June 2024 | Initial Study/Mitigated Negative Declaration

GOLDEN WEST MIDDLE SCHOOL EXPANSION PROJECT

Travis Unified School District

Prepared for:

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PLACEWORKS

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Abbreviations and Acronyms

AAQS	ambient air quality standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AF	acre-feet
BAAQMD	Bay Area Air Quality Management District
BMP	best management practice
BSA	biological survey area
CAFE	corporate average fuel economy
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CGP	Construction General Permit
CH_4	methane
CMP	congestion management program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CY	cubic yard
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
DSA	Division of the State Architect
EIR	environmental impact report
EOC	emergency operations center
EOP	emergency operations plan
EPA	US Environmental Protection Agency
EV	electric vehicle
FEMA	Federal Emergency Management Agency
FHSZ	fire hazard severity zone
FHWA	Federal Highway Administration

Abbreviations and Acronyms

FMU	Fairfield Municipal Utilities
FSSD	Fairfield-Suisun Sewer District
FTA	Federal Transit Administration
GHG	greenhouse gases
GWP	global warming potential
HCP	habitat conservation program
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt hour
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LOS	level of service
LST	localized significance thresholds
MCE	Marin Clean Energy
mg	million gallons
mgd	million gallons per day
MND	mitigated negative declaration
MT	metric ton
MTC	Metropolitan Transportation Commission
NO_X	nitrogen oxides
O_3	ozone
PDA	priority development area
PG&E	Pacific Gas and Electric
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PRD	permit registration documents
RCNM	Roadway Construction Noise Model
ROG	reactive organic gas
RPS	renewable portfolio standard
SB	Senate Bill
SFBAAB	San Francisco Bay Area Air Basin
SO_2	sulfur dioxide

Abbreviations and Acronyms

SO_X	sulfur oxides
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
UWMP	urban water management plan
VMT	vehicle miles traveled

1. Introduction

1.1 OVERVIEW

The Travis Unified School District (District) is proposing to construct 16 classrooms, a teacher workroom, restrooms, and an administration and multiuse building at Golden West Middle School (Golden West MS), located at 2651 De Ronde Drive in the City of Fairfield, Solano County, California. The project site is on a 13.88-acre parcel in the City of Fairfield. The District is not seeking state matching funds. The proposed project is required to undergo an environmental review pursuant to the California Environmental Quality Act (CEQA). This initial study provides an evaluation of the potential environmental consequences associated with this proposed project.

1.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The environmental compliance process is governed by the CEQA and the CEQA Guidelines (California Public Resources Code [PRC], Section 21000 et seq.; California Code of Regulations [CCR], Title 14, Sections 15000 et seq.). CEQA was enacted in 1970 by the California Legislature to disclose to decision makers and the public the significant environmental effects of proposed activities and to identify ways to avoid or reduce the environmental effects through feasible alternatives or mitigation measures. Compliance with CEQA applies to California government agencies at all levels: local, regional, and state agencies, boards, commissions, and special districts (such as school districts and water districts). The District is lead agency for the proposed project and is therefore required to analyze the potential environmental effects associated with the project.

PRC Section 21080(a) states that analysis of a project's environmental impact is required for any "discretionary projects proposed to be carried out or approved by public agencies…." In this case, the District has determined that an initial study is required to determine whether there is substantial evidence that implementation of the project would result in environmental impacts. An initial study is a preliminary environmental analysis to determine whether an environmental impact report (EIR), a mitigated negative declaration (MND), or a negative declaration (ND) is required for a project (14 CCR Section 15063).

1.3 ENVIRONMENTAL PROCESS

A "project" means the whole of an action that has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following:

- An activity directly undertaken by any public agency, including but not limited to public works construction and related activities clearing or grading of land, improvements to existing public structures, enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100 to 65700.

- An activity undertaken by a person which is supported in whole or in part through public agency contacts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.
- An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies (14 CCR Section 15378[a]).

The proposed discretionary actions by the District constitute a "project" because the activity would result in a direct physical change in the environment and would be undertaken by a public agency. All "projects" in the State of California are required to undergo an environmental review to determine the environmental impacts associated with implementation of the project.

1.3.1 Initial Study

The purpose of the Initial Study is to 1) provide the lead agency with information to use as the basis for deciding the proper type of CEQA document to prepare; 2) enable the lead agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a negative declaration; 3) assist in the preparation of an EIR, if one is required; 4) facilitate environmental assessment early in the design of a project; 5) provide documentation of the factual basis for the findings in an MND or ND; 6) eliminate unnecessary EIRs; and 7) determine if the project is covered under a previously prepared EIR. When an Initial Study identifies the potential for immitigable significant environmental impacts, the lead agency must prepare an EIR (14 CCR Section 15064). However, if all impacts are found to be less than significant or can be mitigated to less than significant, the lead agency can prepare an ND or an MND that incorporates mitigation measures into the project (14 CCR Section 15070).

An initial study must include a project description; a description of the environmental setting; an identification of environmental effects by checklist or other similar form; an explanation of environmental effects; a discussion of mitigation for significant environmental effects; an evaluation of the project's consistency with existing, applicable land use controls; the names of persons who prepared the study; and identification of data sources (14 CCR Section 15063[d]).

1.3.2 Mitigated Negative Declaration

The MND includes information necessary for agencies to meet statutory responsibilities related to the proposed project. State and local agencies will use the MND when considering any permit or other approvals necessary to implement the project.

One of the primary objectives of CEQA is to enhance public participation in the planning process, because public involvement is an essential feature of CEQA. Community members are encouraged to participate in the environmental review process, request to be notified, monitor newspapers for formal announcements, and submit substantive comments at every possible opportunity afforded by the District. The environmental review process provides several opportunities for the public to participate through public notice and public review of CEQA documents and public meetings.

1.4 IMPACT TERMINOLOGY

The following terminology is used to describe the level of significance of impacts.

- A finding of **no impact** is appropriate if the analysis concludes that the project would not affect the particular topic area in any way.
- An impact is considered **less than significant** if the analysis concludes that it would cause no substantial adverse change to the environment and requires no mitigation.
- An impact is considered **less than significant with mitigation incorporated** if the analysis concludes that it would cause no substantial adverse change to the environment with the inclusion of environmental commitments or other enforceable mitigation measures.
  - **Mitigation Measures.** If, after incorporation and implementation of federal, state, and local regulations, there are still significant environmental impacts, then feasible and project-specific mitigation measures are required to reduce impacts to less than significant levels. Mitigation measures must further reduce significant environmental impacts above and beyond compliance with federal, state, and local laws and regulations. Mitigation under CEQA Guidelines Section 15370 includes:
    - Avoiding the impact altogether by not taking a certain action or parts of an action.
    - Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
    - Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
    - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
    - Compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements.

An impact is considered **potentially significant** if the analysis concludes that it could have a substantial adverse effect on the environment. If any impact is identified as potentially significant, an EIR is required.

1. Introduction

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2. Environmental Setting

2.1 PROJECT LOCATION

Golden West Middle School (Golden West MS) is at 2651 De Ronde Drive in the City of Fairfield, Solano County, California (Assessor's Parcel Number 0174020040) (see Figure 1, *Regional Location*). The City of Fairfield is in the central portion of Solano County and is north of Suisun City, southwest of Vacaville, northeast of Vallejo, and northwest of Rio Vista.

Regional access to the project site is provided by California State Route 12 (SR-12), approximately three miles southwest of the campus, and Interstate 80 (I-80), approximately four miles west of the campus. The project area is bordered by residential uses to the west; vacant land, industrial, and commercial uses to the south; and public facilities and recreational uses to the north. Travis Air Force Base is east of the campus. Surrounding local roads include Dobe Lane to the south, De Ronde Drive to the east, Markeley Lane to the north, and Peabody Road to the west (see Figure 2, *Local Vicinity*, and Figure 3, *Aerial Photograph*). Access to the campus is provided via De Ronde Drive.

2.2 SURROUNDING LAND USE

The Golden West MS campus is surrounded by residential, industrial, commercial, and educational uses. According to the City of Fairfield, the campus has a general plan and zoning designation of Public Facilities (PF). School uses are permitted without discretion by the City in the PF general plan and zoning designations (City of Fairfield 2024a).

The properties adjacent to the campus to the north and east also have a designation of PF—the District's main office to the north and Travis Air Force Base to the east. Directly south of the campus the property is undeveloped and is designated for commercial and industrial uses and zoned Service Commercial (CS) and Limited Industrial (IL). To the west of the campus, the properties are designated as Residential – Low Medium Density (RLM -6) and are developed with residential uses.

2.3 EXISTING CONDITIONS

2.3.1 Operations

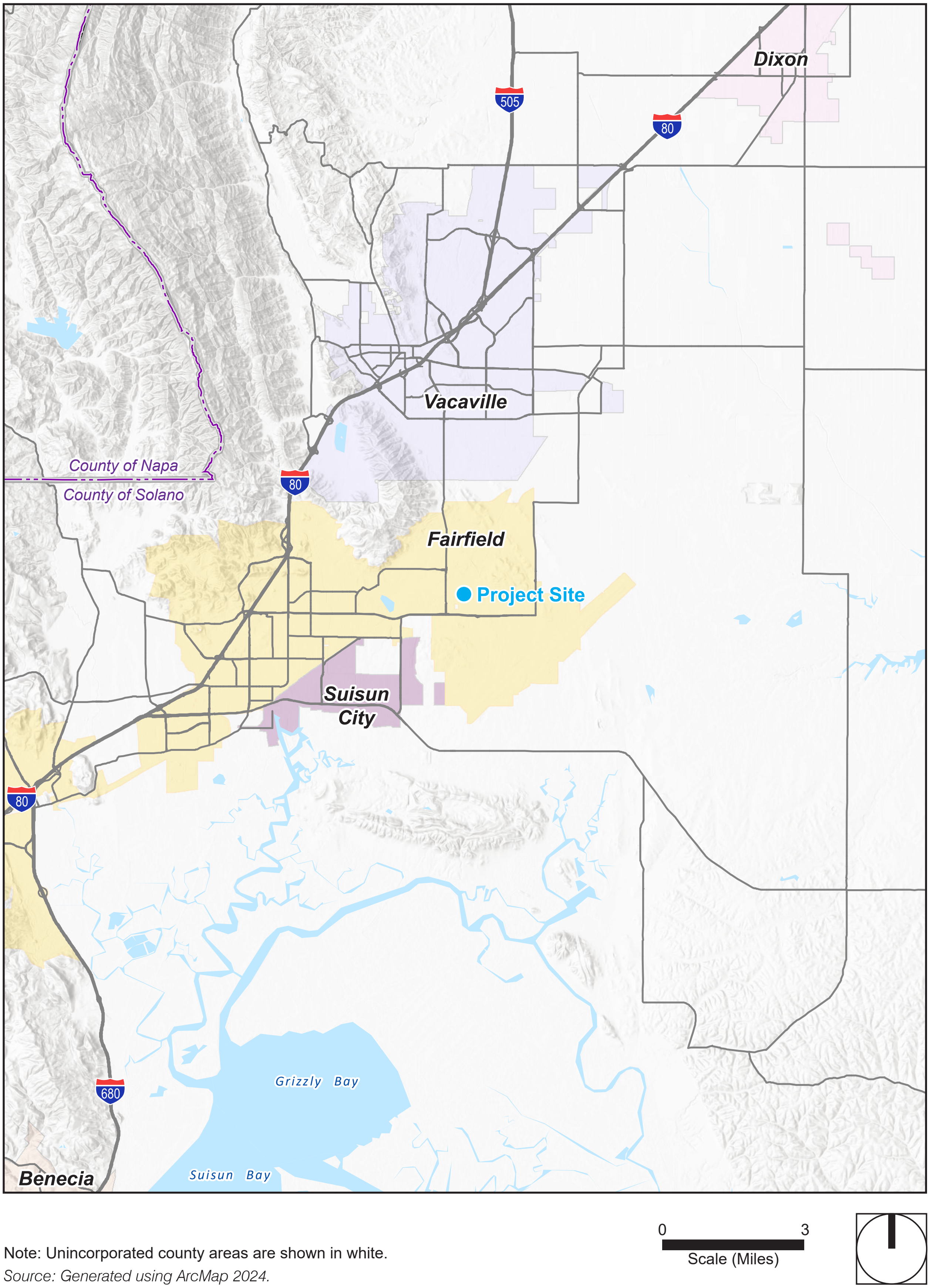
The District serves more than 5,300 students and operates five elementary schools, one middle school, one high school, one community day school, and one continuation high school. Golden West MS is the only middle school in the district (CDE 2023a). The middle school was opened in 1980, and currently serves seventh- and eighth-grade students (CDE 2023b). The enrollment at the middle school is approximately 744 students.

The campus consists of 38 classrooms and 42,520 square feet of classroom space. The campus has a multipurpose room/gymnasium, a counseling center, an administrative office, a library, and a media center (TUSD 2023). The campus also has a playground, five basketball courts, four 4-square courts, and seven volleyball courts. The quad is in the center of the campus and is surrounded by classrooms and the counseling center, administrative office, library, and media center.

2.3.2 Access and Circulation

Access to the campus is provided via De Ronde Drive. The existing parking lot is on the eastern side of the campus. The parking lot includes three driveways. The northernmost driveway provides ingress to the parking lot and the middle and southernmost driveways provide egress onto De Ronde Drive. Bus pick-up and drop-off are provided in the existing parking lot in front of the administration building (TUSD 2018).

Figure 1 - Regional Location



Note: Unincorporated county areas are shown in white.

Source: Generated using ArcMap 2024.

2. Environmental Setting

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Figure 2 - Local Vicinity

Phase 1 and Phase 2 Project Impact Areas
Golden West Middle School Project Boundary
Note: Unincorporated county areas are shown in white.
Source: Generated using ArcMap 2024.

