT ENCOUNTERED
BACKFILLED WITH EXCAVATED MATERIAL

Figure A9, Log of Test Pit, page 1 of 1

IN PROGRESS S2573-05-01 JAA SPORTS FIELDS.GPJ 05/12/23

GEOCON

SAMPLE SYMBOLS			
	... SAMPLING UNSUCCESSFUL	... STANDARD PENETRATION TEST	... DRIVE SAMPLE (UNDISTURBED)
	... DISTURBED OR BAG SAMPLE	... CHUNK SAMPLE	... WATER TABLE OR SEEPAGE

PROJECT NO. **S2573-05-01** PROJECT NAME **John Adams Academy Sports Fields**

TEST PIT TP9

ELEV. (MSL.) **549** DATE COMPLETED **04/19/2023**

ENG./GEO. **A. Orton** DRILLER **Geocon**

EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket** HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP9 0-1.5			CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Medium stiff, damp to moist, red Sandy Lean CLAY; some fine sand				
1	TP9 1				- Becomes gray CLAY			25.0	
2					**SALT SPRINGS SLATE** Highly to moderately weathered, moderately indurated, damp, light brown to green, laminated to massive SLATE with oxide staining; excavates as gravel and cobbles				
3	TP9 3								
4					TOTAL DEPTH 4 1/2 FEET GROUNDWATER NOT ENCOUNTERED BACKFILLED WITH EXCAVATED MATERIAL				

Figure A10, Log of Test Pit, page 1 of 1

IN PROGRESS S2573-05-01 JAA SPORTS FIELDS.GPJ 05/12/23

GEOCON

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... DISTURBED OR BAG SAMPLE
- ... STANDARD PENETRATION TEST
- ... CHUNK SAMPLE
- ... DRIVE SAMPLE (UNDISTURBED)
- ... WATER TABLE OR SEEPAGE

PROJECT NO. **S2573-05-01** PROJECT NAME **John Adams Academy Sports Fields**

TEST PIT TP10

ELEV. (MSL.) **554**	DATE COMPLETED **04/19/2023**
ENG./GEO. **A. Orton**	DRILLER **Geocon**
EQUIPMENT **John Deere 310L Backhoe w/ 24" bucket**	HAMMER TYPE

DEPTH IN FEET	SAMPLE INTERVAL & RECOVERY	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)	ADDITIONAL TESTS
0	TP10 0-3			CL	**COPPER HILL VOLCANICS** (completely decomposed metavolcanic rock) Medium stiff, moist, red Sandy Lean CLAY; some fine sand; trace gravel and cobbles (angular)				GSA
1									
	TP10 1.5							16.2	
2	TP10 2				- Pockets of light brown to gray CLAY (completely decomposed bedrock)				
3					**SALT SPRINGS SLATE** Completely weathered, weakly indurated, damp, gray to brown laminated to massive/blocky SLATE with oxide staining; excavates as gravel and cobbles				
4	TP10 4				- Becomes very strong, unfractured				

REFUSAL AT 4 1/2 FEET
GROUNDWATER NOT ENCOUNTERED
BACKFILLED WITH EXCAVATED MATERIAL

Figure A11, Log of Test Pit, page 1 of 1

IN PROGRESS S2573-05-01 JAA SPORTS FIELDS.GPJ 05/12/23

GEOCON

SAMPLE SYMBOLS
- ... SAMPLING UNSUCCESSFUL
- ... DISTURBED OR BAG SAMPLE
- ... STANDARD PENETRATION TEST
- ... CHUNK SAMPLE
- ... DRIVE SAMPLE (UNDISTURBED)
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT1	Ref. EL:	516.00
		Bottom EL:	515.50
		Total Soak Time:	3 hr 19 min
		Water Height in Borehole (cm):	0.00

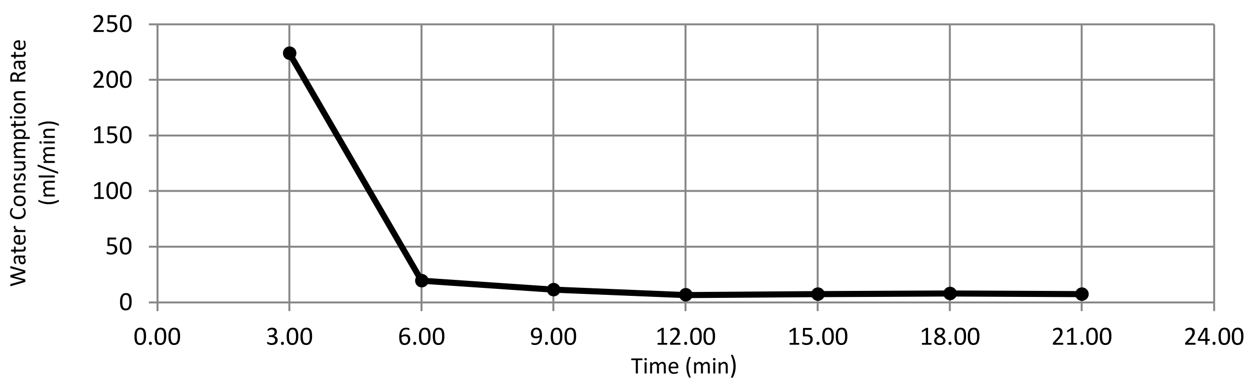
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	0.50	ft	=	15.24	cm
Dist. Btwn Reservoir & Top of Borehole:	2.33	ft	=	71.02	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	67.8434	cm
Head Height (h):	9.20	cm
Distance Btwn Constant Head and Water Table (L):	3651.56	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		6406			
2	3.00	3.00	5734	672	672	224.00
3	6.00	3.00	5676	58	730	19.33
4	9.00	3.00	5642	34	764	11.33
5	12.00	3.00	5622	20	784	6.67
6	15.00	3.00	5600	22	806	7.33
7	18.00	3.00	5576	24	830	8.00
8	21.00	3.00	5554	22	852	7.33

*1 ml = 1 g

Steady Flow Rate (Q): 7.33 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.01 cm/min 0.3 in/hr

Figure A12

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT2	Ref. EL:	517.00
		Bottom EL:	516.34
		Total Soak Time:	3 hr 00 min
		Water Height in Borehole (cm):	3.18

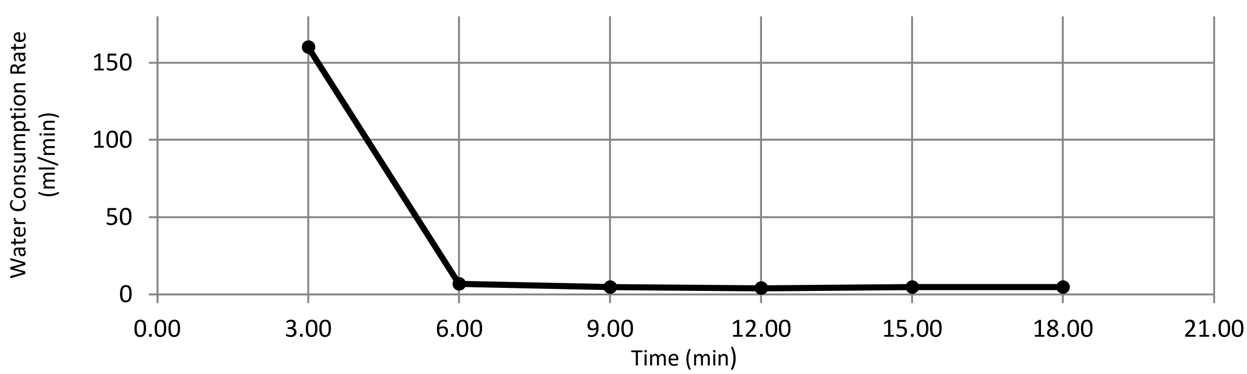
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	0.66	ft	=	20.12	cm
Dist. Btwn Reservoir & Top of Borehole:	2.33	ft	=	71.02	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	72.7202	cm
Head Height (h):	9.22	cm
Distance Btwn Constant Head and Water Table (L):	3646.70	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		7278			
2	3.00	3.00	6798	480	480	160.00
3	6.00	3.00	6778	20	500	6.67
4	9.00	3.00	6764	14	514	4.67
5	12.00	3.00	6752	12	526	4.00
6	15.00	3.00	6738	14	540	4.67
7	18.00	3.00	6724	14	554	4.67

*1 ml = 1 g

Steady Flow Rate (Q): 4.67 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.01 cm/min 0.2 in/hr

Figure A13

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT3	Ref. EL:	519.00
		Bottom EL:	518.25

Total Soak Time: 2 hr 19 min

Water Height in Borehole (cm): 7.62

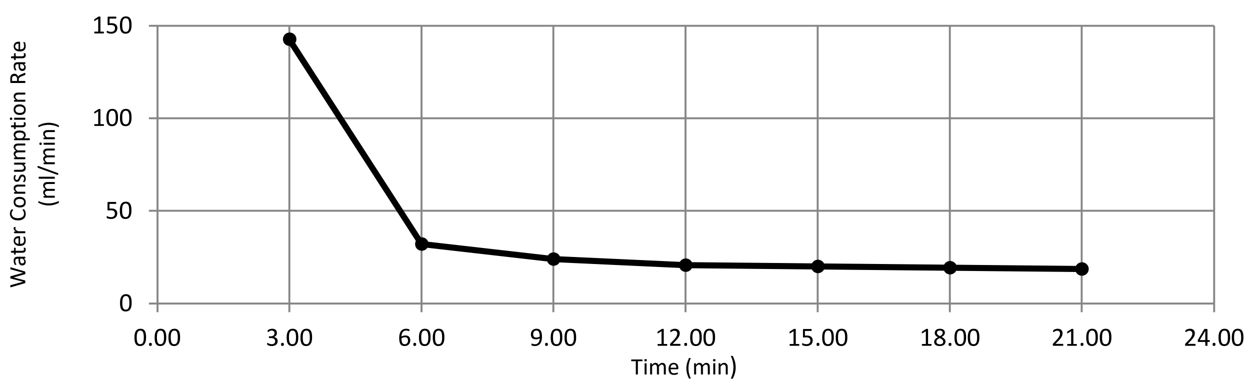
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	0.75	ft	=	22.86	cm
Dist. Btwn Reservoir & Top of Borehole:	2.42	ft	=	73.76	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	78.2066	cm
Head Height (h):	9.23	cm
Distance Btwn Constant Head and Water Table (L):	3643.97	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		7780			
2	3.00	3.00	7352	428	428	142.67
3	6.00	3.00	7256	96	524	32.00
4	9.00	3.00	7184	72	596	24.00
5	12.00	3.00	7122	62	658	20.67
6	15.00	3.00	7062	60	718	20.00
7	18.00	3.00	7004	58	776	19.33
8	21.00	3.00	6948	56	832	18.67
9	24.00	3.00	6892	56	888	18.67
10	27.00	3.00	6838	54	942	18.00

*1 ml = 1 g

Steady Flow Rate (Q): 18.67 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.03 cm/min 0.7 in/hr

Figure A14

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT4	Ref. EL:	521.00
		Bottom EL:	520.00
		Total Soak Time:	2 hr 45 min
		Water Height in Borehole (cm):	6.99

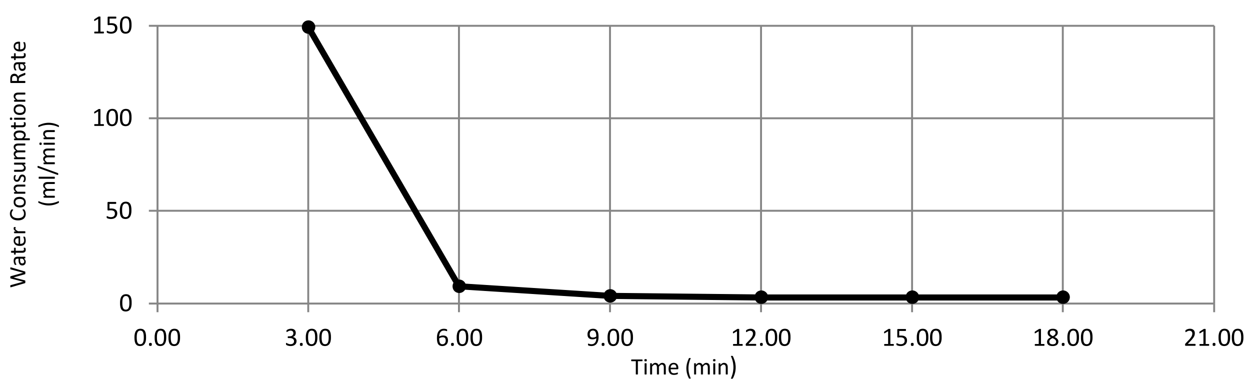
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	1.00	ft	=	30.48	cm
Dist. Btwn Reservoir & Top of Borehole:	2.33	ft	=	71.02	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	83.0834	cm
Head Height (h):	9.25	cm
Distance Btwn Constant Head and Water Table (L):	3636.37	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		6460			
2	3.00	3.00	6012	448	448	149.33
3	6.00	3.00	5984	28	476	9.33
4	9.00	3.00	5972	12	488	4.00
5	12.00	3.00	5962	10	498	3.33
6	15.00	3.00	5952	10	508	3.33
7	18.00	3.00	5942	10	518	3.33

*1 ml = 1 g

Steady Flow Rate (Q): 3.33 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.01 cm/min 0.1 in/hr

Figure A15

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT5	Ref. EL:	542.00
		Bottom EL:	541.00