2. Environmental Setting

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Figure 3 - Aerial Photograph

Phase 1 and Phase 2 Project Impact Areas
Golden West Middle School Project Boundary

0 600
Scale (Feet)

Source: Nearmap 2024.

2. Environmental Setting

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3. Project Description

"Project," as defined by the California Environmental Quality Act (CEQA) Guidelines, means:

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

3.1 PROPOSED PROJECT

The proposed project would be within the 13.88-acre campus of Golden West MS. The proposed project would involve the construction of additional school facilities on approximately 3.7 acres in the northeastern and eastern portions of the campus for the purpose of expanding the campus from grades 7 and 8 to grades 6 to 8 commencing in the 2025-26 school year. The project site will also include an approximately 2-acre, District-owned parcel for placement of export material that will be located approximately 300 feet north of the campus on the east side of De Ronde Drive (see Figure 2, *Local Vicinity*). In total, the proposed project would consist of 5.7 acres of District-owned land. The project would consist of two phases and would include constructing classrooms, a teacher workroom, restrooms, a staff parking lot, basketball and tennis courts, and a multiuse and administration building, and stockpiling export dirt from the Golden West MS campus onto another District-owned parcel, as further described herein.

3.1.1 Phase 1

Phase 1 Location

Phase 1 of the proposed project would consist of constructing 16 classrooms, a teacher workroom, restrooms, four new basketball courts, six new tennis courts and installing a play area to accommodate the incoming sixth graders transferring from other elementary schools within the district. The classrooms, teacher workroom, and restrooms will be in the northeastern portion of the campus, adjacent to De Ronde Drive and north of the existing gymnasium. Of the 16 classrooms, 7 standard classrooms will be south of the proposed tennis courts and staff parking lot, 5 standard classrooms will be south of the proposed staff parking lot and adjacent to De Ronde Drive, 3 standard classrooms will be north of the existing parking lot, and 1 large classroom will be surrounded by the other 15 standard classrooms. The proposed teacher workroom would be directly adjacent to the single large classroom, surrounded by the 15 standard classrooms, and the new restrooms would be next to the proposed teacher workroom (standard classroom size) (see Figure 4, *Site Plan - Campus*).

South of the single large classroom, teacher workroom, and restrooms, a new play area with new asphalt would be installed (see Figure 4). All the classroom buildings, the teacher workroom, restrooms, and play area would

3. Project Description

be on existing asphalt. To accommodate construction of Phase 1 facilities, approximately 5,500 cubic yards of fill material will be removed and deposited on the 2-acre District-owned parcel to the north of the school site.

Phase 1

Classrooms and Play Area

The classroom buildings will consist of 15 standard and 1 large classrooms in prefabricated TimberQuest buildings. The 7 classrooms south of the proposed tennis courts and proposed staff parking lot would be 980 square feet each and would total 6,860 square feet. The 5 classrooms adjacent to De Ronde Drive would be 960 square feet each and would total 4,800 square feet. The 3 classrooms north of the existing parking lot would be 960 square feet each and would total 2,880 square feet. The large classroom, teacher workroom, and restrooms would total 3,480 square feet. The total square footage for the proposed buildings constructed in Phase 1 would be approximately 18,020 square feet. Additionally, a play area with grass turf would be installed south of the large classroom, teacher workroom, and restrooms.

Staff Parking Lot

The staff parking lot would consist of 25 parking spaces with 4 EV-capable parking spaces and 1 Americans with Disabilities Act (ADA) parking space. The proposed parking lot would bring the total number of parking spaces to 74 on the Golden West MS campus. The parking lot would consist of approximately 11,600 square feet of new asphalt.

Basketball and Tennis Courts

In addition to the classrooms, teacher workroom, restrooms, and staff parking lot, Phase 1 of the proposed project would also consist of constructing four full-size basketball courts and six new tennis courts north of the proposed classrooms. The new basketball and tennis courts would consist of approximately 66,700 square feet of new asphalt.

Dirt Stockpile

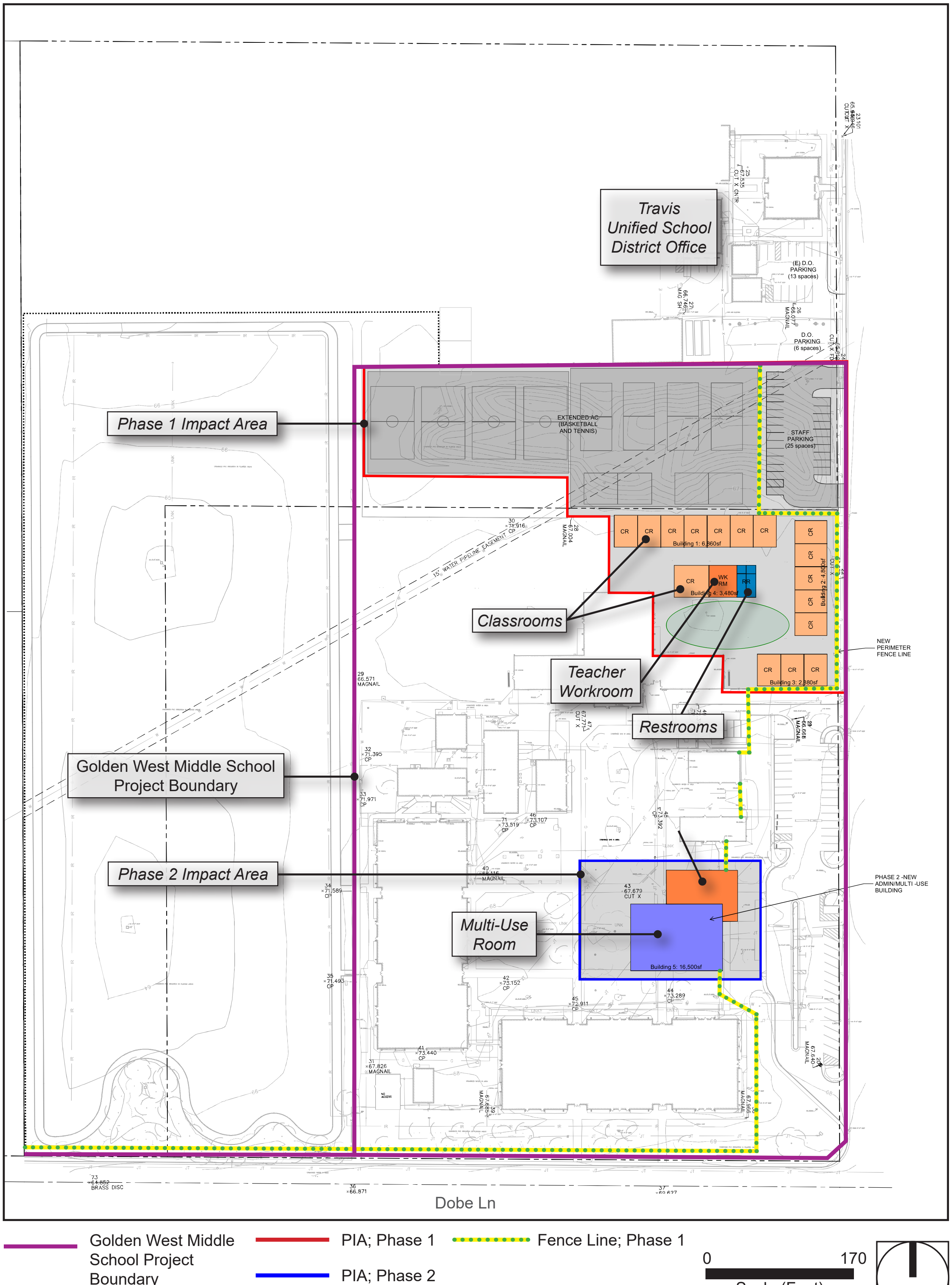
The new basketball courts, tennis courts and staff parking lot would be located on undeveloped land currently containing a dirt stockpile from previous construction activities associated with the Golden West MS campus (see Figure 5, Site Plan – District-Owned Parcel). Grading at this location would remove the existing stockpiled material and prepare the site to accommodate the construction of the basketball courts, tennis courts, and staff parking lot. The excess dirt would be transported off-site to a District-owned parcel, approximately 300 feet north of the Golden West MS campus. The off-site District-owned parcel would be graded to allow for drainage and best management practices (BMP) installed for sediment and erosion control.

Grading

Grading operations would consist of approximately 5,000 cubic yards (CY) of export for rough grading 500 CY of export for site preparation, and 1,000 CY of import for fine grading.

No trees would be removed, and no buildings would be demolished for Phase 1.

Figure 4 - Site Plan – Campus



Source: AEDIS Architects 2024.

3. Project Description

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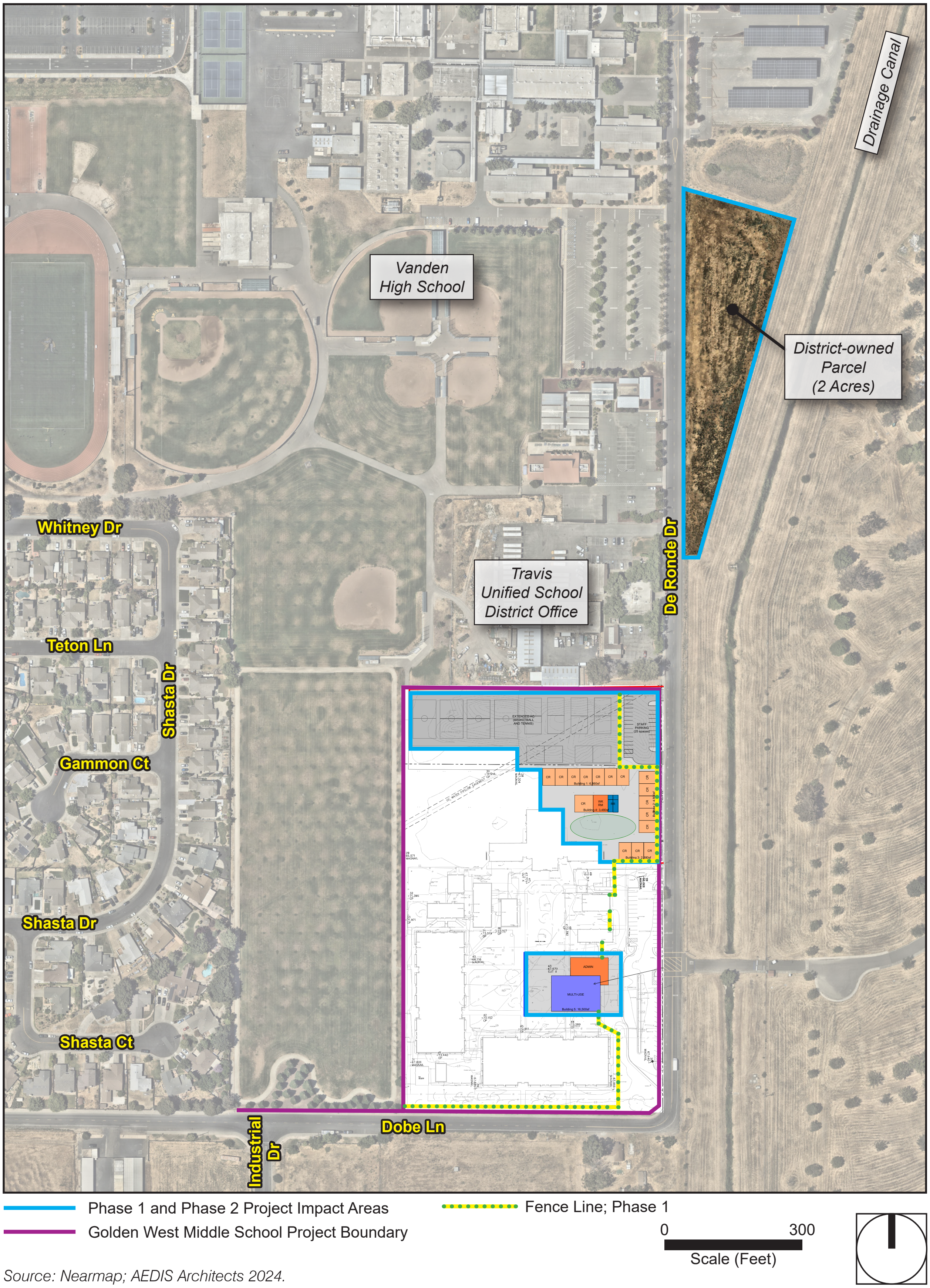
Figure 5 - Site Plan – District-Owned Parcel



Source: Nearmap; AEDIS Architects 2024.

3. Project Description

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Fencing

For Phase 1 of the project, 810 linear feet of ornamental fencing would be installed to secure the school perimeter.

3.1.2 Phase 2

Phase 2 Location

Phase 2 would consist of demolition of the existing administration building and construction of a new administration and multiuse building, construction of new concrete curbs and walkways, and installation of landscaping. The proposed administration and multiuse building would be in the southeastern portion of the school, adjacent to the existing parking lot and pick-up/drop-off area. As part of Phase 2, the existing 2,060-square-foot administration building would be demolished. Five staff members would be relocated during Phase 2 and would work out of other rooms on campus.

Administration and Multiuse Buildings

The existing administration building would be demolished and replaced by a single proposed administration and multiuse building. The proposed administration and multiuse building would be 16,500 square feet. The new administration building would house the administrative staff for Golden West MS. The multiuse building would consist of a kitchen, a cafeteria, and a stage. The kitchen would be approximately 2,500 square feet, and the cafeteria and stage would be approximately 7,000 square feet. The kitchen and cafeteria would be used to feed the students on campus, and the stage would be used for a variety of events such as school assemblies, theatrical plays, and music concerts. Approximately 43,500 square feet of pavement and grass turf will be demolished to make room for the administration and multiuse building. Additionally, five trees would be removed in Phase 2.

3.1.3 Phase 1 and 2 Improvements

For both phases of the proposed project, approximately 40,000 square feet of concrete curb and walkways will be laid, and 20,000 square feet of landscaping will be installed. Additionally, Phase 1 would reroute domestic water and sewer lines in the northeast area of the campus and install new firewater service. In Phase 2, the domestic water and sewer utilities would be connected to existing sewer and domestic water main lines. Storm drain lines would be connected on-site and routed around the buildings for Phase 1 and Phase 2. New landscaping and site concrete would be installed around the new buildings.

3.1.4 Staff and Student Enrollment

The purpose of the proposed project is to accommodate an increase in staff and students as the result of restructuring District educational programs to move sixth grade from elementary schools to Golden West MS. The current number of students at Golden West MS is 744, and the current capacity of the site is 900 students. The proposed project would increase the number of students by 450 and increase the proposed capacity of the campus to 1,300 students. The proposed project would not change the current school schedule, and no students would need to be temporarily placed elsewhere during construction.

3.1.5 Site Access, Circulation, and Parking

The proposed project would include constructing two driveways to serve the staff parking lot. Both driveways would be located off of De Ronde Drive and allow ingress and egress. The proposed parking lot would include landscaping, four EV-capable parking spaces, and one ADA parking space. A fence would separate the proposed parking lot from the proposed basketball and tennis courts to the west and the proposed classrooms to the south.

3.1.6 Project Construction

The proposed project construction would occur in two phases. Phase 1 would occur from April 2025 to August 2025, lasting approximately five months. Phase 2 of the proposed project would occur between August 2025 and August 2026; exact project construction schedule is not yet determined, but it is estimated that construction would take approximately 12 months. Construction activities would occur Monday through Friday from 7:00 am to 4:00 pm. Development of the project would require the limited demolition of existing hardscape where the proposed administration and multiuse building would be constructed during Phase 2. Construction equipment would include air compressors, cement and mortar mixers, cranes, forklifts, generators, graders, pavers, paving equipment, rollers, rubber-tired dozers, scrapers, tractors, loaders, backhoes, and welders.

3.2 DISTRICT ACTION REQUESTED

A discretionary action is an action taken by a government agency (for the proposed project, the government agency is the Travis Unified School District) that calls for an exercise of judgment in deciding whether to approve a project. The District is the lead agency under CEQA and has the principal approval authority over the project. Following is a list of the discretionary actions and approvals required for project implementation.

- Adopt the Mitigated Negative Declaration
- Adopt the Mitigation Monitoring and Reporting Program
- Approve the project

4. Environmental Checklist

4.1 PROJECT INFORMATION

1. **Project Title:** Golden West Middle School Project.

2. **Lead Agency Name and Address:**
Travis Unified School District
2751 De Ronde Drive
Fairfield, CA 94533

3. **Contact Person and Phone Number:**
Gabe Moulaison, Chief Business Officer
(707) 437-4604

4. **Project Location:**
The project site is located at the campus of Golden West Middle School at 2651 De Ronde Drive, Fairfield, CA, 94533. The project site is located at Assessor's Parcel Number 0174020040; see Figure 4, *Site Plan - Campus*, for more details.

5. **Project Sponsor's Name and Address:**
Travis Unified School District
2751 De Ronde Drive
Fairfield, CA 94533

6. **General Plan Designation:**
PF (Public Facilities/Institutional).

7. **Zoning:**
The entire project site is zoned Public Facilities (PF) by the Fairfield Municipal Code.

8. **Description of Project:**
The proposed project would consist of 5.7 acres of District-owned land. It would involve two phases, including the construction of classrooms, a teacher workroom, restrooms, a staff parking lot, basketball and tennis courts, a multiuse and administration building, and the stockpiling of export dirt from the Golden West MS campus onto another District-owned parcel. Phase 1 would comprise 16 classrooms, a teacher workroom, restrooms, four new basketball courts, six new tennis courts, and a grass turf play area south of the classrooms. It would also involve installing 690 linear feet of seven-foot tube steel fencing around specific areas. Phase 2 would involve demolishing the existing administration building, constructing a new administration and multiuse building, installing new concrete curbs and walkways, landscaping, and installing 120 linear feet of seven-foot tube steel fencing around the new administration and multiuse building, the southern border of the campus, and the northern side of Dobe Lane.

4. Environmental Checklist

9. **Surrounding Land Uses and Setting:**
   Golden West Middle School is bordered by De Ronde Drive to the east, Markeley Lane to the north, Peabody Road to the west, and Dobe Lane to the south. Surrounding use consists of a military easement and paintball park to the east, Travis Unified School District's offices and Vanden High School to the north, residential uses to the west, and industrial uses to the south.

10. **Other Public Agencies Whose Approval Is Required (e.g., permits, financing approval, or participating agreement):**
    Division of State Architect -Approval of construction plans

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

    Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.94 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

    A mitigated negative declaration requires tribal consultation pursuant to Assembly Bill 52. No tribes have requested to be notified of projects pursuant to AB 52 to the District. Therefore, no further consultation is required under AB 52. Refer to Section 5.18, *Tribal Cultural Resources*.

4.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

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

4.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

[signature] 7/1/2024

Signature *Date*

4.4 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) **Earlier Analyses Used.** Identify and state where they are available for review.

   b) I**mpacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

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This section provides an evaluation of the impact categories and questions contained in the checklist and identifies mitigation measures, if applicable.

5.1 AESTHETICS

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

Would the project:

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

No Impact. A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the public. The proposed project site is located on the Golden West Middle School campus and on the District-owned parcel 300 feet north of the campus. The surrounding area is developed with a mix of residential, light industrial, and commercial. Undeveloped areas border the project site to the east and south. To the east, the undeveloped area is part of the Travis Air Force Base and the area to the south is zoned for commercial use. The City's General Plan Land Use Element has designated hillsides, ridgelines, and agricultural areas as scenic resources. Specifically, the Cement Hill Range, the Suisun Marsh, Nelson Hill, Mankas Corner Road, and Clayton Road have been designated scenic resources (City of Fairfield 2016).

All of the designated scenic resources within the City of Fairfield are outside of the project area. The nearest scenic resource is the Cement Hill Range and is approximately two miles from the project site. Additionally, the

5. Environmental Analysis

nearest road that is a designated scenic resources is Mankas Corner Road and is approximately six miles from the project site.

Due to the distance, topography, and intervening development, the proposed project would not obstruct or alter public views of any scenic vistas. No impact would occur, and no mitigation is required.

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

No Impact. The project site is not within a state scenic highway. The nearest designated state scenic highway to the project site is State Route 160 (SR-160) approximately 22 miles east of the project site and the nearest eligible state scenic highway State Route 128 (SR-128), approximately 15 miles northwest of the project site, as listed on the California Department of Transportation California Scenic Highway Mapping System (Caltrans 2024). Due to the distance, topography, and intervening development, the project would not impact scenic resources within a state scenic highway. Therefore, no impact would occur, and no mitigation is required.

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

Less Than Significant Impact. The Golden West MS campus and District-owned parcel are in an urbanized area of the city. For an incorporated city, "urbanized area" means the city that either by itself or, in combination with two contiguous incorporated cities, has a population of at least 100,000 persons. Fairfield has a population of approximately 120,768 persons as of July 1, 2023 (US Census 2023). Therefore, the project site is in an urbanized area as defined by CEQA Guidelines 15191(m)(1).

The project site is on an existing junior high school campus and a District-owned parcel that is consistent with the general plan designation of PF and the zoning designation of PF, which allows for schools. Additionally, the buildings would be single story and would not obstruct scenic views, and the proposed project would be consistent with the development currently on-site. Therefore, implementation of the project would not conflict with applicable zoning or other regulations governing scenic quality, and no mitigation is required.

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. Nighttime illumination and glare impacts are the effects of a development's exterior lighting upon adjoining uses and areas. Light reflecting off passing cars and large expanses of glazing (i.e., glass windows) or other reflective surfaces can also generate glare. Excessive light and/or glare can impair vision, cause annoyance, affect sleep patterns, and generate safety hazards for drivers. Daytime glare is caused by sunlight reflecting off of reflective surfaces such as parked cars and cars traveling on adjacent roadways, light-colored building material, and windows.

Existing sources of light on-site include security/building lighting and light emanating from windows. Existing sources of glare on-site include existing buildings, parked cars, and cars traveling along adjacent roadways.

Existing sources of light in the surrounding community include vehicle headlights, streetlights, security lights, and residential, commercial, and industrial lighting (both exterior lighting and light emanating from windows). Existing sources of daytime glare in the surrounding community include vehicles parking and traveling on existing roadways, light-colored building material, and windows.

The proposed project would increase the number of buildings and vehicles on the Golden West MS campus, which would introduce new sources of light and glare. However, the new light and glare sources would be similar to existing conditions and to neighboring uses. Considering the existing sources of light and glare in the surrounding area and currently on-site, the amount and intensity of lighting proposed on-site would not be substantially greater or different from existing lighting in the surrounding area. Therefore, impacts from light and glare from the proposed project would be less than significant.

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5.2 AGRICULTURE AND FORESTRY RESOURCES

Issues		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES. **In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:**					
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				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

Would the project:

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

No Impact. The proposed project would include constructing classrooms, a teacher workroom, restrooms, a staff parking lot, basketball and tennis courts, and more. The Golden West MS campus is surrounded by residential, industrial, commercial, and educational uses. According to the City of Fairfield, the campus has a general plan and zoning designation of Public Facilities (PF). The project site is not identified as an area of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2024a). There are no agricultural uses within the Golden West MS, and the proposed project would not convert any specially designated farmland identified on the state's Farmland Mapping and Monitoring Program. No impact would occur.

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

No Impact. Williamson Act contracts restrict the use of privately owned land to agriculture and compatible open-space uses under contract with local governments; in exchange, the land is taxed based on actual use rather than potential market value. The project site does not include land enrolled in a Williamson Act contract (DOC 2024a). The existing zoning for the project site is PF. Implementation of the proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. No impact would occur.

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 proposed project would occur within the boundaries of an existing middle school campus and the project site is not zoned for forest land or timberland. Implementation of the proposed project would not conflict with existing zoning for forest land or timberland. No impact would occur.

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

No Impact. The proposed project would occur within the boundaries of an existing middle school and no forest land would be converted. No impact would occur.

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

No Impact. The proposed project would occur within the boundaries of the existing middle school and no farmland or agricultural land would be converted to nonagricultural use or nonforest use. No impact would occur.

5.3 AIR QUALITY

The Air Quality section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthy pollutant concentrations. A background discussion on the air quality regulatory setting, meteorological conditions, existing ambient air quality in the vicinity of the project site, and air quality modeling can be found in Appendix A.

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone (O_3), carbon monoxide (CO), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead (Pb). Areas are classified under the federal and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The San Francisco Bay Area Air Basin (SFBAAB), which is managed by the Bay Area Air Quality Management District (BAAQMD), is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS, and nonattainment for PM_{10} under the California AAQS (CARB 2024).

Furthermore, BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO_X, PM_{10}, and $PM_{2.5}$. Development projects below the regional significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard, contribute substantially to an existing or projected air quality violation, or substantially contribute to health impacts. Would the project:

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

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

Less Than Significant Impact. BAAQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB to achieve National and California AAQS. In April 2017, BAAQMD adopted its 2017 Clean Air Plan, which is a regional and multiagency effort to reduce air pollution in the SFBAAB. Regional growth projections are used by BAAQMD to forecast future emission levels in the

SFBAAB. For the Bay Area, these regional growth projections are provided by the Association of Bay Area Governments (ABAG) and transportation projections are provided by the Metropolitan Transportation Commission (MTC) and are partially based on land use designations in city/county general plans. Typically, only large, regionally significant projects have the potential to affect regional growth projections.

The proposed project would result in the expansion of the existing middle school and would increase student capacity by 450 students. Based on the scope and nature of the project and that the student population would be transferred from other schools within the District, the proposed project would not substantially affect housing, employment, or population projections within the region, which are the basis of the 2017 Clean Air Plan projections.

Furthermore, the net increase in regional emissions generated by the proposed project would be less than the BAAQMD's emissions thresholds (see criterion (b), below). The BAAQMD emissions thresholds were established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. Therefore, the proposed project would not conflict with or obstruct implementation of the 2017 Clean Air Plan and impacts would be considered less than significant.

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 With Mitigation Incorporated. The following describes project-related impacts from regional short-term construction activities and regional long-term operation of the proposed project.

Regional Short-Term Construction Impacts

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from demolition and soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on site would vary daily as construction activity levels change. Construction activities associated with the project would result in emissions of ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$.

Construction Fugitive Dust

Ground-disturbing activities during project construction could generate fugitive dust (PM_{10} and $PM_{2.5}$) that, if left uncontrolled, could expose the areas downwind of the construction site to air pollution from the construction dust. Fugitive PM_{10} is typically the most significant source of air pollution from the dust generated from construction. The amount of fugitive dust generated during construction would be highly variable and is dependent on the amount of material being demolished, the type of material, moisture content, and meteorological conditions. BAAQMD does not provide a quantitative threshold for construction-related fugitive dust emissions, and a project's fugitive dust emissions are considered acceptable with implementation of BAAQMD's best management practices. In other words, there could be a significant impact if the best management practices are not enforced. For this reason, the project's fugitive dust emissions with the incorporation of BAAQMD's best management practices are quantified for reference in Table 1, *Construction-Related Criteria Air Pollutant Emissions Estimates*.