Total Soak Time: 2 hr 45 min
Water Height in Borehole (cm): 0.64

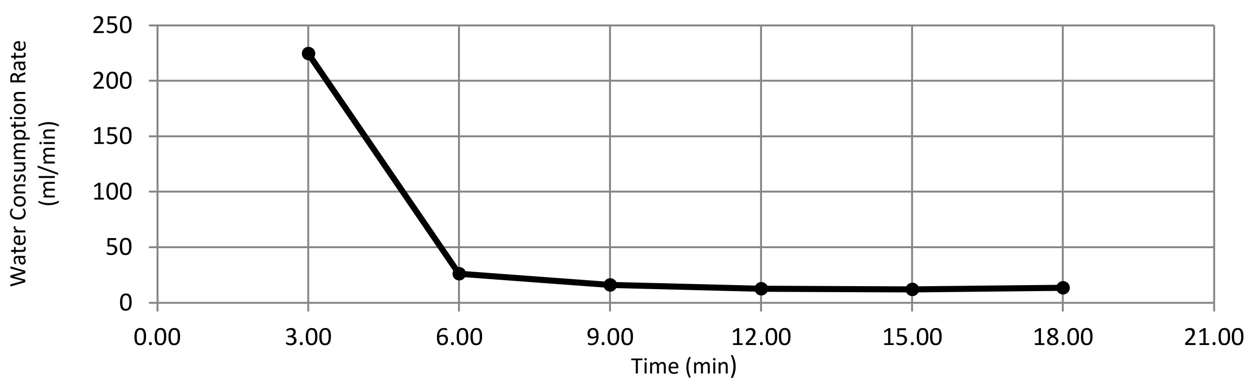
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	1.00	ft	=	30.48	cm
Dist. Btwn Reservoir & Top of Borehole:	2.33	ft	=	71.02	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	83.0834	cm
Head Height (h):	9.25	cm
Distance Btwn Constant Head and Water Table (L):	3636.37	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		8726			
2	3.00	3.00	8052	674	674	224.67
3	6.00	3.00	7974	78	752	26.00
4	9.00	3.00	7926	48	800	16.00
5	12.00	3.00	7888	38	838	12.67
6	15.00	3.00	7852	36	874	12.00
7	18.00	3.00	7812	40	914	13.33
8	21.00	3.00	7786	26	940	8.67
9	24.00	3.00	7750	36	976	12.00
10	27.00	3.00	7716	34	1010	11.33
11	30.00	3.00	7682	34	1044	11.33

*1 ml = 1 g

Steady Flow Rate (Q): 11.33 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.02 cm/min 0.4 in/hr

Figure A16

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT6	Ref. EL:	
		Bottom EL:	

TEST NOT PERFORMED: REFUSAL ON SHALLOW BEDROCK

Total Soak Time:	
Water Height in Borehole (cm):	

Borehole Diameter (2r):	0.00	in	=	0.00	cm
Borehole Depth (H):		ft	=		cm
Dist. Btwn Reservoir & Top of Borehole:		ft	=		cm
Depth to Water Table (s):		ft	=		cm
Height APM Raised from Bottom:		in	=		cm

Distance Btwn Reservoir and APM (D):		cm
Head Height (h):		cm
Distance Btwn Constant Head and Water Table (L):		cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						

*1 ml = 1 g

Steady Flow Rate (Q): ______ ml/min

Field-Saturated Hydraulic Conductivity:

K_{sat} = ______ cm/min ______ in/hr

Figure A17

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT7	Ref. EL:	549.00
		Bottom EL:	548.17

Total Soak Time: 3 hr 52 min
Water Height in Borehole (cm): 5.08

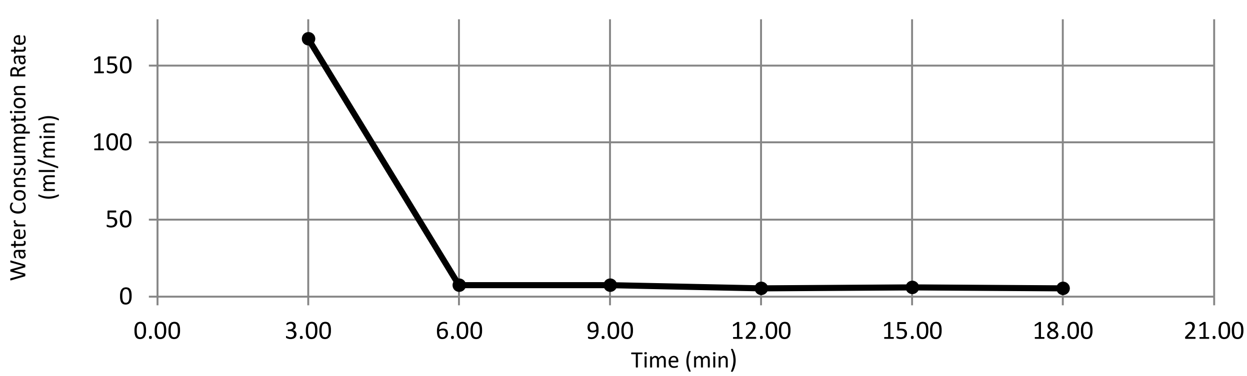
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	0.83	ft	=	25.39	cm
Dist. Btwn Reservoir & Top of Borehole:	2.33	ft	=	71.02	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	77.99324	cm
Head Height (h):	9.23	cm
Distance Btwn Constant Head and Water Table (L):	3641.44	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		7468			
2	3.00	3.00	6966	502	502	167.33
3	6.00	3.00	6944	22	524	7.33
4	9.00	3.00	6922	22	546	7.33
5	12.00	3.00	6906	16	562	5.33
6	15.00	3.00	6888	18	580	6.00
7	18.00	3.00	6872	16	596	5.33
8	21.00	3.00	6856	16	612	5.33

*1 ml = 1 g

Steady Flow Rate (Q): 5.33 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.01 cm/min 0.2 in/hr

Figure A18

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT8	Ref. EL:	548.00
		Bottom EL:	547.00
		Total Soak Time:	4 hr 23 min
		Water Height in Borehole (cm):	0.00

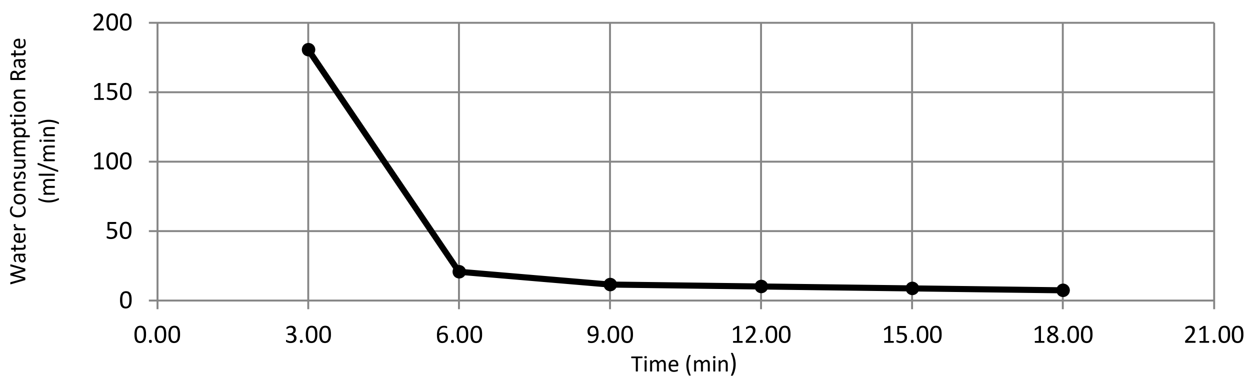
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	1.00	ft	=	30.48	cm
Dist. Btwn Reservoir & Top of Borehole:	2.33	ft	=	71.02	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	83.0834	cm
Head Height (h):	9.25	cm
Distance Btwn Constant Head and Water Table (L):	3636.37	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		6546			
2	3.00	3.00	6004	542	542	180.67
3	6.00	3.00	5942	62	604	20.67
4	9.00	3.00	5908	34	638	11.33
5	12.00	3.00	5878	30	668	10.00
6	15.00	3.00	5852	26	694	8.67
7	18.00	3.00	5830	22	716	7.33
8	21.00	3.00	5808	22	738	7.33
9	24.00	3.00	5786	22	760	7.33

*1 ml = 1 g

Steady Flow Rate (Q): 7.33 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.01 cm/min 0.3 in/hr

Figure A19

Aardvark Permeameter Data Analysis

GEOCON

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT9	Ref. EL:	551.00
		Bottom EL:	549.92
		Total Soak Time:	5 hr 29 min
		Water Height in Borehole (cm):	0.00

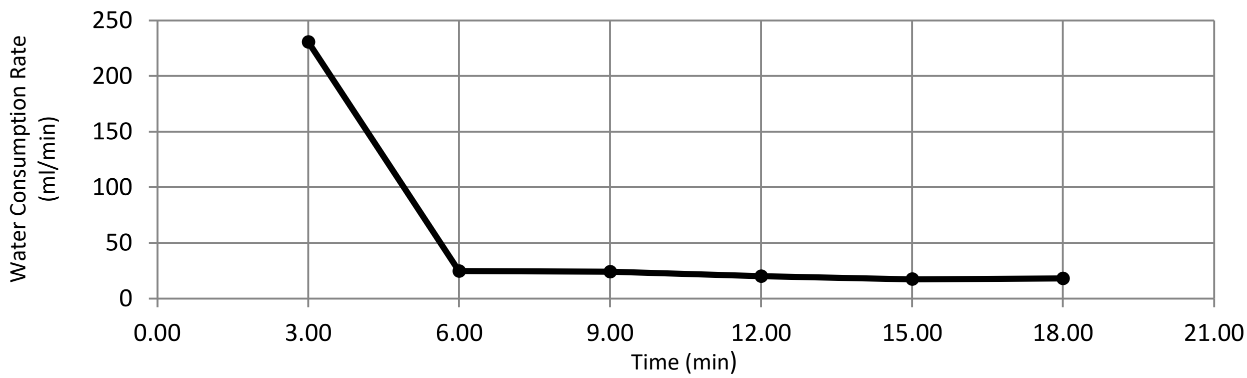
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	1.08	ft	=	33.01	cm
Dist. Btwn Reservoir & Top of Borehole:	2.42	ft	=	73.76	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	88.35644	cm
Head Height (h):	9.27	cm
Distance Btwn Constant Head and Water Table (L):	3633.86	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		6812			
2	3.00	3.00	6120	692	692	230.67
3	6.00	3.00	6046	74	766	24.67
4	9.00	3.00	5974	72	838	24.00
5	12.00	3.00	5914	60	898	20.00
6	15.00	3.00	5862	52	950	17.33
7	18.00	3.00	5808	54	1004	18.00
8	21.00	3.00	5754	54	1058	18.00

*1 ml = 1 g

Steady Flow Rate (Q): 18.00 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.03 cm/min 0.7 in/hr

Figure A20

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT10	Ref. EL:	552.00
		Bottom EL:	551.08
		Total Soak Time:	5 hr 38 min
		Water Height in Borehole (cm):	0.00

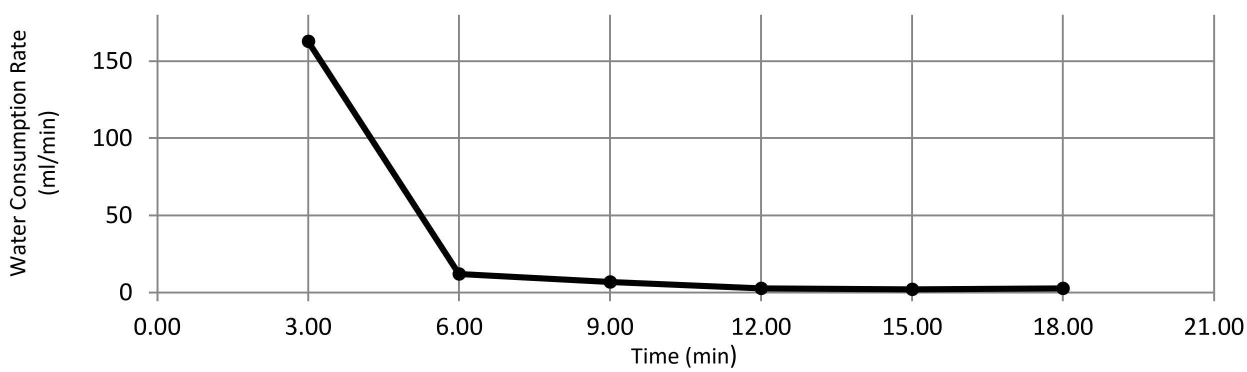
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	0.92	ft	=	28.04	cm
Dist. Btwn Reservoir & Top of Borehole:	2.42	ft	=	73.76	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	83.3882	cm
Head Height (h):	9.25	cm
Distance Btwn Constant Head and Water Table (L):	3638.81	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		5404			
2	3.00	3.00	4916	488	488	162.67
3	6.00	3.00	4880	36	524	12.00
4	9.00	3.00	4860	20	544	6.67
5	12.00	3.00	4852	8	552	2.67
6	15.00	3.00	4846	6	558	2.00
7	18.00	3.00	4838	8	566	2.67
8	21.00	3.00	4830	8	574	2.67

*1 ml = 1 g

Steady Flow Rate (Q): 2.67 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.00 cm/min 0.1 in/hr

Figure A21

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT11	Ref. EL:	553.00
		Bottom EL:	552.65
		Total Soak Time:	4 hr 6 min
		Water Height in Borehole (cm):	0.00

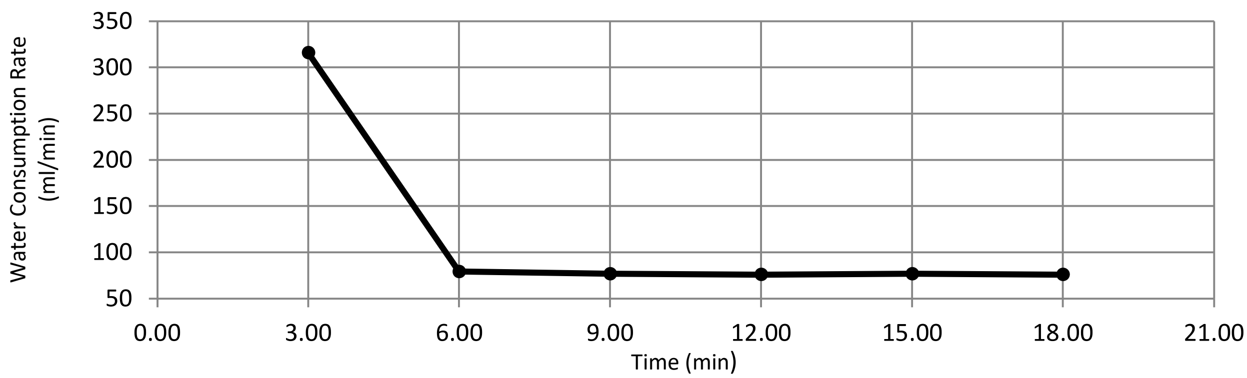
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	0.35	ft	=	10.67	cm
Dist. Btwn Reservoir & Top of Borehole:	2.33	ft	=	71.02	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	63.2714	cm
Head Height (h):	9.19	cm
Distance Btwn Constant Head and Water Table (L):	3656.12	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		8758			
2	3.00	3.00	7810	948	948	316.00
3	6.00	3.00	7572	238	1186	79.33
4	9.00	3.00	7342	230	1416	76.67
5	12.00	3.00	7114	228	1644	76.00
6	15.00	3.00	6884	230	1874	76.67
7	18.00	3.00	6656	228	2102	76.00

*1 ml = 1 g

Steady Flow Rate (Q): 76.00 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.13 cm/min 3.0 in/hr

Figure A22

GEOCON

Aardvark Permeameter Data Analysis

Project Name:	JAA EDH Playing Fields GI	Date:	4/18/2023
Project Number:	S2573-05-01	By:	HL
Borehole Location:	IT12	Ref. EL:	554.00
		Bottom EL:	553.00
		Total Soak Time:	4 hr 23 min
		Water Height in Borehole (cm):	0.00

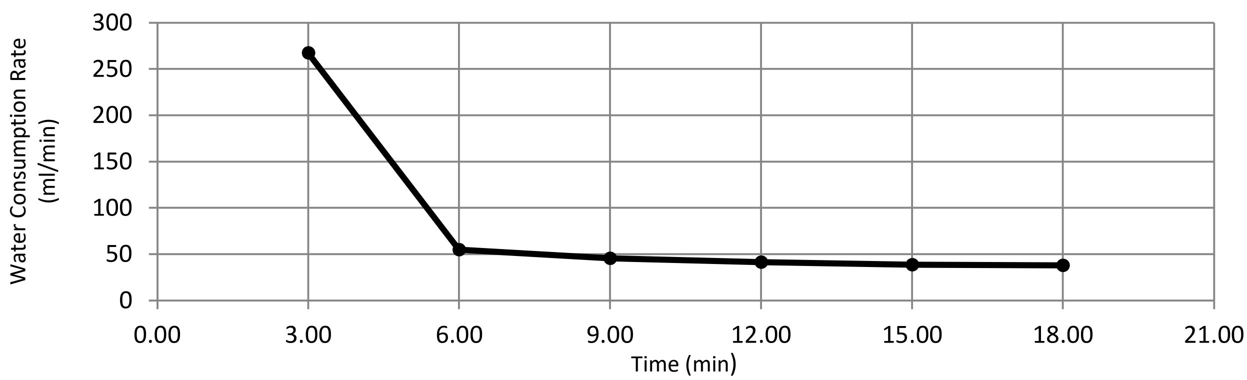
Borehole Diameter (2r):	3.25	in	=	8.26	cm
Borehole Depth (H):	1.00	ft	=	30.48	cm
Dist. Btwn Reservoir & Top of Borehole:	2.50	ft	=	76.20	cm
Depth to Water Table (s):	120.00	ft	=	3657.60	cm
Height APM Raised from Bottom:	0.00	in	=	0.00	cm

Distance Btwn Reservoir and APM (D):	88.265	cm
Head Height (h):	9.26	cm
Distance Btwn Constant Head and Water Table (L):	3636.38	cm

Reading	Time (min)	Time Elapsed (min)	Resevoir Water Weight (g)	Interval Water Consumption (g)	Total Water Consumption (g)	*Water Consumption Rate (ml/min)
1	0.00		8616			
2	3.00	3.00	7814	802	802	267.33
3	6.00	3.00	7650	164	966	54.67
4	9.00	3.00	7514	136	1102	45.33
5	12.00	3.00	7390	124	1226	41.33
6	15.00	3.00	7274	116	1342	38.67
7	18.00	3.00	7160	114	1456	38.00
8	21.00	3.00	7048	112	1568	37.33
9	24.00	3.00	6934	114	1682	38.00

*1 ml = 1 g

Steady Flow Rate (Q): 38.00 ml/min



Field-Saturated Hydraulic Conductivity:

Case 1: L/h > 3 K_{sat} = 0.06 cm/min 1.5 in/hr

Figure A23

APPENDIX B

APPENDIX B

LABORATORY TESTING PROGRAM

Laboratory tests were performed in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. Selected soil samples were tested for their in-place moisture and density, plasticity characteristics, grain size distribution, corrosion potential, expansion potential, pavement support characteristics, moisture-density relationship, and naturally occurring asbestos content. The results of the laboratory tests are presented below and on the following pages.

TABLE B1
EXPANSION INDEX TEST RESULTS
ASTM D4829

Sample Number	Depth (feet)	Moisture Content (%)		Expansion Index	Classification*
		Before Test	After Test		
TP8 BULK	0-1	8.5	18.2	16	Very Low

*Expansion Potential Classification per ASTM D4829.

TABLE B2
SOIL CORROSION PARAMETER TEST RESULTS
(CALIFORNIA TEST METHODS 643, 417, AND 422)

Sample No.	Sample Depth (ft.)	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm) / (%)	Sulfate (ppm) / (%)
TP4 BULK	0-4	6.5	3,220	2.8 / 0.0003	13.2 / 0.001

*Caltrans (2021) considers a site corrosive to foundation elements if one or more of the following conditions exist for the representative soil samples at the site:

- The pH is equal to or less than 5.5.
- The resistivity is equal to or less than 1,500 ohm-cm.
- Chloride concentration is equal to or greater than 500 parts per million (ppm).
- Sulfate concentration is equal to or greater than 1,500 ppm.

According to the *2022 California Building Code* Section 1904.1 which refers to the durability requirements of American Concrete Institute (ACI) 318 (Chapter 4), Type II cement may be used where soluble sulfate levels in soil are below 2,000 ppm.

TABLE B3
R-VALUE TEST RESULTS
ASTM D2844

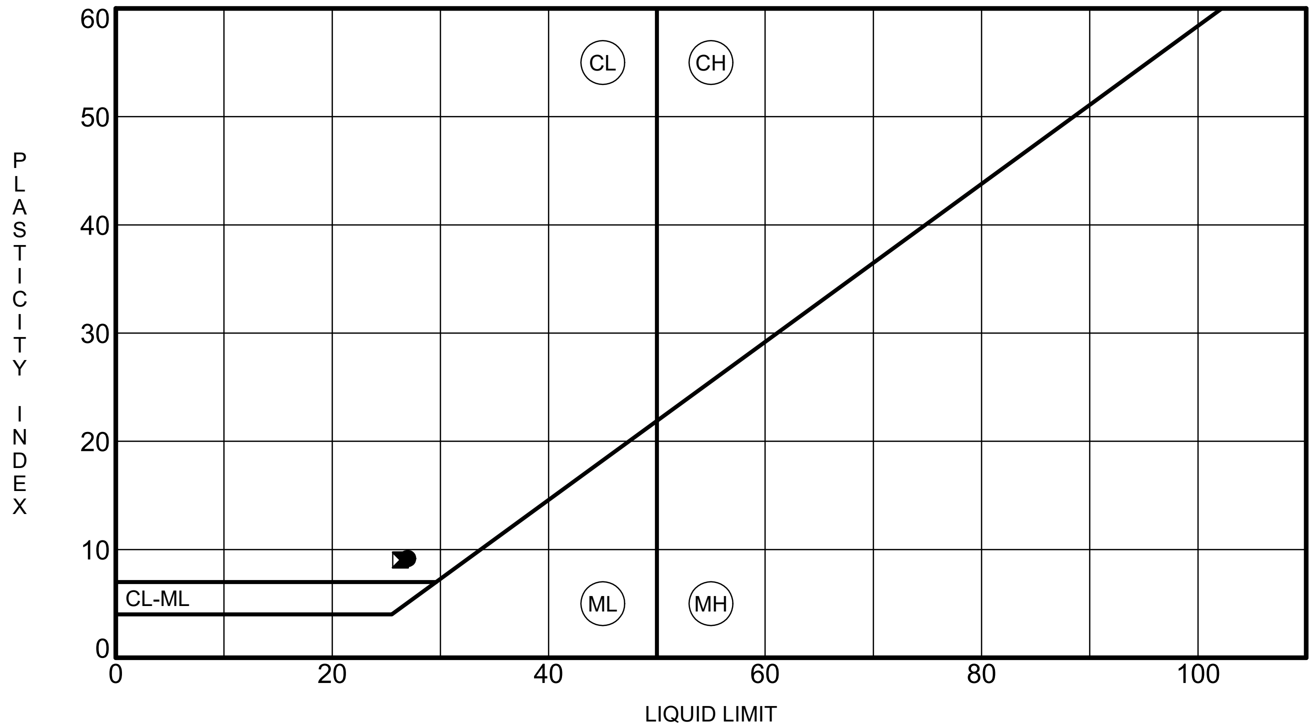
Sample Number	Depth (feet)	Average Dry Density (pcf)	Average Moisture Content (%)	R-Value
TP8 BULK	0-1	121.6	13.1	41

Sample ID	Depth (feet)	Liquid Limit	Plastic Limit	Plasticity Index	Expansion Index	%<#200 Sieve	Water Content (%)	Dry Density (pcf)
IT1-1.0							8.0	
IT11-1.0							5.4	
IT3-1.0							7.7	
IT5-1.0							6.8	
IT7-1.0							12.9	
IT9-1.0							13.6	
TP1-BULK						42.6		
TP1-3.0							15.2	114.9
TP1-6.0							19.6	
TP10-BULK						59.3		
TP10-1.5							16.2	
TP2-2.75							14.2	
TP2-6.0							14.2	
TP2-11.5							21.1	
TP3-2.0							10.8	
TP3-3.0							17.9	
TP3-8.0							23.3	
TP4-BULK		27	18	9				
TP4-2.0 TUBE						48.9	16.5	
TP4-2.0 BAG								
TP5-BULK								
TP5-2.0							12.8	
TP7-1.5 TUBE		26	17	9		50.2	18.2	
TP7-1.5 BAG								
TP8-BULK								
TP8-1.0							10.8	
TP9-1.0							25.0	

GEOCON
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Telephone: 916-852-9118

Summary of Laboratory Results

Project: John Adams Academy Sports Fields
Location: El Dorado County, California
Number: S2573-05-01
Figure: B1



	Sample No.	Liquid Limit	Plastic Limit	Plasticity Index	% Pass #200 Sieve	Unified Soil Classification Description	Preparation Method
●	**TP4-BULK**	**27**	**18**	**9**		**0-4**	**dry**
⊠	**TP7-1.5 TUBE**	**26**	**17**	**9**	**50.2**	**1.5 TUBE**	**dry**