Table 1 Construction-Related Criteria Air Pollutant Emissions Estimates

Year	Criteria Air Pollutants (tons/year)[1, 2]					
	ROG	NO_X	Exhaust PM_{10}	Fugitive PM_{10}	Exhaust $PM_{2.5}$	Fugitive $PM_{2.5}$
2025	1	1	<1	<1	<1	<1
2026	<1	1	<1	<1	<1	<1
Total	**1**	**2**	**<1**	**<1**	**<1**	**<1**
	Criteria Air Pollutants (average lbs/day)					
	ROG	NO_X	Exhaust PM_{10}	Fugitive PM_{10}	Exhaust $PM_{2.5}$	Fugitive $PM_{2.5}$
Average Daily Emissions	7	9	1	2	1	1
BAAQMD Average Daily Threshold	**54**	**54**	**82**	**BMPs**	**54**	**BMPs**
Exceeds Average Daily Threshold?	No	No	No	N/A	No	N/A

Source: CalEEMod Version 2022.1.

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

2 Includes implementation of fugitive dust control measures required BAAQMD BMPs, including watering disturbed areas a minimum of two times per day, reducing speed limit to 25 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping. Average daily emissions are based on the total construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be about 359 days.

Extended exposure to particulate matter can increase the risk of chronic respiratory disease, which would be a significant impact. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. Health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). However, implementation of Mitigation Measure AQ-1 would ensure that the construction contractor complies with BAAQMD's best management practices to reduce fugitive dust. Impacts would be less than significant with mitigation.

Mitigation Measures

AQ-1 The Travis Unified School District (District) shall specify in the construction bid that the project construction contractor shall comply with the following the Bay Area Air Quality Management District's best management practices for reducing construction emissions of uncontrolled fugitive dust (coarse inhalable particulate matter [PM_{10}] and fine inhalable particulate matter [$PM_{2.5}$]):

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- Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering shall be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water shall be used whenever possible.
- Pave, apply water twice daily or as often as necessary to control dust, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed, all paved access roads, parking areas, and staging areas at the construction site to control dust.
- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand).
- Limit vehicle traffic speeds on unpaved roads to 15 miles per hour.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff from public roadways.

These measures shall be noted on grading plans prepared by the District. The construction contractor shall implement these measures during ground disturbing activities. The Travis Unified School District shall verify compliance that these measures have been implemented during normal construction site inspections.

Construction Exhaust Emissions

Construction activities associated with the proposed project are anticipated to disturb approximately 5.70 acres on the project site.[1] The proposed project would involve demolition, site preparation and soil haul, rough grading and soil haul, fine grading and soil haul, utilities trenching, building construction, paving, architectural coating, and finishing/landscaping. Phase 1 construction would occur from April 2025 to August 2025, and Phase 2 construction would occur from August 2025 to August 2026. Construction emissions were estimated

[1] Modeling considers disturbance of 3.70 acres. Site preparation and grading emissions have been multiplied by an adjustment factor of 1.54 (5.7 acres/3.7 acres = 1.54) to account for the additional 2 acres parcel where fill would be placed.

using the California Emissions Estimator Model (CalEEMod), version 2022.1, and are based on the preliminary construction duration provided by the District. Potential construction-related air quality impacts are determined by comparing the average daily criteria air pollutants emissions generated by the proposed project-related construction activities to the BAAQMD significance thresholds in Table 1. Average daily emissions are based on the annual construction emissions divided by the total number of active construction days. As shown in Table 1, criteria air pollutant emissions from construction equipment exhaust would not exceed the BAAQMD average daily thresholds, and impacts from project-related construction activities to the regional air quality would be less than significant.

Long-Term Operation-Related Air Quality Impact

Typical long-term air pollutant emissions are generated by area sources (e.g., landscape fuel use, aerosols, architectural coatings, and asphalt pavement), energy use (natural gas), and mobile sources (i.e., on-road vehicles). As identified in Section 3.17, *Transportation*, and in Appendix D, the proposed project would generate approximately 950 weekday vehicle trips.[2] As shown in Table 2, *Operational Criteria Air Pollutant Emissions Estimates*, it is anticipated that operation of the proposed project would result in minimal emissions overall and would not exceed the BAAQMD regional operation-phase significance thresholds. Impacts to the regional air quality associated with operation of the proposed project would be less than significant.

Table 2 Operational Criteria Air Pollutant Emissions Estimates

	Criteria Air Pollutants (tons per year)			
Category	**.15**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Mobile[1]	<1	<1	<1	<1
Area	<1	<1	<1	<1
Energy	0	0	0	0
Total	**1**	**<1**	**<1**	**<1**
BAAQMD Regional Threshold	**10**	**10**	**15**	**10**
Exceeds Threshold?	No	No	No	No
	Criteria Air Pollutants (average pounds per day)			
Category	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Mobile[1]	2	1	3	1
Area	1	<1	<1	<1
Energy	<1	<1	<1	<1
Total	**3**	**2**	**3**	**1**
BAAQMD Regional Threshold	**54**	**54**	**82**	**54**
Exceeds Threshold?	No	No	No	No

Source: CalEEMod Version 2022.1.
Notes: lbs: Pounds. Highest winter or summer emissions report.
1 Mobile emission calculations consider 945 vehicle trips based on the trip generation rate of 2.10 trips/student, as provided by Garland Associates.

2 Mobile emission calculations consider 945 vehicle trips based on the trip generation rate of 2.10 trips/student.

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c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The proposed project could expose sensitive receptors to elevated pollutant concentrations if it causes or significantly contributes to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects.

Construction Health Risk

Emissions from construction equipment primarily consist of diesel particulate matter (DPM). The project would elevate concentrations of toxic air contaminants (TAC) and construction exhaust $PM_{2.5}$ in the vicinity of sensitive residential land uses (i.e., receptors) during construction activities. The nearest sensitive receptors to the project site include the students at Golden West Middle School and the residences to the west of the project site. Construction activities would occur near these sensitive receptor locations. As a condition of approval for the proposed project, construction activities would require that all diesel off-road equipment greater than 25 horsepower have engines that meet either US Environmental Protection Agency (EPA) or California Air Resources Board (CARB) Tier 4 Interim emission standards. The requirement of construction equipment with engines that meet Tier 4 Interim standards would reduce cancer risk impacts to the students and residential receptors. Thus, construction emissions would not pose a health risk to on-site and off-site receptors, and project-related construction health impacts would be less than significant.

Operation Phase Community Risk and Hazards

Types of land uses that typically generate substantial quantities of criteria air pollutants and TACs include industrial (stationary sources), manufacturing, and warehousing (truck idling) land uses. These types of major air pollutant emissions sources are not included as part of the proposed expansion to the middle school. The proposed project would not include stationary sources that emit TACs and would not generate a significant amount of heavy-duty truck trips (a source of DPM). Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during operation, and impacts would be less than significant.

Carbon Monoxide Hotspots

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 parts per million (ppm) or the 8-hour standard of 9 ppm. The proposed project would not conflict with the Solano County Transportation Authority's (SCTA) Congestion Management Program (CMP) because it would not hinder the capital improvements outlined in the CMP or alter regional travel patterns. SCTA's CMP must be consistent with MTC's/ABAG's Plan Bay Area 2050. An overarching goal of the regional Plan Bay Area 2050 is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions. While the proposed project would involve the expansion of the existing middle school, it would be consistent with the overall goals of Plan Bay Area 2050 because it would serve the population surrounding the project site.

Furthermore, under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—to generate a significant CO impact. Implementation of the proposed project is anticipated to increase from existing conditions, but the proposed project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (BAAQMD 2023). Project implementation would generate 333 AM (morning) peak hour trips. In addition, as seen on Figure 7 of the Traffic/ Transportation Impact Analysis (Appendix D), the intersection with the greatest traffic volumes would yield 1,187 vehicles per hour, which is less than the 44,000 vehicles per hour threshold. As a result, the project would not have the potential to substantially increase CO hotspots at intersections in the project vicinity, and impacts 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 proposed project would not result in objectionable odors. The threshold for odor is if a project creates an odor nuisance pursuant to BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states:

> No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property.

The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The proposed project involves expansion of the middle school and would not fall within the objectionable odors land uses. Emissions from construction equipment, such as diesel exhaust and volatile organic compounds from architectural coatings and paving activities may generate odors. However, these odors would be low in concentration, temporary, and would not affect a substantial number of people. Odor impacts would be less than significant.

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5.4 BIOLOGICAL RESOURCES

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

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?

Less Than Significant Impact With Mitigation Incorporated. The project site is entirely developed and surrounded by commercial, industrial, and residential uses. According to the Solano Multispecies Habitat Conservation Plan (Solano HCP), the project site is located in Zone 1-Urban Zone, and the vegetation and cover type is considered developed (SCWA 2012a, 2012b). Under the Zone 1-Urban designation, development including the construction and maintenance of public and private facilities consistent with local general plans and local, State, and federal laws is considered a "covered activity" (SCWA 2012a). Additionally, the project site is in the Valley Floor Grassland Swainson's Hawk and Burrowing Owl Conservation Areas, which encompass all of Solano County. The Valley Floor Grassland Conservation Areas for the Burrowing Owl is considered suitable habitat (SCWA 2012b).

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On April 23, 2024, an ECORP biologist conducted a site reconnaissance visit within the Biological Survey Area (BSA) (see Appendix B); see Figure 6, *Biological Survey Area*. No Burrowing Owls or their signs (e.g. white-wash, pellets, or feathers) were observed within the project site. However, implementation of Mitigation Measure BIO-1 would reduce potential impacts to burrowing owls to less than significant. BIO-1 would consist of a qualified biologist conducting a preconstruction survey for nesting burrowing owls within 14 days before initiating project activities in the BSA and a 250-foot buffer, with appropriate timing and weather conditions, and if active burrows are found, an avoidance buffer and plan would be implemented in consultation with the California Department of Fish and Wildlife (CDFW) prior to ground disturbance.

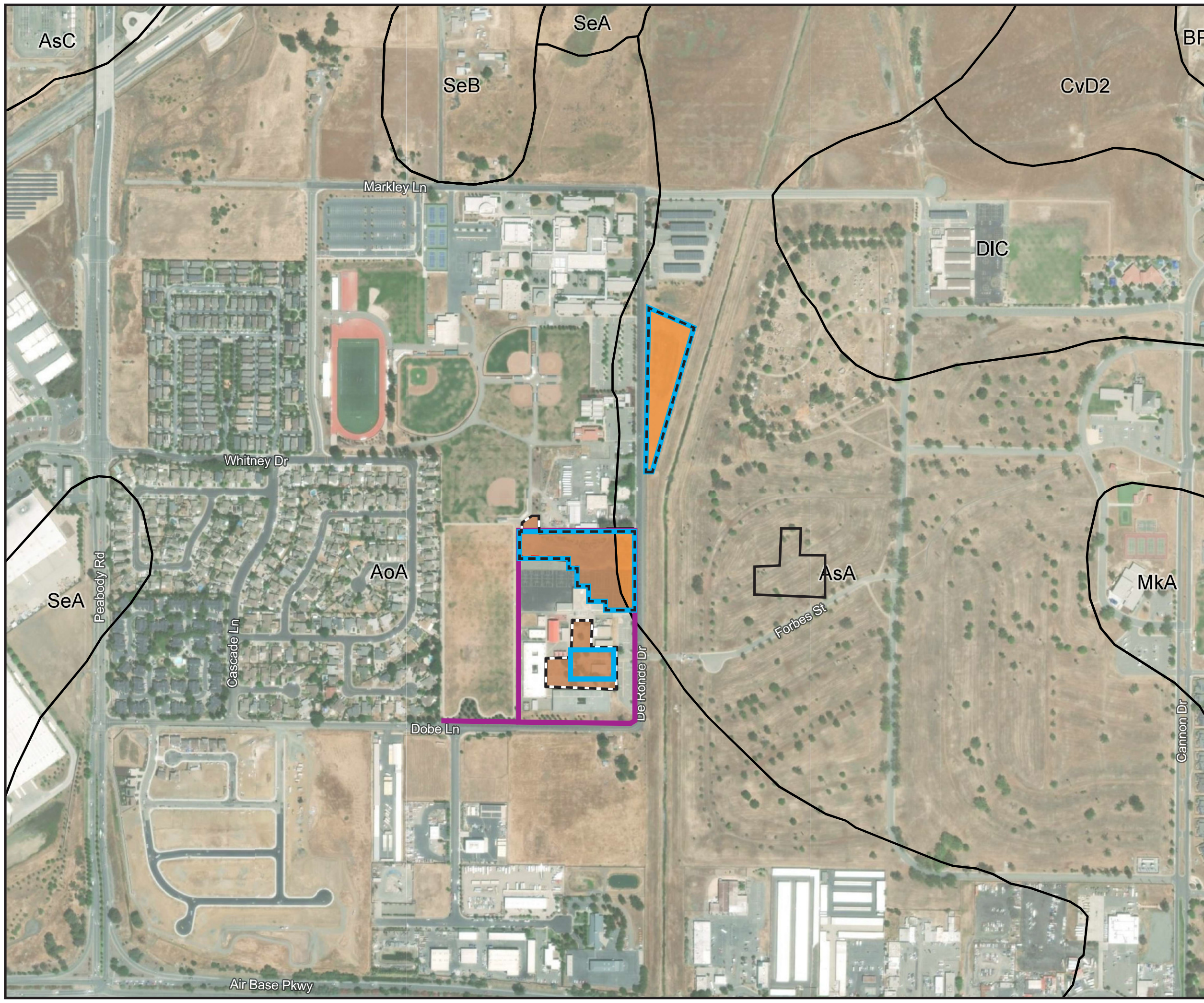
Though the project site is in the Valley Floor Grassland Conservation Areas, these conservation areas for Swainson's hawk provide a less suitable habitat and are considered lower habitat quality (SCWA 2012b). However, Swainson's hawk does have the potential to occur in the area immediately adjacent to the BSA. Implementation of Mitigation Measure BIO-2 would reduce impacts to less than significant. BIO-2 would consist of conducting a Swainson hawk survey during the nesting season (March 1 to August 31) if project activities are scheduled during that time. Results of the survey would be submitted to the CDFW for review.