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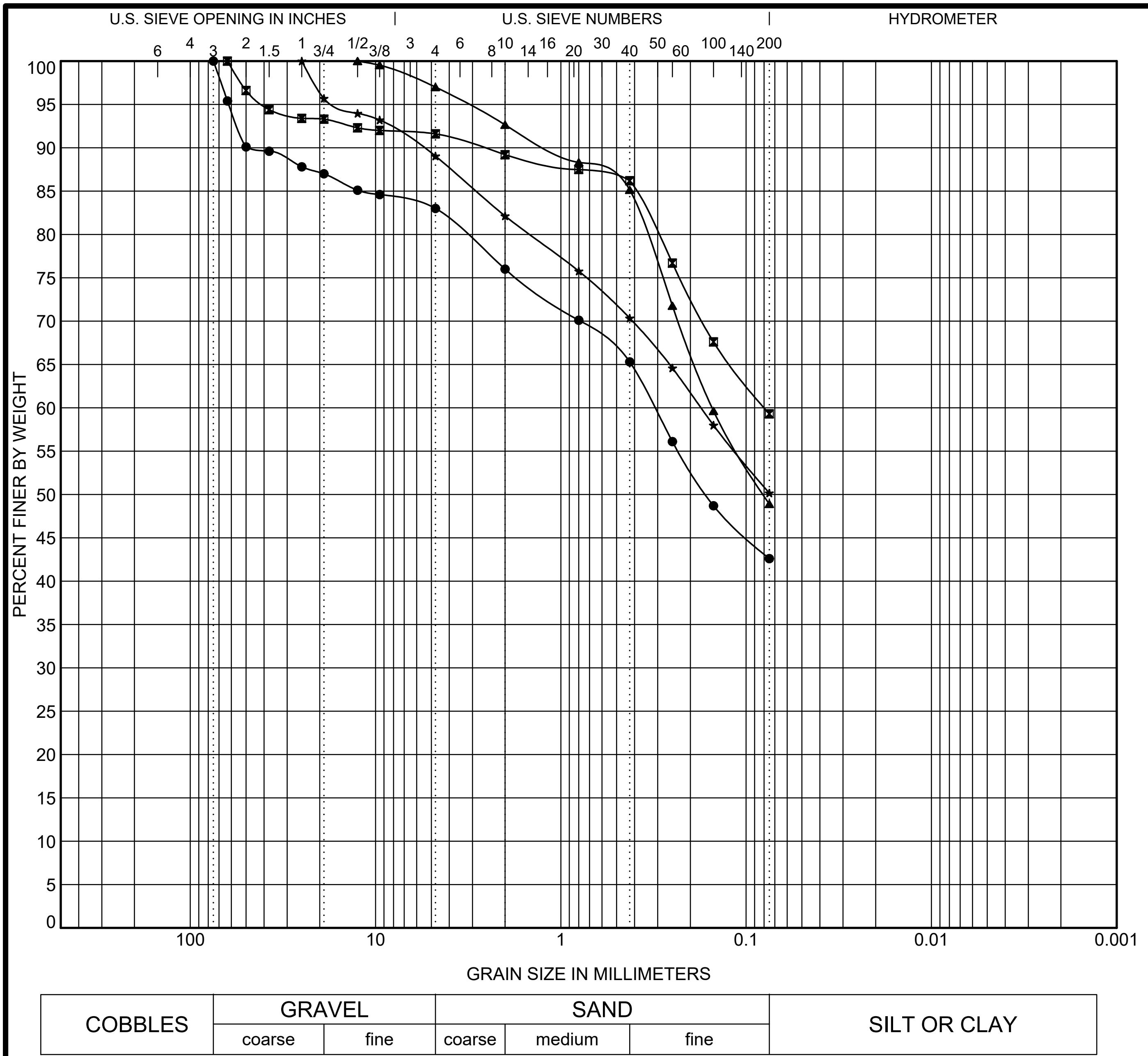
Geocon Consultants
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Telephone:

ATTERBERG LIMITS (ASTM D4318)

Project: John Adams Academy Sports Fields
Location: El Dorado County, California
Number: S2573-05-01
Figure: B2



	Sample No.	Classification	LL	PL	PI	Cc	Cu
●	**TP1-BULK**	**0-5**					
⧗	**TP10-BULK**	**0-3**					
▲	**TP4-2.0 TUBE**	**2.0 TUBE**					
★	**TP7-1.5 TUBE**	**1.5 TUBE**	**26**	**17**	**9**		

	Sample No.	D100	D50	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**TP1-BULK**	**75**	**0.164**			**17.0**	**40.4**	**42.6**	
⧗	**TP10-BULK**	**63**				**8.4**	**32.3**	**59.3**	
▲	**TP4-2.0 TUBE**	**12.5**	**0.08**			**3.0**	**48.1**	**48.9**	
★	**TP7-1.5 TUBE**	**25**				**11.0**	**38.9**	**50.2**	

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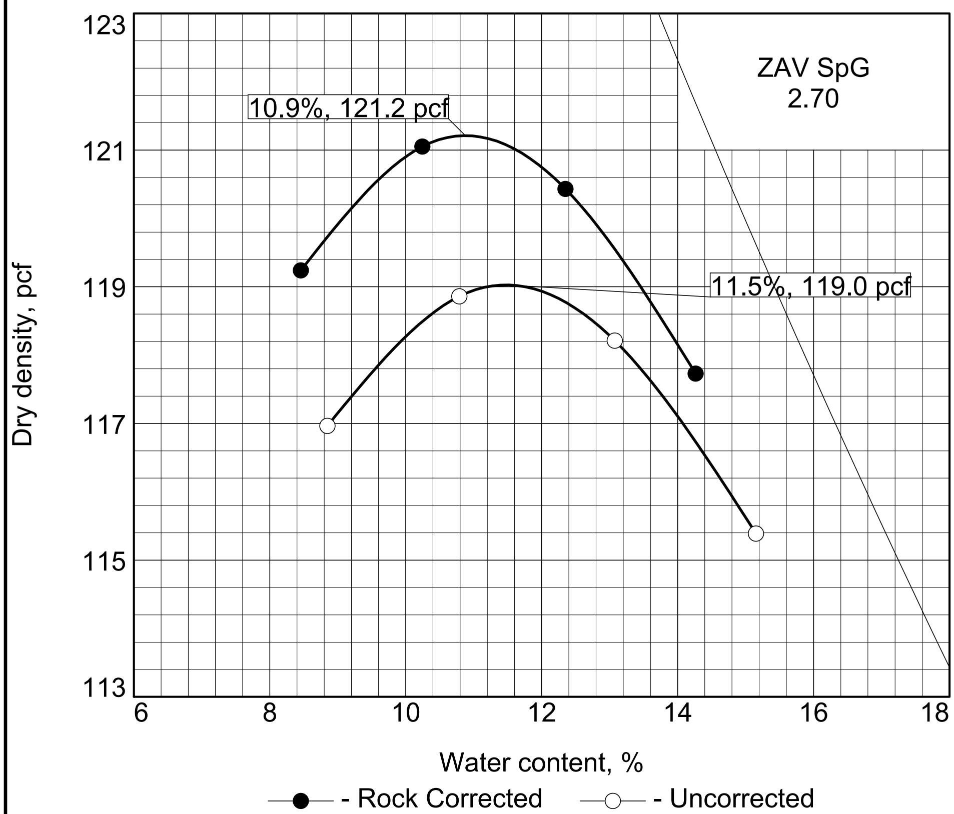
Geocon Consultants, Inc.
3160 Gold Valley Drive, Suite 800
Rancho Cordova, CA 95742
Telephone: 916-852-9118

GRAIN SIZE DISTRIBUTION (ASTM D422, D6913)

Project: John Adams Academy Sports Fields
Location: El Dorado County, California
Number: S2573-05-01
Figure: B3

GRAIN SIZE COPY 2 S2573-05-01 JAA SPORTS FIELDS.GPJ US LAB.GDT 5/11/23

COMPACTION TEST REPORT



Curve No. 1

Test Specification:
ASTM 1557 Method A 2023 Mold PM8
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Preparation Method ______

Hammer Wt. 10

Hammer Drop 18

Number of Layers 5

Blows per Layer 25

Mold Size 0.0333 cu. ft.

Test Performed on Material Passing #4 **Sieve**

NM ______ **LL** ______ **PI** ______

Sp.G. (ASTM D 854) 2.7

%>#4 7.9 **%<No.200** ______

USCS ______ **AASHTO** ______

Date Sampled ______

Date Tested 5/8/2023

Tested By HL

TESTING DATA

	1	2	3	4	5	6
WM + WS	4047.0	4017.0	3951.0	4035.0		
WM	2028.0	2028.0	2028.0	2028.0		
WW + T #1	2223.0	2221.0	2083.0	2307.0		
WD + T #1	1990.7	2028.5	1927.6	2044.6		
TARE #1	214.0	244.0	171.0	313.0		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	12.3	10.2	8.5	14.3		
DRY DENSITY	120.4	121.1	119.2	117.7		

ROCK CORRECTED TEST RESULTS	UNCORRECTED
Maximum dry density = 121.2 pcf	119.0 pcf
Optimum moisture = 10.9 %	11.5 %

Material Description

Light Reddish Brown Silty Lean CLAY with Rock

Remarks:

Project No. S2573-05-01 **Client:**

Project: Jon Adams Academy

○ **Sample Number:** TP5-Bulk (0-3')

GEOCON CONSULTANTS, INC.

Checked by: MR

Title: Lab Manager

Figure B4

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 042310253
Customer ID: GECN80
Customer PO: S2573-05-01
Project ID:

Attention: Alice Orton
Geocon Consultants, Inc.
3160 Gold Valley Drive
Suite 800
Rancho Cordova, CA 95742
Project: John Adams Academy - S2573-05-01

Phone: (916) 204-5919
Fax: (916) 852-9132
Received: 04/28/2023 9:30 AM
Analysis Date: 05/09/2023
Collected: 04/19/2023

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy with CARB 435 Prep (Milling) Level B for 0.1% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
TP1at8' *042310253-0001*	Gray Slate	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
TP7at4' *042310253-0002*	Brown to Red Slate	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**

Analyst(s)

Will DiBella (2)

Samantha Rundstrom

Samantha Rundstrom, Laboratory Manager
or other approved signatory

John Adams Academy Sports Fields
Geocon Project S2573-05-01
Figure B5

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from: 05/10/2023 02:53:11

APPENDIX E
Traffic Evaluation Memorandum

Kimley»Horn

Memorandum

To: Joseph Benson
John Adams Academy

From: Bryant Lee, EIT
Matt Weir, P.E., T.E., PTOE, RSP1

Re: ***Phase 2 Traffic Evaluation – John Adams Academy***
El Dorado Hills, California

Date: February 7, 2024

The purpose of this memorandum is to document the traffic evaluation completed for the development of the John Adams Academy Phase 2 improvements ("Proposed Project" or "Project") located south of the existing John Adams Academy campus at 1104 Investment Boulevard in El Dorado Hills, California.

Project Understanding

John Adams Academy is seeking to develop the area located south of the existing John Adams Academy facility at 1104 Investment Boulevard in El Dorado Hills. The Proposed Project includes two (2) soccer fields, an outdoor amphitheater, outdoor learning area, playground, hard courts, running trail, and a paved roadway providing access for drop-off/pick-up (**Attachment A**). With the exception of the soccer fields, it is expected that the proposed uses will not be used for external (non-John Adams) activities and the trips associated with these uses captured by the regular school traffic. Therefore, only the soccer fields were analyzed when considering net new external trips for the Proposed Project.

Analysis Methodology

Level of Service (LOS) Definitions
Analysis of transportation facility operations is often based on the concept of Level of Service (LOS). The LOS of a facility is a quantitative measure used to describe operational conditions. LOS ranges from A, which represents minimal delay, to F, which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual, 6th Edition (HCM).*

Intersection Analysis
The HCM includes procedures for analyzing side-street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for the worst (most delay) minor street approach or movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection overall. **Table 1** presents intersection LOS definitions as defined in the HCM.

LOS for the study intersections were determined using the Synchro® traffic analysis software. Synchro 11 uses HCM methodology to analyze intersection delay and LOS.

Table 1 – Intersection Level of Service Criteria

Level of Service (LOS)	Un-Signalized	Signalized
	Average Control Delay* (sec/veh)	Average Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Source: Highway Capacity Manual, 6th Edition
* Applied to the worst lane/lane group(s) for SSSC and AWSC

Assessment of Proposed Project

Trip Generation and Distribution
The number of trips anticipated to be generated by the Proposed Project was approximated using data included in the *Trip Generation Manual, 11th Edition*, published by the Institute of Transportation Engineers (ITE). ITE Land Use (LU) Code 488 (Soccer Complex) was used to approximate trips generated by the Project. **Table 2** provides a summary of the trip generation for the Project.

Table 2 – Project Trip Generation

Land Use	Size		AM Peak-Hour					PM Peak-Hour					Saturday Peak-Hour				
			Total Trips	IN		OUT		Total Trips	IN		OUT		Total Trips	IN		OUT	
				%	Trips	%	Trips		%	Trips	%	Trips		%	Trips	%	Trips
488 - Soccer Complex	2	Fields	4	53%	2	47%	2	34	47%	16	53%	18	75	48%	36	52%	39
		Net New External Trips:	***4***		***2***		***2***	***34***		***16***		***18***	***75***		***36***		***39***

Trip Rate Source: *ITE Trip Generation Manual, 11th Edition*

As shown in **Table 2**, the Project is anticipated to generate 4, 34, and 75 net new external trips during the weekday AM, weekday PM, and Saturday peak-hours, respectively.

While the Project is anticipated to generate the most traffic during the Saturday peak-hour, the traffic demand during the Saturday peak-hour is not expected to result in the level of congestion as documented during the weekday PM peak-hour scenario. According to data obtained from the County[1], the Saturday peak-hour traffic equates to 56-percent of the traffic experienced during the weekday, PM peak-hour along Latrobe Road just north of Investment Boulevard (**Attachment B)**. Because the background volumes on Saturdays are significantly lower than those observed during the weekdays, the following analysis focuses on the weekday AM and PM peak-hours using the Project's Saturday peak-hour generated trips.

Trip distribution for the Proposed Project was consistent with the previously approved John Adams Academy Expansion Transportation Impact Study[2] (TIS). The trip distribution for the site can be found in **Attachment C**.

[1] "Traffic Counts: EDC Roads." edcroads.edcgove.us/traffic. Accessed January 9, 2024.
[2] *John Adams Academy Transportation Impact Study*, Kimley-Horn, February 1, 2022.

Level of Service Analysis

Existing and Existing plus Proposed Project scenarios were analyzed as part of this evaluation. The Existing conditions were established using the "Existing (2021) plus Proposed Project" counts from the prior study[2]. The Existing plus Proposed Project scenario was established by manually adding the distributed project trip generation to the Existing conditions.

The Level of Service (LOS) analyses were limited to the offsite intersections that were previously improved[2]. These intersections are as follows:

1. Latrobe Road at Golden Foothill Parkway North/Monte Verde Drive
2. Latrobe Road at Golden Foothill Parkway South/Clubview Drive
3. Latrobe Road at Investment Boulevard

Table 3 summarizes LOS for the Existing and Existing plus Proposed Project scenarios. As shown in **Table 3**, the intersections' LOS ranges from B to E. Analysis worksheets for the Existing and the Existing plus Project scenarios are included in **Attachment D** and **Attachment E**, respectively.

Table 3 – Existing plus Proposed Project Intersection Levels of Service

ID	Intersection	Control	Peak Hour	Existing		Existing plus Proposed Project	
				Delay [sec]	LOS	Delay [sec]	LOS
1	Latrobe Road @ Golden Foothill Parkway North/Monte Verde Drive	Signal	AM	55.1	E	58.9	E
			PM	15.3	B	15.5	B
2	Latrobe Road @ Golden Foothill Parkway South/Clubview Dr	Signal	AM	75.6	E	76.3	E
			PM	34.3	C	34.2	C
3	Latrobe Road @ Investment Boulevard	Signal	AM	32.7	C	40.2	D
			PM	13.9	B	14.8	B

Per the El Dorado County's Transportation and Circulation Element[3], "Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions." All intersections operate acceptably per these standards.

On-Site Transportation Review

In accordance with the County's *Guidelines*[4], the following aspects of the Proposed Project were evaluated:

1. ***Existence of any current traffic problems in the local area such as a high-accident location, non-standard intersection or roadway, or an intersection in need of a traffic signal***

   According to the County's 2021 *Annual Accident Location Study*[5], a study facility nearby the project experienced eight (8) or more accidents during a three-year period between January 1, 2019, and December 31, 2021. According to the *Study*, this site was selected for investigation and determination of corrective action(s). **Table 4** provides a summary of the site and its selected actions. According to the Study, "no further action is required due to low accident rate or other conditions."

[3] *El Dorado County General Plan, Transportation and Circulation Element*, July 2004.

[4] *Transportation Impact Study Guidelines*, El Dorado County Community Development Agency, November 2014.

[5] *Annual Accident Location Study 2021*, County of El Dorado Transportation Division, April 20, 2022.

Table 4 – Project Area Sites Selected for Accident Investigation

Site #	Location Description	Accident Rate+	Identified Action
23	Latrobe Road, Near Clubview Drive	0.64	None required
Source: *Annual Accident Location Study 2021,* County of El Dorado Transportation Division, April 10, 2019. + # Accidents per Million Vehicles (MV) for single sites (intersections/curves), # Accidents per Million Vehicle Miles (MVM) for roadway sections.			

2. ***Proximity of proposed site driveway(s) to other driveways or intersections***
   Access to the site is provided at the existing driveways along Investment Boulevard and Robert J. Matthews Parkway. These driveways connect to existing roadways interior to the Business Park with established intersections and connectivity to both internal and external facilities.
3. ***Adequacy of vehicle parking relative to both the anticipated demand and zoning code requirements***
   The John Adams Academy building is immediately surrounded by approximately 297 parking spaces. The campus can accommodate up to an additional 105+ vehicles by making use of the hardscaped areas used as playground and drop-off lanes.
4. ***Adequacy of the project site design to fully satisfy truck loading demand on-site, when the anticipated number of deliveries and service calls may exceed 10 per day***
   The Proposed Project is not anticipated to exceed the 10 deliveries and service calls threshold per day.
5. ***Adequacy of the project site design to provide at least a 25' minimum required throat depth (MRTD) at project driveways. Include calculation of the MRTD.***
   The existing site driveways have throat depths ranging from 150 to 800-feet. Due to the low volume of conflicting traffic, these existing throat depths are considered to be adequate.
6. ***Adequacy of the project site design to convey all vehicle types***
   The site parking will include a full loop drive around the adjacent academy building which is anticipated to accommodate the circulation needs of all vehicle types, including fire access.
7. ***Adequacy of sight distance on-site***
   An evaluation of sight distance was previously completed[2] for the existing site access driveway intersections along Investment Boulevard based on observed horizontal and vertical geometric conditions. These evaluations were performed in accordance with the guidelines presented in the *Geometric Design of Highways and Streets*, published by the American Association of State Highway and Transportation Officials (AASHTO), and the *Highway Design Manual*, published by Caltrans. Adequate sight distance was observed at this intersection. Nevertheless, in all cases, roadside vegetation should be maintained to preserve sight distance.

Other Transportation-Related Deficiencies and Improvement Considerations

In accordance with the County's *Guidelines[4]*, the proposed project was evaluated against the following *General Plan* goals:

- ***Emergency Vehicle Access***
  Fire Safe Regulations[6] state that on-site roadways shall "provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency…" The Proposed Project is anticipated to use existing roadway and parking facilities. The existing academy site was designed such that there will be access around the academy building to accommodate fire access. As such, the proposed project is considered to allow for adequate access and on-site circulation for emergency vehicles.

[6] *Fire Safe Regulations*, Title 14 Natural Resources, Division 1.5 Department of Forestry, Chapter 7 – Fire Protection, Subchapter 2 SRA Safe Regulations, Article 2 Emergency Access, El Dorado County Building Department.

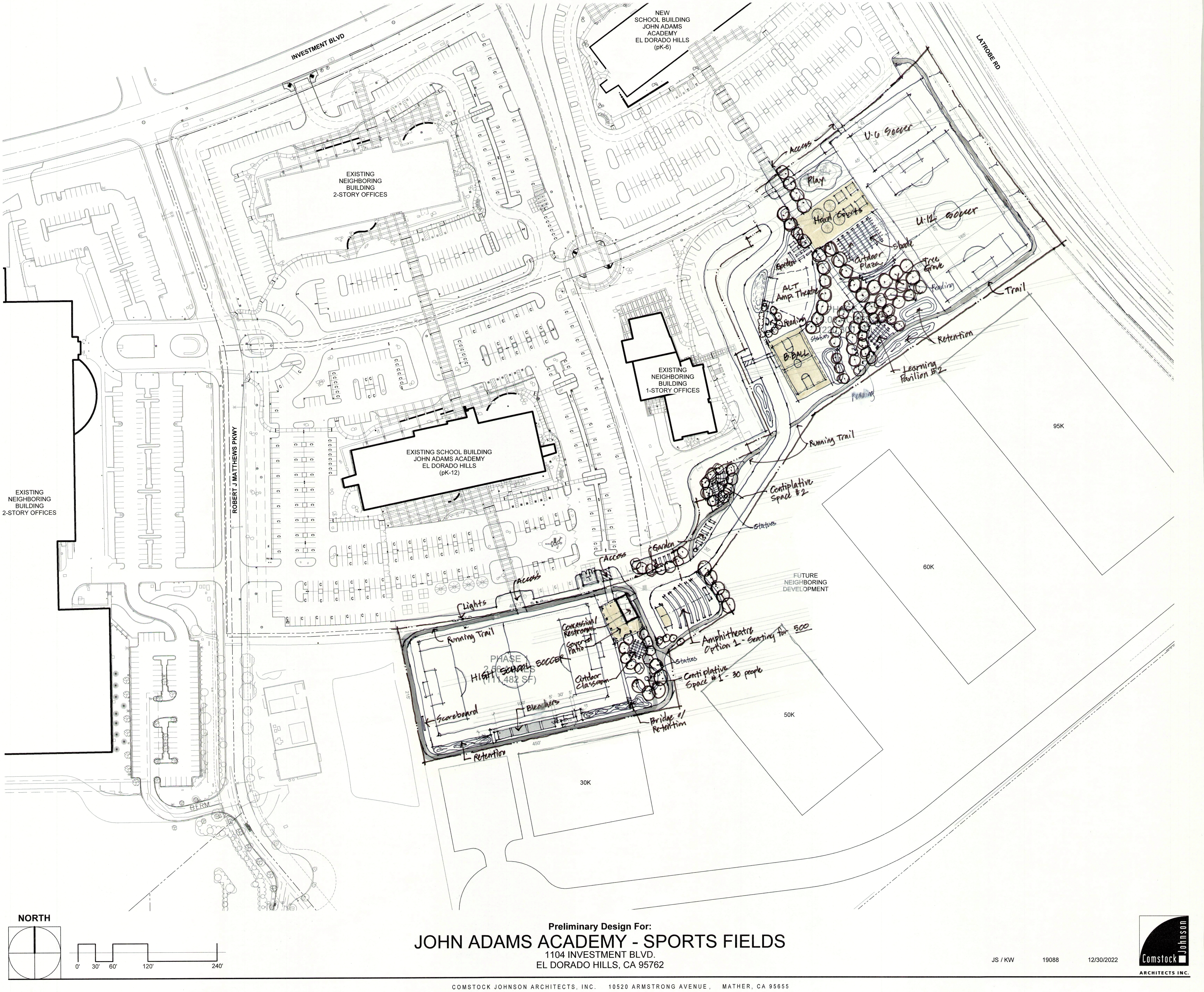
- ***Deliveries of Goods and Services***
  The proposed project is considered to allow for adequate on-site circulation for all vehicle types, including delivery vehicles for goods and services. The site layout will delivery vehicles to use the complete loop road around the academy buildings and access the site via the existing parking lot.
- ***Access to Public Transit Services consistent with General Plan Circulation Element Goal TC-2: "To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment."***
  No public transit services are operating in the immediate project area.
- ***Transportation System Management consistent with General Plan Circulation Element Goal TC-3: "To reduce travel demand on the County's road system and maximize the operating efficiency of transportation facilities, thereby reducing the quantity of motor vehicle emissions and the amount of investment required in new or expanded facilities."***
  The nature of the proposed project, youth soccer fields, is anticipated to equate to a certain level of trip characteristics related to the number of players. While already captured in the trip generation estimates, the proposed project's "new trip" generation is reduced because of its existing and inherent shared trips and carpool initiatives. As a result, the proposed project has the net effect of naturally reducing travel demand on the County's road system by minimizing the number of new trips.
- ***Non-Motorized Transportation consistent with General Plan Circulation Element Goal TC-4: "To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes."***
  According to Chapter 5, Page 22 of the *El Dorado County Bicycle Transportation Plan*, Class II Bike Lanes currently exist along Latrobe Road, north of Investment Boulevard and are proposed along Golden Foothill Parkway. While the project will not result in removal of a bikeway/bike lane or prohibition of implementation of the facilities identified in the *Plan*, it is required to include pedestrian/bicycle paths connecting to adjacent commercial, research and development, or industrial projects and any schools, parks, or other public facilities. The proposed project will be required to construct on-site roadway and pedestrian facilities in accordance with County design guidelines. These on-site pedestrian and bicycle facilities will connect the project with the adjacent Class II Bike Lanes along Latrobe Road and the proposed facilities along Golden Foothill Parkway. Through this connection to the proposed bike lane network, the project will provide continuity with adjacent projects, schools, parks, and other public facilities.
- ***Complete street implementation shall be considered wherever possible***
  Because the site is already constructed, there are minimal opportunities for the project to implement complete street components. Nevertheless, as the opportunities arise in the future, consideration should be given to allocating portions of the public right-of-way to non-vehicular traffic thereby enhancing the complete street characteristics of the office park.

Attachments

Attachment A – Proposed Project Site Plan
Attachment B – El Dorado County Hourly Traffic Count Report
Attachment C – Proposed Project Trip Distribution
Attachment D – Analysis Worksheets for Existing (2024) Conditions
Attachment E – Analysis Worksheets for Existing plus Project (2024) Conditions

Attachment A

Proposed Project Site Plan



Preliminary Design For:

JOHN ADAMS ACADEMY - SPORTS FIELDS

1104 INVESTMENT BLVD.
EL DORADO HILLS, CA 95762

JS / KW 19088 12/30/2022

Comstock Johnson ARCHITECTS INC.

COMSTOCK JOHNSON ARCHITECTS, INC. 10520 ARMSTRONG AVENUE, MATHER, CA 95655
916.362.6303(P) 916.362.5841(F)