The BSA supports potential nesting habitat for special-status birds, including raptors, and other common birds protected under the Migratory Bird Treaty Act. To minimize potential impacts to special-status birds, Mitigation Measure BIO-3 would be implemented. BIO-3 would consist of a qualified biologist conducting a preconstruction survey for nesting raptors within the BSA and a 500-foot buffer, within 14 days before commencing project activities. Additionally, a qualified biologist would conduct a preconstruction nesting bird (nonraptor) survey of all areas associated with construction activities, and a 100-foot buffer, within 14 days prior to commencement of construction. If active nests are found, a no-disturbance buffer determined by the biologist shall be established and maintained until the fledglings are capable of flight and independent of the nest, as determined by the qualified biologist.

Pallid bat, Townsend's bat, and day-roosting bats have the potential to occur within suitable day-roosting habitat in the trees and building in the southernmost area of the BSA. Trees would be removed during Phase 2 of the proposed project, and the existing administrative building would be demolished. No trees would be removed as part of Phase 1. To reduce potential impacts to Pallid bat, Townsend's bat, and day-roosting bats, Mitigation Measure BIO-4 would be implemented. BIO 4-would consist of a qualified bat biologist conducting a bat habitat assessment for suitable bat roosting habitat with the BSA. If roosting bats, bat sign, or evidence of previous occupation by bats are found in any structures that would be impacted by project activities during the bat habitat assessment, a bat management plan would be prepared by a qualified bat biologist and submitted to CDFW. If no suitable roosting habitat is identified, no further measures would be necessary.

With the implementation of mitigation measures BIO-1 through BIO-4, the proposed project would not have a substantial adverse effect on habitat or candidate, sensitive, or special status species. Therefore, a less than significant impact would occur.

Figure 6 - Biological Survey Area



Study Area (7.36 Acres)

Phase 1 and Phase 2 Project Impact Areas

Golden West Middle School Project Boundary

NRCS Soil Types within Study Area

AoA - Antioch-San Ysidro complex, 0 to 2 percent slopes

AsA - Antioch-San Ysidro complex, thick surface, 0 to 2 percent slopes

0 950
Scale (Feet)

Source: ECORP Consulting 2024.

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Mitigation Measure

BIO-1 A preconstruction survey for nesting burrowing owl will be conducted by a qualified biologist within 14 days prior to commencement of Project activities within the biological survey area (BSA) and a 250-foot buffer. Surveys shall be conducted at appropriate times and in appropriate weather conditions to maximize detection. If active burrowing owl burrows are found, an avoidance buffer will be immediately established, and an avoidance plan will be prepared in consultation with CDFW prior to the commencement of any ground-disturbing activities.

BIO-2 If project activities are scheduled during the Swainson's hawk nesting season (March 1 to August 31), then prior to beginning work on the project, a qualified biologist shall survey for Swainson's hawk nesting activity. The survey area shall include a 0.5-mile distance surrounding the BSA. The qualified biologist shall conduct surveys according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). Survey results shall be submitted to CDFW for review.

If Swainson's hawk nesting activity is observed during the survey, then the survey results shall be submitted to CDFW for review and acceptance prior to starting Project activities. If the qualified biologist identifies nesting Swainson's hawks, then they shall recommend a no disturbance buffer, and the contractor shall implement the buffer under the supervision of a qualified biologist. Project activities shall be prohibited within the no disturbance buffer while the nest is occupied and active. Project activities may proceed within the buffer when a qualified biologist determines that the young have fledged or that the nest is no longer active. If there is a lapse in project-related work of 14 days or longer, then an additional survey shall be conducted prior to resuming project activities.

BIO-3 A qualified biologist shall conduct a preconstruction survey for nesting raptors, within the BSA and a 500-foot buffer, within 14 days of commencement of project activities (can be conducted concurrently with nesting bird surveys, as appropriate). If an active nest is located, a no-disturbance buffer will be established as determined by the biologist and maintained until a qualified biologist determines the young have fledged or the nest is no longer occupied.

A qualified biologist shall conduct a preconstruction nesting bird (non-raptor) survey (can be conducted concurrently with raptor surveys, as appropriate) of all areas associated with construction activities, and a 100-foot buffer around these areas, within 14 days prior to commencement of construction. If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

5. Environmental Analysis

BIO-4 A qualified bat biologist will conduct a bat habitat assessment for suitable bat roosting habitat prior to any construction activities. The habitat assessment should be conducted one year prior to the initiation of construction activities, if feasible, and no less than 30 days prior to the initiation of construction activities. If no suitable roosting habitat is identified, no further measures are necessary. If suitable roosting habitat and/or signs of bat use are identified during the assessment, the roosting habitat should be avoided to the extent possible.

If suitable roosting habitat is found in trees and those trees will be removed, a qualified biologist shall conduct focused surveys during the bat active period, March to September, or when evening temperatures are not below 45 degrees Fahrenheit (°F) and rain is not over 0.5 inch in 24 hours, to determine whether roosting bats are present. If no bats are found onsite, no further measures will be necessary. If bats are found roosting in trees that cannot be avoided, the trees will be removed either (1) between approximately March 1 (or when evening temperatures are above 45°F and rainfall less than 0.5 inch in 24 hours occurs) and April 15, prior to parturition of pups; or (2) between September 1 and October 15 (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than 0.5 inch in 24 hours). A tree with potential roosting habitat may be removed during the maternity season (April 15 to September 1) only if the results of an evening emergence survey are negative for bat presence and it is removed by the two-step tree removal process described below. If bat presence is found during the emergence survey, then removal of that tree must wait until after maternity season.

Two-step tree removal will occur over two consecutive days under the supervision of a qualified bat biologist. On Day 1, small branches and small limbs containing no cavities, crevices, or exfoliating bark (or outer fronds in the case of palm trees), as identified by a qualified bat biologist, shall be removed first, using chainsaws only (i.e., no dozers, backhoes). The following day (Day 2), the remainder of the tree is to be felled/removed.

If roosting bats, bat sign, or evidence of previous occupation by bats is found in any structures that will be impacted by project activities during the bat habitat assessment, a bat management plan will be prepared by a qualified bat biologist and submitted to CDFW. The Bat Management Plan will provide a site-specific approach to avoiding impacts to roosting bats and implementing appropriate mitigation strategies for the loss of bat roosting habitat present within the structures based on the results of the bat habitat assessment and subsequent emergence and acoustic surveys. If no sign of bat use is found no further measures are necessary.

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

No Impact. Riparian habitats are those occurring along the banks of rivers and streams. There are no riparian habitats mapped on the National Wetlands Mapper maintained by the US Fish and Wildlife Service within the boundaries of the school (USFWS 2024). Additionally, the project site is entirely developed and does not contain any natural drainages or water courses. Therefore, there would be no impact.

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

No Impact. Wetlands are defined under the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs. There are no wetlands mapped on the National Wetlands Mapper maintained by the US Fish and Wildlife Service within the boundaries of the project site (USFWS 2024). The project would be entirely within the project site and would not alter the existing boundaries. However, a Riverine habitat exists approximately 90 feet to the east of the District-owned parcel. Dirt fill would be placed on the District-owned parcel but would not impact the Riverine habitat. Best management practices (BMP) related to erosion control would reduce these potential impacts to less than significant. Erosion control related BMPs would bind the soil surface to prevent the soil particles from being detached by water and silt fence will be installed around the perimeter of the fill material to prevent erosion and transport of any material offsite. Therefore, implementation of the proposed project would not impact any wetlands.

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 proposed project is located within the Golden West MS campus and is developed with school uses such as classrooms, an administration building, a playground, a quad, and an asphalt play area with basketball courts, foursquare courts, and volleyball courts. The project site does not contain any creeks or aquatic habitats that would support fish or other aquatic wildlife. However, the project site does contain trees which could be used by migratory birds. The campus does not have any native habitat or wildlife corridors and is not available for overland wildlife movement due to existing school safety fencing along the perimeter. According to the Solano HCP, the project site is located in a developed area and is not located in a key wildlife corridor. The nearest key wildlife corridor is located approximately two miles north of the project site (SCWA 2012c). Therefore, impacts would be less than significant.

5. Environmental Analysis

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

Less Than Significant Impact With Mitigation Incorporated. The school has trees of various species, sizes, and maturity throughout the campus. The City of Fairfield Municipal Code Section 25.36 prohibits removal, cutting down, conducting excessive unnatural pruning, topping, or disfigurement of any protected tree, or perform any act which results in the premature death or decline of a protected tree. No trees would be removed for Phase 1, and five trees would be removed for Phase 2. All five trees were identified during a tree survey that was conducted prior to project approval. Of the five trees identified, three consist of interior live oak (*Quercus wislizeni*) that have a larger than 6-inch diameter at breast height measurement. These trees would require a tree removal permit per the City of Fairfield Municipal Code Section 25.36. Although the District is not required to comply with local ordinance regulating tree removal within the boundaries of District property, the District may choose to acquire tree removal permits as part of the ongoing good neighbor policy. Therefore, impacts would be less than significant.

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

No Impact. The proposed project is within the Solano HCP. The purpose of the Solano HCP is to promote conservation of biological diversity and preservation of endangered species and their habitat while recognizing private property rights, economic health, and ongoing maintenance and operation of public and private facilities and covers 37 species (SCWA 2012d). The Solano HCP has designated the project site as Zone 1-Urban. This designation allows for development including the construction and maintenance of public and private facilities, consistent with local general plans and local, State, and federal laws is considered a "covered activity" (SCWA 2012a). The proposed project would fall under this designation and would be considered a covered activity. Additionally, the project site is on the Golden West MS campus and has been developed with school uses. Therefore, the proposed project would not conflict with the Solano HCP. No impact would occur.

5.5 CULTURAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?			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 § 15064.5?

Less Than Significant Impact. The CEQA Guidelines Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally, a resource is considered "historically significant" if it meets one of the following criteria:

i) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

ii) Is associated with the lives of persons important in our past;

iii) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;

iv) Has yielded, or may be likely to yield, information important in prehistory or history.

The proposed project would be implemented at the Golden West MS campus. The campus is not historically significant and does not contain historic structures. The middle school is not listed as historical resources in the National Register of Historic Places, California Historical Landmarks, or California Historical Resources (NPS 2024; OHP 2024a, 2024b). Therefore, there are no resources on the project site that would be considered "historically significant." Impacts 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 Incorporated. Mitigation Measure CUL-1 requires that if any evidence of cultural resources is discovered, all work within the vicinity of the find will stop until a qualified archaeological consultant can evaluate the finds. Therefore, impacts to archaeological resources would be reduced to a less than significant impact with mitigation.

5. Environmental Analysis

Mitigation Measures

CUL-1 If archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (CEQA Guidelines15064.5[f]). Prehistoric archaeological site indicators include obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and hand stones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

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

Less Than Significant Impact. Construction of the proposed project would require earthwork activities, such as grading. If human remains are discovered during project construction activities, they could be damaged or disturbed, which would be a significant impact. California Health and Safety Code Section 7050.5, CEQA Section 15064.5, and PRC Section 5097.98 mandate procedures in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Specifically, California Health and Safety Code Section 7050.5 requires that if human remains are discovered within the project site, disturbance of the site shall remain halted until the coroner has conducted an investigation into the circumstances, manner, and cause of death, and made recommendations concerning the treatment and disposition of the human remains to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the PRC. If the coroner determines that the remains are not subject to his or her authority and if the coroner has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Although soil-disturbing activities associated with the proposed project could result in the discovery of human remains, compliance with existing law would ensure no significant impacts to human remains. Impacts would be less than significant.

5.6 ENERGY

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

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?

Less Than Significant Impact. The following discusses the potential energy demands from construction activities associated with the construction and operation of the proposed project.

Short-Term Construction Impacts

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

Electrical Energy

The majority of construction equipment would be gas- or diesel-powered, and electricity would not be used to power most of the construction equipment. Electricity use during construction would vary during different phases of construction. Later construction phases could result in the use of electric-powered equipment for interior demising wall construction and architectural coating. It is anticipated that the majority of electric-powered construction equipment would be hand tools (e.g., power drills, table saws) and lighting, which would result in minimal electricity usage during construction activities. Because the consumption of these energy resources would be necessary for the construction and finishing of the proposed project, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be less than significant.

Natural Gas Energy

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

5. Environmental Analysis

Transportation Energy

Transportation energy use during construction of the proposed project would come from delivery vehicles, haul trucks, and construction employee vehicles. In addition, transportation energy demand would come from use of off-road construction equipment. It is anticipated that the majority of off-road construction equipment would be gas or diesel powered.

The use of energy resources by vehicles and equipment would fluctuate according to the construction activity and would be temporary. In addition, fuel use associated with construction vehicles and equipment would be considered necessary for the construction of the proposed project, and all construction equipment would cease operating upon completion of project construction. Thus, impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure. Furthermore, to limit wasteful and unnecessary energy consumption, the construction contractors would be required to minimize nonessential idling of construction equipment during construction, in accordance with Section 2449 of the 13 CCR Article 4.8, Chapter 9.

Construction trips would also not result in unnecessary use of energy since the project site is centrally located and is served by numerous regional freeway systems (e.g., I-80 and SR-12) that provide the most direct routes from various areas of the region. Thus, energy use during construction of the project would not be considered inefficient, wasteful, or unnecessary. Impacts would be less than significant.

Long-Term Impacts During Operation

Operation of the proposed project would generate new demand for electricity, natural gas, and transportation energy on the project site. Operational use of energy would include heating, cooling, and ventilation of the classrooms and the administration and multipurpose building; water heating; operation of electrical systems, use of on-site equipment and appliances; and indoor and outdoor lighting for the new buildings, parking lot, and sports courts.