Attachment B

El Dorado County Hourly Traffic Count Report

EL DORADO COUNTY
DEPARTMENT OF TRANSPORTATION

Count Summary Beginning: **October 5, 2022**

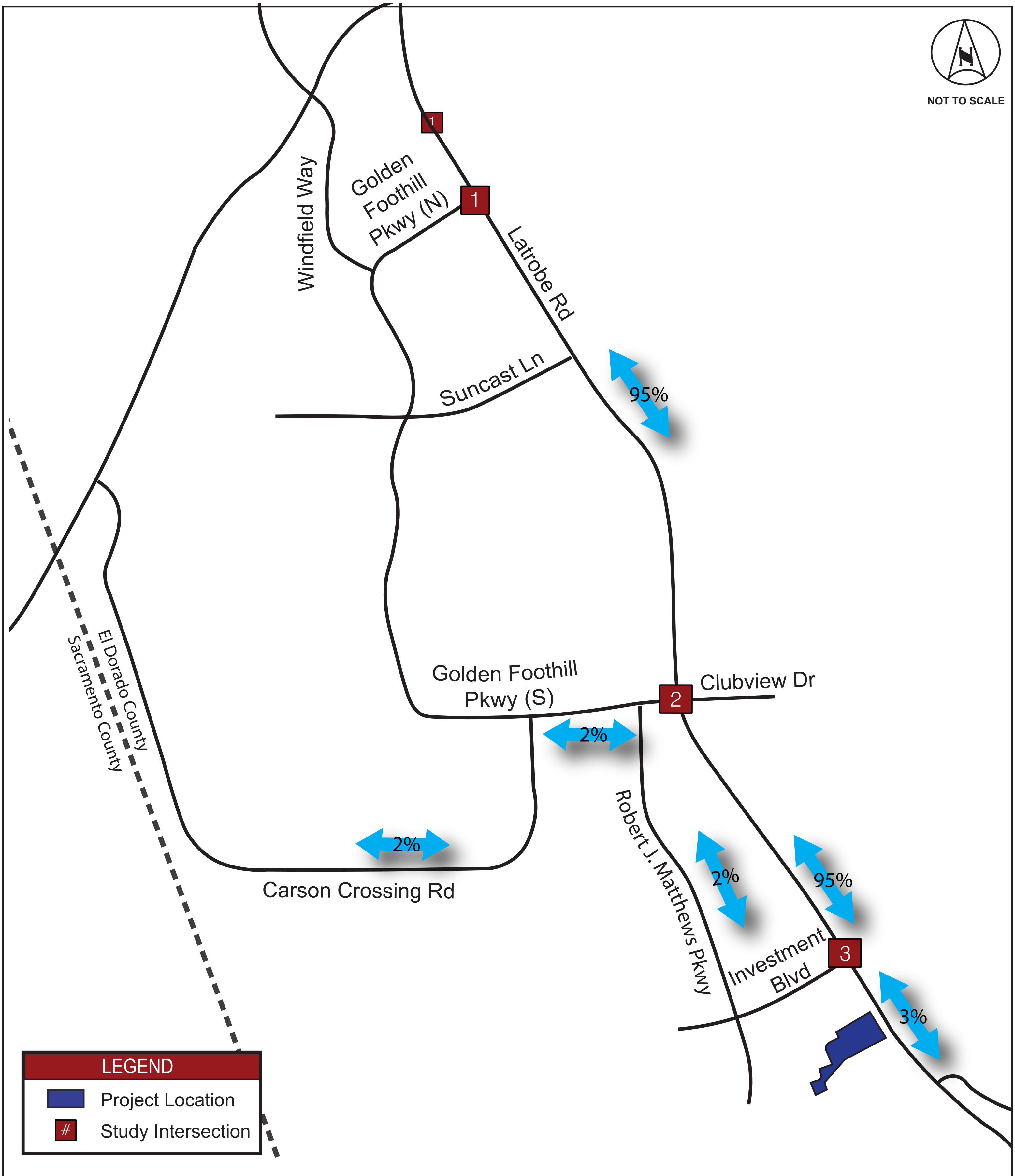
Count Station:	1400018	Counter ID:	TLS #7
City/Town:	El Dorado Hills	Mile Post:	**8.88**
Road Name:	**Latrobe Road**	Location:	**100 Ft. S. of Investment Blvd.**
Lanes:	2	Direction:	SOUTHBOUND

Date	9	10	11	5	6	7	8	Weekly	Wk Day
Day Time	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Average	Avg.
100	19	14	11	21	7	19	14	15	14
200	16	9	10	5	10	11	12	10	9
300	7	3	4	4	3	6	11	5	4
400	3	5	6	10	6	6	4	6	7
500	8	15	17	11	17	19	6	13	16
600	26	76	70	65	69	58	39	58	68
700	46	94	102	114	102	116	42	88	106
800	50	159	175	189	181	161	89	143	173
900	99	201	217	205	206	203	124	179	206
1000	133	158	166	188	157	178	215	171	169
1100	225	186	198	179	225	216	324	222	201
1200	256	228	224	208	206	265	321	244	226
1300	243	236	256	256	235	325	269	260	262
1400	237	253	263	274	273	342	303	278	281
1500	236	321	295	326	299	358	324	308	320
1600	225	359	373	435	381	410	357	363	392
1700	200	398	386	408	421	390	308	359	401
1800	199	351	374	346	343	368	238	317	356
1900	187	233	249	293	254	261	199	239	258
2000	153	169	199	209	206	224	156	188	201
2100	84	115	140	146	168	159	140	136	146
2200	88	89	108	102	113	123	109	105	107
2300	49	41	47	49	57	94	82	60	58
2400	28	19	24	18	35	48	64	34	29
Totals	2817	3732	3914	4061	3974	4360	3750	3801	4008
AM Peak Hr	12:00	12:00	12:00	12:00	11:00	12:00	11:00	12:00	12:00
AM Count	256	228	224	208	225	265	324	244	226
PM Peak Hr	1:00	5:00	5:00	4:00	5:00	4:00	4:00	4:00	5:00
PM Count	243	398	386	435	421	410	357	363	401

TOTAL ADT: **7,815**

Attachment C

Proposed Project Trip Distribution



NOT TO SCALE
Windfield Way
Golden Foothill Pkwy (N)
1
Latrobe Rd
Suncast Ln
95%
El Dorado County
Sacramento County
Golden Foothill Pkwy (S)
2
Clubview Dr
2%
2%
Carson Crossing Rd
Robert J. Matthews Pkwy
2%
95%
Investment Blvd
3
3%
LEGEND
Project Location
#
Study Intersection

Attachment D

Analysis Worksheets for Existing (2024) Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	3	18	14	9	5	32	1580	11	11	1727	421
Future Volume (veh/h)	190	3	18	14	9	5	32	1580	11	11	1727	421
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	256	25	26	18	12	6	43	2107	15	15	2303	561
Peak Hour Factor	0.70	0.70	0.70	0.78	0.78	0.78	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	59	61	26	17	9	56	2684	19	18	2059	482
Arrive On Green	0.07	0.07	0.07	0.03	0.03	0.03	0.03	0.74	0.74	0.01	0.72	0.72
Sat Flow, veh/h	5344	840	873	886	591	295	1781	3617	26	1781	2858	668
Grp Volume(v), veh/h	256	0	51	36	0	0	43	1034	1088	15	1395	1469
Grp Sat Flow(s),veh/h/ln	1781	0	1713	1773	0	0	1781	1777	1866	1781	1777	1750
Q Serve(g_s), s	5.7	0.0	3.4	2.4	0.0	0.0	2.9	43.3	43.6	1.0	87.0	87.0
Cycle Q Clear(g_c), s	5.7	0.0	3.4	2.4	0.0	0.0	2.9	43.3	43.6	1.0	87.0	87.0
Prop In Lane	1.00		0.51	0.50		0.17	1.00		0.01	1.00		0.38
Lane Grp Cap(c), veh/h	373	0	120	51	0	0	56	1319	1385	18	1280	1261
V/C Ratio(X)	0.69	0.00	0.43	0.70	0.00	0.00	0.76	0.78	0.79	0.85	1.09	1.16
Avail Cap(c_a), veh/h	708	0	227	352	0	0	74	1319	1385	44	1280	1261
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	0.0	53.8	58.1	0.0	0.0	58.0	9.6	9.6	59.7	16.9	16.9
Incr Delay (d2), s/veh	2.2	0.0	2.4	6.2	0.0	0.0	20.2	3.4	3.2	32.1	53.4	83.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.6	1.2	0.0	0.0	1.6	12.7	13.4	0.6	43.6	53.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	0.0	56.2	64.3	0.0	0.0	78.2	13.0	12.9	91.8	70.3	100.1
LnGrp LOS	E	A	E	E	A	A	E	B	B	F	F	F
Approach Vol, veh/h		307			36			2165			2879	
Approach Delay, s/veh		57.0			64.3			14.2			85.6	
Approach LOS		E			E			B			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	95.6		12.4	7.8	93.0		7.5				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	3.0	89.0		16.0	5.0	87.0		24.0				
Max Q Clear Time (g_c+I1), s	3.0	45.6		7.7	4.9	89.0		4.4				
Green Ext Time (p_c), s	0.0	33.3		0.8	0.0	0.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			55.1									
HCM 6th LOS			E									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	50	13	19	65	293	31	982	15	176	999	528
Future Volume (veh/h)	320	50	13	19	65	293	31	982	15	176	999	528
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	432	68	18	27	93	419	41	1292	20	248	1407	744
Peak Hour Factor	0.74	0.74	0.74	0.70	0.70	0.70	0.76	0.76	0.76	0.71	0.71	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	515	353	93	70	265	225	54	1472	23	267	1885	1077
Arrive On Green	0.15	0.25	0.25	0.04	0.14	0.14	0.03	0.41	0.41	0.15	0.53	0.53
Sat Flow, veh/h	3456	1425	377	1781	1870	1585	1781	3582	55	1781	3554	1585
Grp Volume(v), veh/h	432	0	86	27	93	419	41	641	671	248	1407	744
Grp Sat Flow(s),veh/h/ln	1728	0	1802	1781	1870	1585	1781	1777	1860	1781	1777	1585
Q Serve(g_s), s	15.4	0.0	4.8	1.9	5.7	18.0	2.9	42.1	42.2	17.4	39.0	35.9
Cycle Q Clear(g_c), s	15.4	0.0	4.8	1.9	5.7	18.0	2.9	42.1	42.2	17.4	39.0	35.9
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	515	0	446	70	265	225	54	730	764	267	1885	1077
V/C Ratio(X)	0.84	0.00	0.19	0.38	0.35	1.86	0.76	0.88	0.88	0.93	0.75	0.69
Avail Cap(c_a), veh/h	1011	0	698	84	265	225	70	730	764	267	1885	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	0.0	37.7	59.4	49.1	54.4	61.0	34.4	34.4	53.2	23.1	12.3
Incr Delay (d2), s/veh	3.7	0.0	0.2	3.4	0.8	404.6	29.5	14.1	13.6	36.6	2.7	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	2.2	0.9	2.7	32.5	1.8	20.8	21.7	10.5	16.6	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	0.0	37.9	62.8	49.9	459.0	90.6	48.5	48.0	89.9	25.9	15.9
LnGrp LOS	E	A	D	E	D	F	F	D	D	F	C	B
Approach Vol, veh/h		518			539			1353			2399	
Approach Delay, s/veh		53.1			368.6			49.6			29.4	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	57.4	23.4	23.0	7.8	72.6	10.0	36.4
Change Period (Y+Rc), s	4.0	5.3	4.5	5.0	4.0	5.3	5.0	* 5
Max Green Setting (Gmax), s	19.0	52.1	37.1	18.0	5.0	66.1	6.0	* 49
Max Q Clear Time (g_c+I1), s	19.4	44.2	17.4	20.0	4.9	41.0	3.9	6.8
Green Ext Time (p_c), s	0.0	5.0	1.5	0.0	0.0	16.3	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	75.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	621	31	57	394	212	891
Future Volume (veh/h)	621	31	57	394	212	891
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	887	44	66	458	299	1255
Peak Hour Factor	0.70	0.70	0.86	0.86	0.71	0.71
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	921	819	85	689	514	1255
Arrive On Green	0.52	0.52	0.05	0.37	0.28	0.28
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	887	44	66	458	299	1255
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	41.8	1.2	3.2	17.9	12.0	24.0
Cycle Q Clear(g_c), s	41.8	1.2	3.2	17.9	12.0	24.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	921	819	85	689	514	1255
V/C Ratio(X)	0.96	0.05	0.78	0.66	0.58	1.00
Avail Cap(c_a), veh/h	959	854	102	707	514	1255
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	10.5	41.1	23.0	27.3	4.4
Incr Delay (d2), s/veh	20.3	0.0	21.6	2.6	2.0	25.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	1.6	1.9	8.0	5.5	35.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.6	10.5	62.7	25.7	29.3	29.7
LnGrp LOS	D	B	E	C	C	C
Approach Vol, veh/h	931			524	1554	
Approach Delay, s/veh	39.1			30.3	29.6	
Approach LOS	D			C	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.1		49.1	8.1	30.0
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s		33.0		47.0	5.0	24.0
Max Q Clear Time (g_c+I1), s		19.9		43.8	5.2	26.0
Green Ext Time (p_c), s		3.2		1.3	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			32.7			
HCM 6th LOS			C			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	439	8	11	8	4	13	9	1074	5	13	917	131
Future Volume (veh/h)	439	8	11	8	4	13	9	1074	5	13	917	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	543	70	15	9	4	15	10	1167	5	15	1066	152
Peak Hour Factor	0.75	0.75	0.75	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	824	230	49	17	7	28	23	1892	8	20	1623	231
Arrive On Green	0.15	0.15	0.15	0.03	0.03	0.03	0.01	0.52	0.52	0.01	0.52	0.52
Sat Flow, veh/h	5344	1493	320	540	240	901	1781	3629	16	1781	3123	445
Grp Volume(v), veh/h	543	0	85	28	0	0	10	571	601	15	606	612
Grp Sat Flow(s),veh/h/ln	1781	0	1813	1681	0	0	1781	1777	1868	1781	1777	1790
Q Serve(g_s), s	6.1	0.0	2.6	1.0	0.0	0.0	0.4	14.4	14.4	0.5	15.8	15.9
Cycle Q Clear(g_c), s	6.1	0.0	2.6	1.0	0.0	0.0	0.4	14.4	14.4	0.5	15.8	15.9
Prop In Lane	1.00		0.18	0.32		0.54	1.00		0.01	1.00		0.25
Lane Grp Cap(c), veh/h	824	0	279	52	0	0	23	926	974	20	923	930
V/C Ratio(X)	0.66	0.00	0.30	0.54	0.00	0.00	0.44	0.62	0.62	0.77	0.66	0.66
Avail Cap(c_a), veh/h	1344	0	456	634	0	0	140	2485	2612	84	2429	2448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	23.9	30.4	0.0	0.0	31.2	10.7	10.7	31.4	11.1	11.2
Incr Delay (d2), s/veh	0.9	0.0	0.6	3.3	0.0	0.0	4.9	1.0	0.9	20.3	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	1.1	0.5	0.0	0.0	0.2	4.0	4.2	0.3	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	0.0	24.5	33.7	0.0	0.0	36.1	11.7	11.7	51.7	12.3	12.3
LnGrp LOS	C	A	C	C	A	A	D	B	B	D	B	B
Approach Vol, veh/h		628			28			1182			1233	
Approach Delay, s/veh		26.0			33.7			11.9			12.8	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	39.2		13.8	4.8	39.1		6.0				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	3.0	89.0		16.0	5.0	87.0		24.0				
Max Q Clear Time (g_c+I1), s	2.5	16.4		8.1	2.4	17.9		3.0				
Green Ext Time (p_c), s	0.0	13.9		1.7	0.0	15.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			15.3									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	44	27	7	27	130	11	771	10	214	724	206
Future Volume (veh/h)	375	44	27	7	27	130	11	771	10	214	724	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	446	52	32	8	32	155	12	812	11	233	787	224
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	534	242	149	74	214	181	24	1544	21	260	1997	1136
Arrive On Green	0.15	0.22	0.22	0.04	0.11	0.11	0.01	0.43	0.43	0.15	0.56	0.56
Sat Flow, veh/h	3456	1084	667	1781	1870	1585	1781	3590	49	1781	3554	1585
Grp Volume(v), veh/h	446	0	84	8	32	155	12	402	421	233	787	224
Grp Sat Flow(s),veh/h/ln	1728	0	1750	1781	1870	1585	1781	1777	1862	1781	1777	1585
Q Serve(g_s), s	15.2	0.0	4.7	0.5	1.9	11.6	0.8	20.2	20.2	15.6	15.1	5.6
Cycle Q Clear(g_c), s	15.2	0.0	4.7	0.5	1.9	11.6	0.8	20.2	20.2	15.6	15.1	5.6
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	534	0	391	74	214	181	24	764	800	260	1997	1136
V/C Ratio(X)	0.83	0.00	0.21	0.11	0.15	0.85	0.49	0.53	0.53	0.90	0.39	0.20
Avail Cap(c_a), veh/h	1058	0	709	88	278	235	74	764	800	279	1997	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	0.0	38.4	55.9	48.3	52.7	59.3	25.4	25.4	50.9	14.9	5.7
Incr Delay (d2), s/veh	3.5	0.0	0.3	0.6	0.3	20.6	14.5	2.6	2.5	27.9	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	2.1	0.2	0.9	5.7	0.5	9.0	9.4	8.9	6.2	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	0.0	38.6	56.6	48.7	73.3	73.8	28.0	27.9	78.7	15.5	6.1
LnGrp LOS	D	A	D	E	D	E	E	C	C	E	B	A
Approach Vol, veh/h		530			195			835			1244	
Approach Delay, s/veh		50.9			68.5			28.6			25.6	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.7	57.4	23.2	18.9	5.7	73.4	10.0	32.1
Change Period (Y+Rc), s	4.0	5.3	4.5	5.0	4.0	5.3	5.0	* 5
Max Green Setting (Gmax), s	19.0	52.1	37.1	18.0	5.0	66.1	6.0	* 49
Max Q Clear Time (g_c+I1), s	17.6	22.2	17.2	13.6	2.8	17.1	2.5	6.7
Green Ext Time (p_c), s	0.1	5.9	1.6	0.2	0.0	7.8	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	512	23	12	274	385	380
Future Volume (veh/h)	512	23	12	274	385	380
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	656	29	13	295	405	400
Peak Hour Factor	0.78	0.78	0.93	0.93	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	748	666	29	744	577	1154
Arrive On Green	0.42	0.42	0.02	0.40	0.31	0.31
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	656	29	13	295	405	400
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	18.5	0.6	0.4	6.2	10.5	5.0
Cycle Q Clear(g_c), s	18.5	0.6	0.4	6.2	10.5	5.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	748	666	29	744	577	1154
V/C Ratio(X)	0.88	0.04	0.45	0.40	0.70	0.35
Avail Cap(c_a), veh/h	1528	1359	163	1126	819	1360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	9.4	26.7	11.8	16.7	2.7
Incr Delay (d2), s/veh	3.5	0.0	3.9	0.5	2.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	0.2	2.3	4.3	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.1	9.4	30.6	12.3	19.0	3.0
LnGrp LOS	B	A	C	B	B	A
Approach Vol, veh/h	685			308	805	
Approach Delay, s/veh	17.7			13.1	11.0	
Approach LOS	B			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		27.8		27.0	4.9	22.9
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s		33.0		47.0	5.0	24.0
Max Q Clear Time (g_c+I1), s		8.2		20.5	2.4	12.5
Green Ext Time (p_c), s		2.5		2.5	0.0	4.4

Intersection Summary			
HCM 6th Ctrl Delay			13.9
HCM 6th LOS			B

Attachment E

Analysis Worksheets for Existing plus Project (2024) Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	3	18	14	9	5	32	1617	11	11	1761	421
Future Volume (veh/h)	190	3	18	14	9	5	32	1617	11	11	1761	421
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	256	25	26	18	12	6	43	2156	15	15	2348	561
Peak Hour Factor	0.70	0.70	0.70	0.78	0.78	0.78	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	59	61	26	17	9	56	2685	19	18	2068	475
Arrive On Green	0.07	0.07	0.07	0.03	0.03	0.03	0.03	0.74	0.74	0.01	0.72	0.72
Sat Flow, veh/h	5344	840	873	886	591	295	1781	3618	25	1781	2870	659
Grp Volume(v), veh/h	256	0	51	36	0	0	43	1058	1113	15	1417	1492
Grp Sat Flow(s),veh/h/ln	1781	0	1713	1773	0	0	1781	1777	1866	1781	1777	1752
Q Serve(g_s), s	5.7	0.0	3.4	2.4	0.0	0.0	2.9	45.8	46.1	1.0	87.0	87.0
Cycle Q Clear(g_c), s	5.7	0.0	3.4	2.4	0.0	0.0	2.9	45.8	46.1	1.0	87.0	87.0
Prop In Lane	1.00		0.51	0.50		0.17	1.00		0.01	1.00		0.38
Lane Grp Cap(c), veh/h	373	0	120	51	0	0	56	1319	1385	18	1280	1262
V/C Ratio(X)	0.69	0.00	0.43	0.70	0.00	0.00	0.76	0.80	0.80	0.85	1.11	1.18
Avail Cap(c_a), veh/h	708	0	227	352	0	0	74	1319	1385	44	1280	1262
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	0.0	53.8	58.1	0.0	0.0	58.0	9.9	9.9	59.7	16.9	16.9
Incr Delay (d2), s/veh	2.2	0.0	2.4	6.2	0.0	0.0	20.2	3.8	3.7	32.1	59.9	90.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.6	1.2	0.0	0.0	1.6	13.6	14.3	0.6	45.9	55.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	0.0	56.2	64.3	0.0	0.0	78.2	13.8	13.7	91.8	76.8	107.2
LnGrp LOS	E	A	E	E	A	A	E	B	B	F	F	F
Approach Vol, veh/h		307			36			2214			2924	
Approach Delay, s/veh		57.0			64.3			15.0			92.4	
Approach LOS		E			E			B			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	95.6		12.4	7.8	93.0		7.5				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	3.0	89.0		16.0	5.0	87.0		24.0				
Max Q Clear Time (g_c+I1), s	3.0	48.1		7.7	4.9	89.0		4.4				
Green Ext Time (p_c), s	0.0	32.7		0.8	0.0	0.0		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			58.9									
HCM 6th LOS			E									

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	50	13	19	65	293	31	1019	15	176	1033	528
Future Volume (veh/h)	320	50	13	19	65	293	31	1019	15	176	1033	528
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	432	68	18	27	93	419	41	1341	20	248	1455	744
Peak Hour Factor	0.74	0.74	0.74	0.70	0.70	0.70	0.76	0.76	0.76	0.71	0.71	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	515	353	93	70	265	225	54	1473	22	267	1885	1077
Arrive On Green	0.15	0.25	0.25	0.04	0.14	0.14	0.03	0.41	0.41	0.15	0.53	0.53
Sat Flow, veh/h	3456	1425	377	1781	1870	1585	1781	3584	53	1781	3554	1585
Grp Volume(v), veh/h	432	0	86	27	93	419	41	665	696	248	1455	744
Grp Sat Flow(s),veh/h/ln	1728	0	1802	1781	1870	1585	1781	1777	1861	1781	1777	1585
Q Serve(g_s), s	15.4	0.0	4.8	1.9	5.7	18.0	2.9	44.6	44.7	17.4	41.3	35.9
Cycle Q Clear(g_c), s	15.4	0.0	4.8	1.9	5.7	18.0	2.9	44.6	44.7	17.4	41.3	35.9
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	515	0	446	70	265	225	54	730	764	267	1885	1077
V/C Ratio(X)	0.84	0.00	0.19	0.38	0.35	1.86	0.76	0.91	0.91	0.93	0.77	0.69
Avail Cap(c_a), veh/h	1011	0	698	84	265	225	70	730	764	267	1885	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	0.0	37.7	59.4	49.1	54.4	61.0	35.2	35.2	53.2	23.7	12.3
Incr Delay (d2), s/veh	3.7	0.0	0.2	3.4	0.8	404.6	29.5	17.5	16.9	36.6	3.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	2.2	0.9	2.7	32.5	1.8	22.5	23.5	10.5	17.7	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	0.0	37.9	62.8	49.9	459.0	90.6	52.6	52.1	89.9	26.8	15.9
LnGrp LOS	E	A	D	E	D	F	F	D	D	F	C	B
Approach Vol, veh/h		518			539			1402			2447	
Approach Delay, s/veh		53.1			368.6			53.5			29.9	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	57.4	23.4	23.0	7.8	72.6	10.0	36.4
Change Period (Y+Rc), s	4.0	5.3	4.5	5.0	4.0	5.3	5.0	* 5
Max Green Setting (Gmax), s	19.0	52.1	37.1	18.0	5.0	66.1	6.0	* 49
Max Q Clear Time (g_c+I1), s	19.4	46.7	17.4	20.0	4.9	43.3	3.9	6.8
Green Ext Time (p_c), s	0.0	3.8	1.5	0.0	0.0	15.7	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	76.3
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	658	32	58	394	212	925
Future Volume (veh/h)	658	32	58	394	212	925
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	940	46	67	458	299	1303
Peak Hour Factor	0.70	0.70	0.86	0.86	0.71	0.71
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	937	834	86	677	503	1260
Arrive On Green	0.53	0.53	0.05	0.36	0.27	0.27
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	940	46	67	458	299	1303
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	47.0	1.3	3.3	18.5	12.4	24.0
Cycle Q Clear(g_c), s	47.0	1.3	3.3	18.5	12.4	24.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	937	834	86	677	503	1260
V/C Ratio(X)	1.00	0.06	0.78	0.68	0.59	1.03
Avail Cap(c_a), veh/h	937	834	100	691	503	1260
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	10.3	42.0	24.1	28.4	4.3
Incr Delay (d2), s/veh	30.1	0.0	23.6	2.9	2.3	34.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.4	0.0	2.0	8.4	5.8	39.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.2	10.3	65.7	27.0	30.7	38.9
LnGrp LOS	F	B	E	C	C	F
Approach Vol, veh/h	986			525	1602	
Approach Delay, s/veh	49.3			31.9	37.4	
Approach LOS	D			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.3		51.0	8.3	30.0
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s		33.0		47.0	5.0	24.0
Max Q Clear Time (g_c+I1), s		20.5		49.0	5.3	26.0
Green Ext Time (p_c), s		3.1		0.0	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			40.2			
HCM 6th LOS			D			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	439	8	11	8	4	13	9	1111	5	13	951	131
Future Volume (veh/h)	439	8	11	8	4	13	9	1111	5	13	951	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	543	70	15	9	4	15	10	1208	5	15	1106	152
Peak Hour Factor	0.75	0.75	0.75	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	812	227	49	16	7	27	23	1934	8	19	1667	229
Arrive On Green	0.15	0.15	0.15	0.03	0.03	0.03	0.01	0.53	0.53	0.01	0.53	0.53
Sat Flow, veh/h	5344	1493	320	540	240	901	1781	3629	15	1781	3139	431
Grp Volume(v), veh/h	543	0	85	28	0	0	10	591	622	15	625	633
Grp Sat Flow(s),veh/h/ln	1781	0	1813	1681	0	0	1781	1777	1868	1781	1777	1793
Q Serve(g_s), s	6.3	0.0	2.7	1.1	0.0	0.0	0.4	15.3	15.3	0.6	16.7	16.8
Cycle Q Clear(g_c), s	6.3	0.0	2.7	1.1	0.0	0.0	0.4	15.3	15.3	0.6	16.7	16.8
Prop In Lane	1.00		0.18	0.32		0.54	1.00		0.01	1.00		0.24
Lane Grp Cap(c), veh/h	812	0	276	51	0	0	23	947	995	19	944	952
V/C Ratio(X)	0.67	0.00	0.31	0.55	0.00	0.00	0.44	0.62	0.62	0.77	0.66	0.66
Avail Cap(c_a), veh/h	1300	0	441	614	0	0	135	2405	2528	81	2351	2372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.3	0.0	24.8	31.4	0.0	0.0	32.2	10.8	10.8	32.4	11.2	11.2
Incr Delay (d2), s/veh	1.0	0.0	0.6	3.4	0.0	0.0	5.0	1.0	0.9	20.7	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	1.2	0.5	0.0	0.0	0.2	4.3	4.5	0.3	4.7	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.3	0.0	25.4	34.8	0.0	0.0	37.2	11.7	11.7	53.1	12.3	12.3
LnGrp LOS	C	A	C	C	A	A	D	B	B	D	B	B
Approach Vol, veh/h		628			28			1223			1273	
Approach Delay, s/veh		27.0			34.8			11.9			12.8	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	41.0		14.0	4.8	40.9		6.0				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	3.0	89.0		16.0	5.0	87.0		24.0				
Max Q Clear Time (g_c+I1), s	2.6	17.3		8.3	2.4	18.8		3.1				
Green Ext Time (p_c), s	0.0	14.8		1.7	0.0	16.1		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			15.5
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	44	27	7	27	130	11	808	10	214	758	206
Future Volume (veh/h)	375	44	27	7	27	130	11	808	10	214	758	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	446	52	32	8	32	155	12	851	11	233	824	224
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	534	242	149	74	214	181	24	1545	20	260	1997	1136
Arrive On Green	0.15	0.22	0.22	0.04	0.11	0.11	0.01	0.43	0.43	0.15	0.56	0.56
Sat Flow, veh/h	3456	1084	667	1781	1870	1585	1781	3592	46	1781	3554	1585
Grp Volume(v), veh/h	446	0	84	8	32	155	12	421	441	233	824	224
Grp Sat Flow(s),veh/h/ln	1728	0	1750	1781	1870	1585	1781	1777	1862	1781	1777	1585
Q Serve(g_s), s	15.2	0.0	4.7	0.5	1.9	11.6	0.8	21.4	21.4	15.6	16.0	5.6
Cycle Q Clear(g_c), s	15.2	0.0	4.7	0.5	1.9	11.6	0.8	21.4	21.4	15.6	16.0	5.6
Prop In Lane	1.00		0.38	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	534	0	391	74	214	181	24	764	801	260	1997	1136
V/C Ratio(X)	0.83	0.00	0.21	0.11	0.15	0.85	0.49	0.55	0.55	0.90	0.41	0.20
Avail Cap(c_a), veh/h	1058	0	709	88	278	235	74	764	801	279	1997	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	0.0	38.4	55.9	48.3	52.7	59.3	25.8	25.8	50.9	15.1	5.7
Incr Delay (d2), s/veh	3.5	0.0	0.3	0.6	0.3	20.6	14.5	2.8	2.7	27.9	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	2.1	0.2	0.9	5.7	0.5	9.6	10.0	8.9	6.5	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	0.0	38.6	56.6	48.7	73.3	73.8	28.6	28.5	78.7	15.8	6.1
LnGrp LOS	D	A	D	E	D	E	E	C	C	E	B	A
Approach Vol, veh/h		530			195			874			1281	
Approach Delay, s/veh		50.9			68.5			29.2			25.5	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.7	57.4	23.2	18.9	5.7	73.4	10.0	32.1
Change Period (Y+Rc), s	4.0	5.3	4.5	5.0	4.0	5.3	5.0	* 5
Max Green Setting (Gmax), s	19.0	52.1	37.1	18.0	5.0	66.1	6.0	* 49
Max Q Clear Time (g_c+I1), s	17.6	23.4	17.2	13.6	2.8	18.0	2.5	6.7
Green Ext Time (p_c), s	0.1	6.2	1.6	0.2	0.0	8.2	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	549	24	13	274	385	414
Future Volume (veh/h)	549	24	13	274	385	414
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	704	31	14	295	405	436
Peak Hour Factor	0.78	0.78	0.93	0.93	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	790	703	31	723	564	1181
Arrive On Green	0.44	0.44	0.02	0.39	0.30	0.30
Sat Flow, veh/h	1781	1585	1781	1870	1870	1585
Grp Volume(v), veh/h	704	31	14	295	405	436
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1870	1585
Q Serve(g_s), s	21.4	0.7	0.5	6.8	11.4	5.7
Cycle Q Clear(g_c), s	21.4	0.7	0.5	6.8	11.4	5.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	790	703	31	723	564	1181
V/C Ratio(X)	0.89	0.04	0.45	0.41	0.72	0.37
Avail Cap(c_a), veh/h	1422	1266	151	1049	763	1349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.1	9.3	28.6	13.1	18.3	2.6
Incr Delay (d2), s/veh	3.7	0.0	3.8	0.5	2.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	0.8	0.2	2.6	4.9	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.8	9.3	32.4	13.7	21.1	2.9
LnGrp LOS	B	A	C	B	C	A
Approach Vol, veh/h	735			309	841	
Approach Delay, s/veh	18.4			14.5	11.7	
Approach LOS	B			B	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		28.8		30.1	5.0	23.7
Change Period (Y+Rc), s		6.0		4.0	4.0	6.0
Max Green Setting (Gmax), s		33.0		47.0	5.0	24.0
Max Q Clear Time (g_c+I1), s		8.8		23.4	2.5	13.4
Green Ext Time (p_c), s		2.5		2.7	0.0	4.4