Electrical Energy

Operation of the proposed project would consume electricity for various purposes, including, but not limited to heating, cooling, and ventilation of buildings as well as operation of electrical systems, lighting, and use of on-site equipment and appliances. The school buildings are designed to be all-electric and would not utilize natural gas during operation of the proposed project. Electrical service to the proposed project would be provided by Pacific Gas and Electric (PG&E) or Marin Clean Energy (MCE) through connections to existing off-site electrical lines and new on-site infrastructure. As shown in Table 3, *Operation-Related Electricity Consumption*, implementation of the proposed project would result in a new electricity demand of 609,452 kilowatt hours (kWh) of electricity use per year from operation of the middle school.

Table 3 Operation-Related Electricity Consumption

Land Use	Electricity (kWh/year)
New Proposed School Buildings	599,290
New Parking Lot	10,162
Electricity Consumption	**609,452**

Source: CalEEMod Version 2022.1. Appendix A.
Note: kWh = kilowatt hour(s)

While the proposed project would result in new electricity demand on the project site, it would be required to comply with the applicable Building Energy Efficiency Standards and CALGreen requirements in effect at the time permit applications are submitted to the Division of the State Architect. Currently, the 2022 Building Energy Efficiency Standards and CALGreen are in effect for new construction. The Building Energy Efficiency Standards are updated every three years and typically result in more stringent energy efficiency requirements when compared to the previous code cycle. As such, the new buildings would be designed to be more energy efficient than those that currently exist on the campus.

In addition to the proposed building energy efficiency, PG&E and MCE are required to comply with the state's renewable portfolios standard (RPS), which mandates utilities to procure a certain proportion of electricity from eligible renewable and carbon-free sources and increasing the proportion through the coming years with an ultimate procurement requirement of 100 percent by 2045. The RPS requirements would support use of electricity by the proposed project that is generated from renewable or carbon-free sources. Overall, the proposed project would generally be consistent with the goals outlined in Appendix F of the CEQA Guidelines regarding increasing energy efficiency, decreasing reliance on fossil fuels, and increasing renewable energy sources.

Compliance with these standards would contribute to minimizing inefficient energy use with the proposed expansion of the middle school. Therefore, operation of the proposed project would not result in wasteful or unnecessary electricity demands and would not result in a significant impact related to electricity.

Natural Gas Energy

The proposed buildings have been designed to be all-electric and, therefore, would not require natural gas usage. There would be no impact with respect to natural gas usage during operation of the proposed project.

Transportation Energy

The proposed project would consume transportation energy during operations from the use of motor vehicles associated with students and staff of the middle school. The efficiency of the motor vehicles in use (average miles per gallon) is unknown and highly variable. Thus, estimates of transportation energy use are based on the overall vehicle miles traveled (VMT) and related transportation energy use. The project-related VMT would primarily come from students and staff. However, while the proposed project would increase the student capacity at Golden West MS by 450 students and would generate an estimated 950 vehicle trips per day, most or all of these vehicle trips would already be traveling on the area's roadway network. The 450 new students would have been attending a school in the District regardless of the status of the proposed project. The site-

5. Environmental Analysis

generated traffic shown in the table does not represent an overall increase in vehicle trips in the area. It instead represents trips that would be re-directed to this school site as opposed to another school in the District. Furthermore, because the proposed project would involve expansion of the existing middle school, it would continue to be a locally serving use.

Fuel efficiency of vehicles after buildout would on average improve compared to vehicle fuel efficiencies experienced under existing conditions, thereby resulting in a lower per capita fuel consumption assuming travel distances, travel modes, and trip rates remain the same. The improvement in fuel efficiency would be attributable to the statewide fuel reduction strategies and regulatory compliances (e.g., corporate average fuel economy [CAFE] standards), resulting in new cars that are more fuel efficient and the attrition of older, less fuel-efficient vehicles. The CAFE standards are not directly applicable to land use development projects, but to car manufacturers. Thus, the students and staff do not have direct control in determining the fuel efficiency of vehicles manufactured and that are made available. However, compliance with the CAFE standards by car manufacturers would ensure that vehicles produced in future years have greater fuel efficiency and would generally result in an overall benefit of reducing fuel usage by providing the population of the project site's region more fuel-efficient vehicle options.

Lastly, as electricity consumed in California is required to meet the increasing renewable energy mix requirements under the State's RPS and accelerated by SB 100, greater and greater proportions of electricity consumed for transportation energy demand envisioned under the proposed project would continue to be sourced from renewable energy sources rather than fossil fuels. Since vehicle fuel efficiencies would improve year over year through the buildout and result in a decrease in overall per capita transportation energy consumption, impacts would be less than significant with respect to operation-related fuel usage.

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

Less Than Significant. The following evaluates consistency of the proposed project with California's Renewables Portfolio Standard program.

California Renewables Portfolio Standard Program

The state's electricity grid is transitioning to renewable energy under California's RPS. Eligible renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. Electricity production from renewable sources is generally considered carbon neutral. Senate Bill (SB) 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Senate Bill 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

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

The statewide RPS goal is not directly applicable to individual development projects, but to utilities and energy providers such as PG&E and MCE, which is the utility that would provide all of electricity needs for the proposed project. Compliance of PG&E and MCE in meeting the RPS goals would ensure the State in meeting its objective in transitioning to renewable energy. In addition, the proposed project would be required to comply with the applicable Building Energy Efficiency Standards and CALGreen requirements. Therefore, implementation of the proposed project would not conflict with or obstruct implementation of California's RPS Program and impacts would be less than significant.

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5.7 GEOLOGY AND SOILS

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

No Impact. Alquist-Priolo earthquake fault zones are regulatory zones surrounding the surface traces of active faults in California.[3] Wherever an active fault exists, if it has the potential for surface rupture, a structure for human occupancy cannot be placed over the fault and must be a minimum distance from the fault (generally 50 feet). An active fault, for the purposes of the Alquist-Priolo Act, is one that has ruptured in the last 11,000 years. Fairfield is located along the eastern edge of the seismically active Coast Ranges of

[3] A trace is a line on the earth's surface defining a fault.

California. The Bay Area contains numerous near-parallel active faults. Active faults within the Bay Area include the Green Valley and Cordelia faults near Fairfield. Most large earthquakes in the Bay Area have occurred along the major faults, including the San Andreas, Hayward, and Calaveras faults, which are 20 to 45 miles west and south of Fairfield. The Cordelia and Green Valley faults are active faults within the city limits (DOC 2024b). However, both faults are on the western side of the city and are approximately 10 miles west of the project site. Therefore, there would be no impact associated with rupture of a known earthquake fault.

ii) Strong seismic ground shaking?

Less Than Significant Impact. The Bay Area is a seismically active region. Impacts from ground shaking could occur many miles from an earthquake epicenter. The potential severity of ground shaking depends on many factors, including the distance from the originating fault, the earthquake magnitude, and the nature of the earth materials beneath a given site. The Bay Area is a seismically active area, and shaking from nearby faults could result in significant damage. The nearest active faults are the Cordelia and Green Valley faults, approximately 10 miles west of the project site. The proposed buildings and structures would be required to comply with the geotechnical and seismic design requirements of the most recent version of the California Building Code (CBC) (CCR Title 24), which requires structural design that can accommodate ground accelerations expected from known active faults. Compliance with established standards would reduce the risk of structural collapse or other shaking-related hazards. Therefore, implementation of the proposed project would result in less-than-significant impacts associated with strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

No Impact. Liquefaction refers to loose, saturated sand or gravel deposits that lose their load-supporting capability when subjected to intense shaking. According to the California Department of Conservation Data Viewer map for liquefaction zones, the project site is not susceptible to liquefaction (DOC 2022a). Furthermore, the proposed project would be designed in compliance with seismic requirements of the CBC and the Division of the State Architect (DSA) criteria for seismic safety, including from liquefaction impacts. Therefore, no impacts associated with liquefaction would occur.

iv) Landslides?

No Impact. Landslides are a type of erosion in which masses of earth and rock move downslope as a single unit. Susceptibility of slopes to landslides and lurching (earth movement at right angles to a cliff or steep slope during ground shaking) depend on several factors that are usually present in combination—steep slopes, condition of rock and soil materials, presence of water, formational contacts, geologic shear zones, and seismic activity. The Golden West MS campus and adjacent properties are generally flat. The project site is not within a landslide zone, and there has not been a reported landslide in the city of Fairfield (DOC 2024c). The proposed project would not result in significant safety impacts due to landslides. No impact would occur.

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

Less Than Significant Impact. Erosion is a normal and inevitable geologic process whereby earthen materials are loosened, worn away, decomposed, or dissolved and removed from one place and transported to another. The project site is developed with buildings, walkways, landscaping, and play areas. Project-related construction activities would expose soil through excavation, grading, and trenching, and thus could cause erosion during heavy winds or rainstorms. Construction projects of one acre or more are regulated under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) issued by the State Water Resources Control Board (SWRCB). The District would obtain coverage by preparing and implementing a Stormwater Pollution Prevention Plan (SWPPP), estimating sediment risk from construction activities to receiving waters, and specifying best management practices that would be incorporated into the construction plan to minimize stormwater pollution. Categories of BMPs used in SWPPPs are described in Table 4, *Construction BMPs*. The proposed project would be subject to the Statewide Construction General Permit (CGP) and implementation of BMPs specified in the SWPPP. Construction-phase soil erosion impacts would be less than significant.

Table 4 Construction BMPs

Category	Purpose	Examples
Erosion Controls and Wind Erosion Controls	Cover and/or bind soil surface, to prevent soil particles from being detached and transported by water or wind.	Mulch, geotextiles, mats, hydroseeding, earth dikes, swales.
Sediment Controls	Filter out soil particles that have been detached and transported in water.	Barriers such as straw bales, sandbags, fiber rolls, and gravel bag berms; desilting basin; cleaning measures such as street sweeping.
Tracking Controls	Minimize the tracking of soil off-site by vehicles.	Stabilized construction roadways and construction entrances/exits; entrance/outlet tire wash.
Non-storm Water Management Controls	Prohibit discharge of materials other than stormwater, such as discharges from the cleaning, maintenance, and fueling of vehicles and equipment. Conduct various construction operations, including paving, grinding, and concrete curing and finishing, in ways that minimize non-stormwater discharges and contamination of any such discharges.	BMPs specifying methods for: paving and grinding operations; cleaning, fueling, and maintenance of vehicles and equipment; concrete curing; concrete finishing.
Waste Management and Controls (i.e., good housekeeping practices)	Management of materials and wastes to avoid contamination of stormwater.	Spill prevention and control, stockpile management, and management of solid wastes and hazardous wastes.

Source: California Stormwater Quality Association (CASQA), California Construction Best Management Practices Handbook, January 2015.

After completion of the project, ground surfaces on campus would be either hardscape or maintained landscaping, and no large areas of exposed soil would be left to erode. The proposed project would stockpile the existing dirt on campus onto a District-owned parcel 300 feet north of the campus and BMPs related to erosion control would be installed to reduce these potential impacts to less than significant. The new buildings, other campus improvements, and dirt stockpile would not cause an increase in erosion of soils off-campus. Operational phase soil erosion impacts would be less than significant.

5. Environmental Analysis

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?

Less Than Significant Impact. As discussed in Sections 5.7.a.iii and 5.7.a.iv, no impacts are anticipated as a result of liquefaction and landslides.

Lateral spreading is a phenomenon where large blocks of intact, non-liquefied soil move downslope on a large, liquefied substratum. The mass moves toward an unconfined area, such as a descending slope or stream-cut bluff, and has been known to move on slope gradients as little as one degree. The topography of the project site is generally flat.

Subsidence and collapse are generally due to substantial overdraft of groundwater or underground petroleum reserves. Collapsible soils may appear strong and stable in their natural (dry) state, but they rapidly consolidate under wetting, generating large and often unexpected settlements. Seismically induced settlement consists of dynamic settlement of unsaturated soil (above groundwater) and liquefaction-induced settlement (below groundwater). These settlements occur primarily in low-density sandy soil due to the reduction in volume during and shortly after an earthquake. The project site is not mapped within areas of recorded subsidence due to groundwater pumping, peat loss, or oil extraction (USGS 2024). The proposed project would be constructed in compliance with the applicable CBC and DSA requirements. Impacts related to subsidence and collapsible soil would be less than significant.

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. Highly expansive soils swell when they absorb and shrink as they dry and can cause structural damage to building foundations. However, since the site is a school site, DSA will ensure that the buildings are sufficiently designed for the condition. The proposed project would be constructed in compliance with the applicable CBC requirements. Therefore, potential impacts related to subsidence and collapsible soil would be less than significant.

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

No Impact. The proposed project would not use any septic tanks or alternative wastewater disposal system. The proposed project would connect to the existing sanitary sewer system for wastewater disposal. No impact would occur.

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

Less Than Significant Impact with Mitigation Incorporated. The Northern California Coast Range in Solano County, known as the Vaca Mountains, consists of Cretaceous and Tertiary strata that has been uplifted and tilted eastward. A large plain, predominantly Quaternary, lies to the east of the Vaca Mountains. In the southwestern portion of the county, Pliocene and late Miocene volcanic deposits are commonly found. The Pleistocene Montezuma Hills lie just north of the confluence of the Sacramento and San Joaquin Rivers where they drain to Suisun Bay. Suisun and Montezuma Sloughs mark a large tidal wetland that enters Grizzly Bay along the southern border of the county. Ground-disturbing activities in deeper native sediments (older Quaternary deposits) could unearth unique paleontological resources. Therefore, development of the proposed project has the potential to result in a significant impact. Mitigation measures GEO-1 would require appropriate treatment of unearthed paleontological resources during construction. Potential impacts to unknown paleontological resources would be mitigated to less than significant through the implementation of Mitigation Measures GEO-1.