Intersection Summary			
HCM 6th Ctrl Delay			14.8
HCM 6th LOS			B

APPENDIX F
Vehicle Miles Traveled (VMT) Analysis Memorandum

Memorandum

To: Joseph Benson
John Adams Academy

From: Chris Gregerson, P.E., T.E., AICP

Re: ***Phase 2 Vehicle Miles Traveled (VMT) Analysis – John Adams Academy***
El Dorado Hills, California

Date: February 9, 2024

The purpose of this memorandum is to document the vehicle miles traveled (VMT) analysis completed for the development of the John Adams Academy Phase 2 improvements ("Proposed Project" or "Project") located south of the existing John Adams Academy campus at 1104 Investment Boulevard in El Dorado Hills, California.

With the passage of SB 743, Vehicle Miles Traveled (VMT) has become an indicator for determining if a new development will result in a "significant transportation impact" under the California Environmental Quality Act (CEQA). This memorandum summarizes the SB 743 VMT analysis and resultant findings for the proposed Project.

Project Understanding

John Adams Academy is seeking to develop the area located south of the existing John Adams Academy facility at 1104 Investment Boulevard in El Dorado Hills. The proposed Project includes two (2) soccer fields, an outdoor amphitheater, outdoor learning area, playground, hard courts, running trail, and a paved roadway providing access for drop-off/pick-up. With the exception of the soccer fields, it is expected that the proposed uses will not be used for external (non-John Adams) activities and the trips associated with these uses captured by the regular school traffic. Therefore, only the soccer fields were analyzed when considering net new external trips for the proposed Project. Specifically, this memo documents an analysis of the VMT impact from potential future use of local soccer clubs renting the soccer fields on Saturdays.

Purpose of Analysis

Passed in 2013, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving. The change has been made by replacing level of service (LOS) with VMT. This shift in transportation impact focus is intended to better align transportation impact analysis and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. LOS or other delay metrics may still be used to evaluate the impact of projects on drivers as part of land use entitlement review and impact fee programs and was considered for the analysis of this project (documented separately).

In January 2019, the California Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines' changes were approved by the Office of Administrative Law and are now in effect. Specific to SB 743, Section 15064.3(c) states, "The provisions apply statewide as of July 1, 2020."

To aid lead agencies with SB 743 implementation, the Governor's Office of Planning and Research (OPR) produced a VMT Guidelines[1] document that included detailed guidance about the variety of implementation questions they face with respect to shifting to a VMT metric. Key guidance from this document includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact.
- OPR recommends tour- and trip-based travel models to estimate VMT, but ultimately defers to local agencies to determine the appropriate tools.
- OPR states that by adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT.
- Lead agencies have the discretion to set or apply their own significance thresholds.

El Dorado County adopted their own updated VMT analysis methodology and thresholds of significance[2] in 2020. As stated in the County's Guidelines, while projects should, "generally use the El Dorado County Travel Demand Model (EDC TDM) for establishing the baseline VMT for the unincorporated County as a whole and calculating the VMT for specific projects in order to apply the significance thresholds and screening tools adopted herein. However, a different method of calculating VMT may be used if, in the exercise of sound engineering judgment, a different method is determined to be more accurate because the unique circumstances of a particular project or particular use that are not captured in the EDC TDM result in an underestimation or overestimation of VMT." As this analysis focuses on the VMT impact of renting soccer fields on Saturdays, the EDC TDM represents a "typical weekday", and the proposed Project's land use is unique and not able to be represented in the EDC TDM, a qualitative VMT analysis was conducted.

As the proposed Project is not a residential or office land use, a "net change" metric is used as the determination of an impact for the proposed Project. This means that if a proposed use results in additional regional VMT, it will result in a finding of significance. While the proposed Project's specific land use is not called out in the County's Guidelines, the "net change" metric is consistent with how retail establishments are evaluated. Therefore, the proposed Project was evaluated consistent with retail land uses and the VMT threshold of significance that is used as the basis of this Project is summarized below:

- Retail – no net increase in regional VMT

Methodology and Assumptions

As noted above, based on the land use information provided, for the purposes of the VMT analysis and the determination of transportation related significant impacts, the proposed Project's soccer fields land use was analyzed as a local-serving use and was analyzed qualitatively.

In general, local serving land uses primarily serves pre-existing needs (i.e., they do not generate new trips because they meet existing demand). Because of this, local-serving uses can be presumed to reduce trip lengths when a new project is proposed. Essentially, the assumption is that someone will travel to a newly constructed local serving use because of a its proximity, rather than the proposed retail store fulfilling an unmet need (i.e., the person had an existing need that was met by the retail located further away and is now traveling to the new retail use because it is closer to the person's origin location). This results in a trip on the roadway network becoming shorter, rather than a new trip being added to the roadway network, which would result in an impact to the overall transportation system.

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[1] *Technical Advisory on Evaluating Transportation Impacts in CEQA.* Governor's Office of Planning and Research, State of California. December 2018.

[2] *Board of Supervisors of the County of El Dorado Resolution 141-2020*. El Dorado County Board of Supervisors. October 2020.

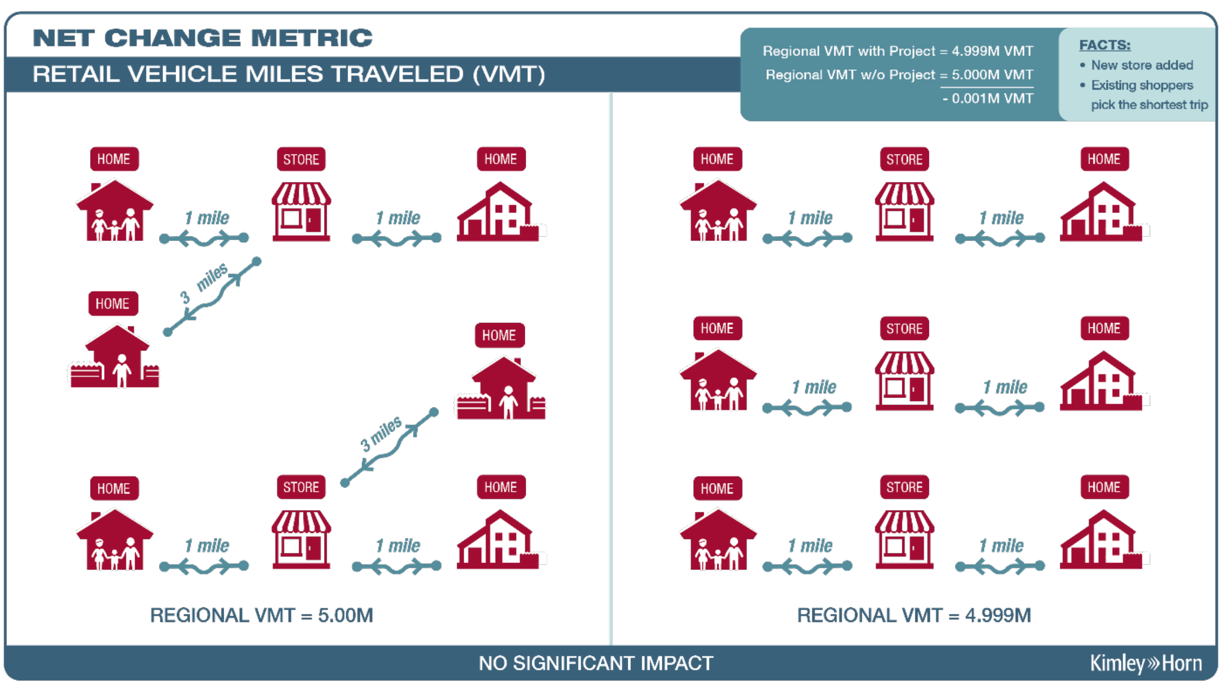
Specifically for the proposed Project, the addition of the soccer fields does not generate new trips as the soccer teams that would use the fields exist already and are not formed due to the existence of the soccer fields. Rather, the teams that would use the fields on Saturdays currently play elsewhere that are further away from the player's homes and would relocate (shorten their existing trip) to the fields because they would be closer.

Conversely, residential and office land uses often drive new trips given that they introduce new participants to the transportation system. However, the proposed Project is expected to reroute existing trips on the transportation network rather than generate new trips. As such, this means that the impact to the transportation system will be reduced by the introduction of new soccer fields that are primarily local in their service focus.

The State's *Technical Advisory* provides that a less than significant finding can be substantiated by showing the proximity of other similar uses. Although a specific market study is not being provided as part of this memorandum, few soccer fields within the County exist for teams to practice and play. The Bass Lake Park Sellwood Field Soccer Ground, the Valley View Sports Park, and Promontory Community Park are the only facilities west of the City of Placerville that offer soccer fields, but all three must share the facilities with other sports. Therefore, the proposed Project will reduce trip lengths by adding soccer field opportunities into the local area, further improving the destination proximity. Accordingly, it is appropriate that the proposed Project development be presumed, in accordance with the *Technical Advisory*, that it will result in a VMT reduction and support the goals of SB 743.

Exhibit 1 has been provided to visually demonstrate the basis of this finding. Note that the numbers provided are for illustrative purposes as the analysis technique used is qualitative.

Exhibit 1 – Illustration of the VMT Reducing Effect of Local Serving Land Uses



Findings

Based on the results of this analysis, the following finding is made:

- The qualitative analysis summarizes how the addition of the proposed Project can shorten trip lengths and result in a net decrease in VMT. As stated in the State's *Technical Advisory,* a less than significant finding can be substantiated by showing the proximity of the proposed Project with other similar uses. Accordingly, it is appropriate that the proposed Project development be presumed, in accordance with the *Technical Advisory*, that it will result in a VMT reduction and result in a **less than significant** transportation impact.