Mitigation Measures

GEO-1 In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards, evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The excavation plan shall be submitted to the Travis Unified School District for review and approval prior to implementation. Any fossils recovered during mitigation shall be offered to an accredited and permanent scientific institution or other educational institutions for the benefit of current and future generations.

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5.8 GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), into the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[4]

Information on manufacture of cement, steel, and other "life cycle" emissions that would occur as a result of the project are not applicable and are not included in the analysis.[5] Black carbon emissions are not included in the GHG analysis because the California Air Resources Board (CARB) does not include this short-lived climate pollutant in the State's SB 32 and Assembly Bill 1279 (AB 1279) inventory but treats it separately.[6] A background discussion on the GHG regulatory setting and GHG modeling can be found in Appendix A to this Initial Study.

Would the project:

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

[4] Water vapor (H2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

[5] Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (CNRA 2018). Because the amount of materials consumed during the operation or construction of the proposed project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

[6] Particulate matter emissions, which include black carbon, are analyzed in Section 3.3, Air Quality. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The state's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years (CARB 2017).

5. Environmental Analysis

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

Less Than Significant Impact with Mitigation Incorporated. A project does not generate enough GHG emissions on its own to influence global climate change; therefore, this section measures the project's contribution to the cumulative environmental impact associated with GHG emissions. For projects where there is no applicable GHG reduction plan, cumulative GHG emissions impacts are based on the state's GHG reduction goals for development projects identified in the BAAQMD 2022 CEQA Guidelines (BAAQMD 2023).

Development of the proposed project would contribute to climate change through direct and indirect emissions of GHG from the construction activities needed to implement the project, which would generate a short-term increase in GHG emissions, as well as a long-term increase in GHG emissions from on-road mobile sources, energy use, area sources, water use/wastewater generation, and solid waste disposal. As identified in the BAAQMD 2022 CEQA Guidelines, short-term construction activities are one-time emissions that would not substantially contribute to GHG emissions impacts. While BAAQMD does not have an adopted significance threshold for construction emissions, BAAQMD recommends that construction GHG emissions are quantified and disclosed. As such, Table 5, *Construction GHG Emissions*, provides the construction-related GHG emissions associated with implementation of the proposed project.

Table 5 Construction GHG Emissions

Source	GHG Emissions ($MTCO_2e$/Year)
2025	267
2026	201

Source: CalEEMod, Version 2022.1.
Notes: $MTCO_2e$: metric ton of carbon dioxide equivalent.

For operational phase impacts, BAAQMD identified in their 2022 CEQA Guidelines that projects that implement the BMPs shown in Table 6, *Consistency Analysis with BAAQMD's GHG Best Management Practices*, would contribute their fair of what is required to achieve the state's long-term climate goals. The proposed project is consistent with the land uses covered under the BAAQMD 2022 CEQA Guidelines; therefore, if the project implements the BMPs identified by BAAQMD, GHG emissions impacts would be considered less than significant. As shown in Table 6, the proposed project is consistent with BAAQMD's GHG Best Management Practices with the exception of compliance with the Tier 2 CALGreen standards for Electric Vehicle (EV) charging spaces. However, with implementation of Mitigation Measures GHG-1, which would require compliance with the Tier 2 CALGreen EV charging parking space requirements, GHG impacts would be reduced. Impacts would be less than significant with mitigation incorporated.

Table 6 Consistency Analysis with BAAQMD's GHG Best Management Practices

Sector	Consistency Analysis
Buildings	
a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).	**Consistent.** The proposed buildings would be designed to be all-electric and would not require natural gas usage for operation of appliances and plumbing. As a result, the proposed project would not have the potential to conflict with this BMP.
b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.	**Consistent.** The proposed buildings would be built to comply with the most current CALGreen Building Code requirements and building efficiency standards to reduce unnecessary energy consumption.
Transportation	
a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.	**Not Consistent.** The proposed project is not currently designed to meet the current Nonresidential Tier 2 EV charging standards for the proposed parking spaces. Therefore, Mitigation Measure GHG-1 would be required to ensure the proposed project meets the applicable Tier 2 CALGreen EV charging standards in effect at the time permit applications are submitted to the Division of the State Architect. Incorporation of Mitigation Measure GHG-1 would ensure project consistency with this BMP.
b. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:	**Consistent**. As discussed in Section 3.17, Transportation, although the proposed project would generate an estimated 950 vehicle trips per day, most or all of these vehicle trips would already be traveling on the area's roadway network because the 450 new students that would be attending Golden West Middle School would have been attending a school in the District regardless of the status of the proposed project. The 950 vehicle trips represent trips would be reallocated to this school site as opposed to another school in the District and there would be little or no increase in vehicle miles traveled associated with the project. As such, there would be little or no net increase in VMT per capita as it is a locally serving land use. The proposed project would be consistent with this BMP.

Source: CalEEMod, Version 2022.1.
Notes: $MTCO_2e$: metric ton of carbon dioxide equivalent.

Mitigation Measures

GHG-1 Prior to the issuance of grading permits, site plans submitted to the Division of the State Architect shall comply with the California Green Building Standards Code (CALGreen) voluntary Tier 2 non-residential provisions for electric vehicle (EV) charging stations.

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

Less than Significant Impact. Applicable plans adopted for the purpose of reducing GHG emissions include CARB Scoping Plan and *Plan Bay Area* 2050. A consistency analysis with these plans is presented below.

5. Environmental Analysis

CARB Scoping Plan

CARB's latest Climate Change Scoping Plan (2022) outlines the State's strategies to reduce GHG emissions in accordance with the targets established under AB 32, SB 32, and AB 1279 (CARB 2022). The Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA significance criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions in the 2022 Climate Change Scoping Plan include: implementing SB 100, which expands the RPS to 60 percent by 2030; expanding the Low Carbon Fuel Standards (LCFS) to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Statewide strategies to reduce GHG emissions include the low carbon fuel standards, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the CAFE standards, and other early action measures as necessary to ensure the State is on target to achieve the GHG emissions reduction goals of AB 32, SB 32, and AB 1279. In addition, new developments are required to comply with the current Building Energy Efficiency Standards and CALGreen. The proposed project would comply with these GHG emissions reduction measures since they are statewide strategies. The proposed project GHG emissions would be further reduced from compliance with statewide measures that have been adopted since AB 32, SB 32, and AB 1279 were adopted. Therefore, the proposed project would not obstruct implementation of the 2022 Scoping Plan, and impacts would be less than significant.

Plan Bay Area

Plan Bay Area 2050, the Bay Area's Regional Transportation Plan/Sustainable Community Strategy that identifies the sustainable vision for the Bay Area. To achieve MTC's/ABAG's sustainable vision for the Bay Area, the Plan Bay Area 2050 land use concept plan for the region concentrates the majority of new population and employment growth in the region in Priority Development Areas (PDA). PDAs are transit-oriented, infill development opportunity areas within existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions. Accordingly, the proposed project is an expansion of the existing Golden West MS, which would continue to be a locally serving use and would not conflict with Plan Bay Area (see Section 5.17, *Transportation*). Therefore, the proposed project would not conflict with the land use concept plan identified in Plan Bay Area 2050, and the impact would be less than significant.

5.9 HAZARDS AND HAZARDOUS MATERIALS

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (Health and Safety Code Section 25501(o)). The term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

Hazardous wastes are hazardous substances that no longer have a practical use, such as materials that have been spent, discarded, discharged, spilled, contaminated, or are being stored until they can be disposed of properly (22 CCR Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific criteria in CCR Title 22.

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

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.

Construction

Construction of the proposed project would include the use of materials such as fuels, lubricants, and greases in construction equipment and coatings used in construction. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. The handling, use, transport, and disposal of hazardous materials by the construction phase of the project would comply with existing regulations of several agencies—the EPA, California Division of Occupational Safety and Health, US Occupational Safety and Health Administration, and US Department of Transportation. These activities would also be short term or one time in nature and would cease upon completion of the construction phase. Project construction workers would also be trained in safe handling and hazardous materials use.

Demolition and Construction Activities

The District would be responsible for ensuring the safe removal of potential asbestos containing building materials and lead that may be encountered during the demolition of the existing administrative building during Phase 2. Golden West MS was opened in 1980, and asbestos has the potential to be present on campus (CDCA 2013). The District would ensure that all construction related activities are completed in accordance with all applicable federal, state, and local regulations, including, but not limited, to the EPA's "Guidance on Conducting Non-Time-Critical Removal Actions Under Comprehensive Environmental Response, Compensation, and Liability Act; National Oil and Hazardous Substances Pollution Contingency Plan" and all applicable District specifications and standards.

Hazardous materials are regulated by several agencies, including the EPA, the California Department of Toxic Substances Control, California Division of Occupational Safety and Health, Solano County Department of Resource Management, Environmental Health Services, and the Fairfield Fire Department. The requirements of these agencies would be incorporated into the design and operation of the project. These requirements would include providing for and maintaining appropriate storage areas for hazardous materials and installing or affixing appropriate warning signs and labels. By complying with the applicable federal, state, and local regulations, hazards to the public, the students, or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant.

Operation

Project operation would involve the use of the same chemicals currently used on campus, such as cleansers, pesticides, paints, and those used in laboratory classes as part of the science curriculum and following all applicable laws and regulations regarding use and storage. Use of hazardous materials during project operation would comply with the same regulations that would pertain to use of such materials during project construction. Project construction and operation would not cause significant hazards to the public or the environment through routine use of hazardous materials, and impacts would be less than significant

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

Less Than Significant Impact. The use, handling, storage, and disposal of hazardous materials in the course of project construction and operation would not pose a substantial hazard to the public or the environment from reasonably foreseeable accidental release. Hazardous materials would include standard cleaning and maintenance chemicals such as cleansers, pesticides, paints, and those used in laboratory classes as part of the science curriculum. Compliance with the previously discussed regulations is already standard practice at the school, including training school staff to safely contain and clean up hazardous materials spills; maintaining on-site the spill containment and cleanup supplies for hazardous materials; implementing school evacuation procedures as needed; and contacting the appropriate hazardous materials emergency response agency immediately pursuant to requirements of regulatory agencies. Therefore, the project would not exacerbate or create new safety hazards. Impacts from reasonably foreseeable upset and accident conditions would be less than significant.

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

Less Than Significant Impact. The use, handling, storage, and disposal of hazardous materials in the course of project construction and operation would not pose a substantial hazard to the public or the environment from reasonably foreseeable accidental release. The chemicals that are present on campus include standard cleaning and maintenance chemicals such as cleansers, pesticides, paints, and those used in laboratory classes as part of the science curriculum. The proposed project would install classrooms, a teacher workroom, restrooms, and an administrative/multiuse building. Standard cleaning and maintenance chemicals would be used to clean these new buildings and chemicals for laboratory classes may be part of the curriculum for the incoming 6th graders. However, quantities of these chemicals would be small and would not be in big enough quantities to pose a hazard. This would include not being a hazard to Vanden High School and the Travis Education Center, which are the only schools within one-quarter mile of the project site. Additionally, compliance with the previously discussed regulations is already standard practice at the school, including training school staff to safely contain and clean up hazardous materials spills; maintenance of hazardous materials spill containment and cleanup supplies on-site; implementing school evacuation procedures as needed; and contacting Solano County Department of Resource Management, Environmental Health Services, and the City fire department immediately pursuant to requirements of regulatory agencies. Impacts from reasonably foreseeable upset and accident conditions would be less than significant.

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. California Government Code Section 65962.5 requires the California Environmental Protection Agency to compile a list (updated at least annually) of hazardous waste and substances release sites, known as the Cortese List or California Superfund. Section 65962.5 requires compiling lists of the following types of hazardous materials sites: hazardous waste facilities; hazardous waste discharges

5. Environmental Analysis

for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated. Seven environmental lists were searched for hazardous materials sites on the project site and findings are listed in Table 7.

- GeoTracker. State Water Resources Control Board (SWRCB 2024)
- EnviroStor. Department of Toxic Substances Control (DTSC 2022).
- EJScreen. US Environmental Protection Agency (USEPA 2022a).
- EnviroMapper. US Environmental Protection Agency (USEPA 2022b).
- Cortese List: California Department of Toxic Substances Control (DTSC 2024)
- Solid Waste Information System (SWIS): California Department of Resources Recovery and Recycling (CalRecycle 2024a)
- CalEPA Regulated Site Portal. California Environmental Protection Agency (CalEPA 2024).

Table 7 Hazardous Waste Sites Within 0.25 Mile

Site Address	Database	Identifier	Cleanup Status	Proximity to Site
Travis Unified School District 2751 De Ronde Road Fairfield, CA (T0609500195)	GeoTracker	LUST Cleanup Site (T0609500195)	Completed – Case Closed (July 2000)	750 feet North
Golden West Middle School 2651 De Ronde Drive Fairfield, CA (10864282)	CalEPA	Chemical Storage Facilities/Hazardous Waste Generator	Active	Onsite
Travis USD – Transportation Yard 2751 De Ronde Drive Fairfield, CA (10401856)	CalEPA	Aboveground Petroleum Storage/Chemical Storage Facilities/Hazardous Waste Generator	Active	750 feet North
Travis Unified School District 2751 De Ronde Drive Fairfield, CA (T0609500195)	CalEPA	Leaking Underground Storage Tank Cleanup Site	Inactive (expired: 7/13/2000)	750 feet North
Verizon Wireless (Travis Air Force Base) 2851 Dobe Lane Fairfield, CA (110054240656)	CalEPA	US EPA Air Emissions Inventory System (EIS)	Active	780 feet Southeast
Version Wireless Travis Air Force Base 2851 Dobe Lane Fairfield, CA (10145531)	CalEPA	Chemical Storage Facility	Active	780 feet Southeast

Source: SWRCB 2024; CalEPA 2024.

The campus is listed as a chemical storage facility and hazardous waste generator under the CalEPA Regulated Site Portal. Specifically, Golden West MS stores Oxygen (nonflammable gas) and Acetylene (flammable gas) on campus. The chemical storage on campus is regulated by the Solano County Environmental Health Department and the status of the storage was submitted on February 9, 2024. There have been no violations regarding the storage of these chemicals (CalEPA 2024). As such, the storage of chemicals on site is in compliance with the applicable regulations and does not pose a threat to the public or the environment and impacts would be less than significant.

The District's office and transportation yard are located at 2751 De Ronde Drive, approximately 750 north of the Golden West MS campus. GeoTracker identified the site as a LUST Cleanup Site for the leaking of gasoline tank into the groundwater (SWRCB 2024). The site was cleaned up and the case was closed on July 13, 2000. CalEPA also identified the site as containing aboveground petroleum storage, as a chemical storage facility, and as a hazardous waste generator. The site has had 19 violations, with 17 of the violations being resolved and 2 as open. Both violations occurred on June 6, 2022. One violation is for an unsigned manifest, and the second violation is for a pressurized oil system leaking into the oil storage area. Because of the distance from the project site (approximately 750 feet north), impacts would be less than significant.

CalEPA also identified 2851 Dobe Lane as a chemical storage facility and a source for air pollution (US EPA Air Emissions Inventory System [EIS]). The chemical storage is for electrolyte/sulfuric acid and diesel fuel no. 2. The site has had five evaluations since 2013 and has never been cited for a violation (CalEPA 2024). Regarding the site being a source for air pollution, according to EJScreen, the project site is in the "less than 50 percentile" for all air pollution categories (USEPA 2022a). Because the distance from this site to the project site, the compliance with local regulations regarding chemical storage, and the project site's "less than 50 percentile" designation for all air pollution categories, impacts would be less than significant.

Therefore, the project would not create a hazard to the public because of a hazardous materials site pursuant to Government Code Section 65962.5, and impacts would be less than significant.

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

No Impact. The nearest public airport is Nut Tree Airport, approximately 10 miles north of the campus. Travis Air Force Base is approximately 2 miles east of the project site. According to the Solano County General Plan Land Use Element, the project site is within the Airport Influence Area for Travis Air Force Base (Solano County 2008). Additionally, the project site is in Zone D of the Airport Influence Area for Travis Air Force Base. Zone D restricts development that is hazardous to flight and regulates commercial solar, wind turbines, and objects more than 200 feet in height (Solano County ALUC 2023). The new classroom buildings, teacher workroom, restrooms, and the replacement administrative/multiuse buildings would be consistent with the buildings on the school campus and would not exceed 200 feet in height. Additionally, the project is not proposing any solar or wind development. Therefore, no impact would occur.

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

Less Than Significant Impact. Golden West MS and District owned parcel are in an urbanized area of the City and are not in a very high fire hazard severity zone (FHSZ) (CAL FIRE 2024). The project would include the construction new school facilities and infrastructure to accommodate additional incoming students and the stockpiling of excess dirt onto a District-owned parcel. According to the City's Emergency Operations Plan (EOP), the City's primary Emergency Operations Center (EOC) is at 1200 Kentucky Street and the alternate EOC is at 530 Clay Street. The EOCs operate as the command-and-control center for the City during emergencies. The project site is approximately six miles east of the primary and alternate EOCs. Additionally, the EOP does not specifically state any evacuation routes, which are developed in coordination with the City, County Sheriff's Department, and the Highway Patrol; the responsible agencies would be allowed to comment on any potential impacts to the EOP (City of Fairfield 2022). Therefore, the project would not impair an adopted emergency response plan or emergency evacuation plan and impacts 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. Golden West MS is not in or near a very high FHSZ on the California Department of Forestry and Fire Protection's FHSZ map (CAL FIRE 2024). The proposed project would not change the existing school boundaries to place the campus or students any closer to wildland fires. Impacts would be less than significant.

5.10 HYDROLOGY AND WATER QUALITY

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

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

Less Than Significant Impact. A significant impact would occur if the project discharges water that does not meet the quality standards of agencies that regulate surface water quality and discharges into the stormwater drainage system. During construction, water quality impacts could occur from discharge of soil through erosion, sediments, and other pollutants. The SWRCB's National Pollutants Discharge Elimination System program regulates industrial pollutant discharges, including construction activities for sites larger than one acre. The proposed project includes approximately 5.7-acres of ground disturbance.

New construction projects can result in two types of water quality impacts: (1) short-term impacts from discharge of soil through erosion, sediments, and other pollutants during construction and (2) long-term impacts from impervious surfaces (buildings, roads, parking lots, and walkways) that prevent water from being absorbed into the ground, thereby increasing the pollutants in stormwater runoff. Impervious surfaces can increase the concentration of pollutants in stormwater runoff, such as oil, fertilizers, pesticides, trash, soil, and animal waste. Runoff from short-term construction and long-term operation can flow directly into lakes, local streams, channels, and storm drains and eventually be released untreated into the ocean.

The project would be constructed in an area that is already developed and already producing nonpoint-source pollutants.[7] The campus improvements would not impact groundwater quality.

Construction Phase

Clearing, grading, excavation, and construction activities associated with the proposed project may impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction may result in oil, grease, or related pollutant leaks and spills that may discharge into the storm drain system.

The proposed project would be required to comply with all applicable regulatory requirements governing water quality. The proposed project would be required to comply with comply with the National Pollutant Discharge Elimination System CGP (2022-0057-DWQ). The CGP requires the preparation of a SWPPP that incorporates BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The SWRCB mandates that projects that disturb one or more acres of land must obtain coverage under the Statewide CGP. Prior to the start of construction activities, the project applicant must file permit registration documents (PRD) with the SWRCB, which includes a Notice of Intent, risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. The construction contractor is required to maintain a copy of the SWPPP on-site at all times and implement all construction BMPs identified in the SWPPP during construction activities. Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the PRDs with the SWRCB, which include preparation of SWPPP.

The SWPP must describe construction BMPs that address pollutant source reduction and provide measures/ controls to mitigate potential pollutant sources. Which include, but are not limited to: erosion controls, sediment controls, tracking controls, non-storm water management, materials and waste management and good housekeeping practices. Submittal of the PRDs and implementation of the SWPPP and its associated BMPs throughout the construction phase would result in an impact of less than significant.

Operation Phase

After completion of the project, ground surfaces at the project site would be developed with educational buildings, hardscape, and athletic courts; the District-owned parcel shall include the remaining dirt stockpile. Although the project area on campus will no longer contain exposed soil left to erode off the campus, the District-owned parcel will exhibit runoff similar to existing conditions on campus. However, the off-site

7 **Point source pollution**: The EPA defines point-source pollution as any single identifiable source of pollution from which pollutants are discharged, such as a pipe, ditch, ship or factory smokestack. Factories and sewage treatment plants are two common types of point sources.
Nonpoint-source pollution is caused by broadly distributed and disconnected sources of pollution, such as rain and snowmelt runoff, spills, leaks, and sediment erosion.

District-owned parcel would be graded to allow for drainage and BMPs installed for sediment and erosion control.

As discussed in Threshold 5.9(b), above, the proposed project would be required to comply with applicable federal and State law and regulations governing the use, storage, transport, and disposal of hazardous materials, which would ensure impacts would be less than significant.

Additionally, the proposed project would implement BMPs to control the amount and quality of the stormwater leaving the project site, and the proposed project would not violate any water quality. Thus, impacts would be less than significant.

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. Groundwater hydrology impacts may occur from extracting groundwater from water supply needs, increasing or decreasing groundwater recharge, intercepting, and removing groundwater from cuts or excavations, or remediation of contaminated groundwater. The campus and District-owned parcel are located within the Suisun-Fairfield Valley Groundwater Basin (DWR 2018). The project site is partially developed and contains impervious and pervious surfaces. The project site on campus contains an existing pervious dirt stockpile area and impervious campus athletic hardcourts and educational buildings; and the project site on the District-owned parcel contains a pervious undeveloped sedimentary area. Runoff from the proposed project would go directly into the ground or to the storm drains on campus or along De Ronde Drive.

The proposed project would result in a slight increase in impervious surfaces (approximately 2 acres) compared to existing conditions with the construction of a new staff parking lot, four basketball courts, and six tennis courts. The District-owned parcel would remain undeveloped and not result in an increase in impervious surfaces. The increase in impervious surfaces due to the proposed project would be minor, as the project site is not used for groundwater recharge activities nor extraction. Therefore, the proposed project would not substantially interfere with rainwater percolating into the groundwater.

The City of Fairfield's Fairfield Municipal Utilities (FMU) department supplies water to the campus and the surrounding community (Fairfield 2024b). FMU receives its water from the Solano Project, the State Water Project, and settlement water from the Department of Water Resources; and the City does not use groundwater as a supply for water (City of Fairfield 2021). The project does not include new groundwater wells that would extract groundwater from the aquifer. Construction and operation of the school improvements would not lower the groundwater table or deplete groundwater supplies. Furthermore, the 13.88-acre school and the 2-acre District-owned parcel do not provide intentional groundwater recharge. Therefore, the project would not interfere with groundwater recharge. Impacts would be less than significant.

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

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

Less Than Significant Impact. Erosion is a normal and inevitable geologic process whereby earthen materials are loosened, worn away, decomposed or dissolved, and moved from one place to another. Precipitation, running water, waves, and wind are all agents of erosion. Ordinarily, erosion proceeds imperceptibly, but when the natural equilibrium of the environment is changed, the rate of erosion can greatly accelerate. This can create aesthetic as well as engineering problems on undeveloped sites. Accelerated erosion in an urban area can cause damage by undermining structures; blocking storm drains; and depositing silt, sand, or mud on roads and in tunnels. Eroded materials can eventually be deposited in local waters, where the carried silt remains suspended in the water for some time, constituting a pollutant and altering the normal balance of plant and animal life.

There are no streams or rivers on the project site. The proposed project would not involve the alteration of any natural drainage channels or any watercourse. As discussed above, the project site is partially developed and contains impervious and pervious surfaces. The project site on campus contains an existing pervious dirt stockpile area and impervious campus athletic hardcourts and educational buildings; the project site on the District-owned parcel contains pervious undeveloped area.

The proposed project would only result in a minor increase of impervious surfaces on the project site that would result in an increase in runoff or erosion on- or off-site; the use of the off-site District-owned parcel as a soil stockpile area may result in an increase in erosion. If not controlled, the transport of these materials to local waterways would temporarily increase suspended sediment concentrations and release pollutants attached to sediment particles into local waterways

As discussed in Section 5.10(a), the proposed project would be required to submit PRDs and a SWPPP to the SWRCB for approval prior to the commencement of construction activities. The SWPPP would describe the BMPs to reduce the impact of erosion and siltation to less than significant. Specifically, the District-owned parcel would be graded to allow for drainage and BMPs installed for sediment and erosion control. Therefore, the proposed project would not result in a substantial erosion or siltation on- or off-site with compliance with SWRCB polices and implementation BMPs, and impacts would be less than significant.

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

Less Than Significant Impact. The project site is primarily built out with hardscape, athletic hardcourts, and educational buildings; it includes a 2-acre undeveloped area. Furthermore, the proposed project would not involve the alteration of any natural drainage or watercourse. As discussed above, the proposed project would only result in a minor increase of impervious surfaces on the project site, and the majority of the project site would remain in its current state. The District-owned parcel would remain in a similar state as an undeveloped area; however, to accommodate the proposed soil stockpile, the parcel would be graded to allow for drainage and BMPs installed for sediment and erosion control. Compliance with SWRCB polices and implementation BMPs will ensure the District-owned parcel would not substantially increase the rate or amount of surface runoff.

Thus, the amount of stormwater runoff reaching the City's storm drain system would be similar to existing conditions. The proposed project would not substantially increase the rate or amount of surface runoff in a manner that would cause flooding on- or off-site. Therefore, impacts related to stormwater drainage and flooding would be less than significant.

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?

Less Than Significant Impact. The project site is partially developed with hardscape, athletic hardcourts and educational buildings; and undeveloped areas including the existing on-campus soil stockpile area and the 2-acre undeveloped area.

The proposed project would not involve the alteration of any natural drainage or watercourse. The proposed project would only result in a minor increase of impervious surfaces on the project site, and the majority of the project site would remain in its current state.

Therefore, the proposed project would generate stormwater similar to existing conidiations. Stormwater that does not percolate into the ground would be directed to storm drains on the Golden West MS campus and to surrounding storm drains in the public right-of-way. As discussed in Threshold 5.10(a), the proposed project would be required to implement BMPs that would control the amount of stormwater leaving the project site. Specifically, the District-owned parcel would be graded to allow for drainage and BMPs, which would ensure runoff would leave the project site at a rate similar to existing conditions. The small quantities of hazardous materials used on-site would be properly handled, stored, and used. The proposed project would not exceed the capacity of existing stormwater drainage systems and would not create substantial additional sources of polluted runoff. Therefore, impacts would be less than significant.

iv) Impede or redirect flood flows?

Less Than Significant Impact. The project site is not within a Federal Emergency Management Agency (FEMA) 100-year flood hazard zone (FEMA 2024). The campus is within Flood Zone X, defined as an area outside the 0.2 percent annual chance floodplain, outside the 100-year and 500-year flood zones. The California Department of Water Resources' Dam Breach Inundation Map shows that the campus is not within any inundation area (DWR 2024a). As discussed in 5.10(c)(ii), the proposed project would not substantially increase the overall quantity of impervious areas or runoff speed, and any impacts to flooding would be negligible. The proposed project would not increase the flooding hazard at the school. The project would not impede or redirect flood flows. Impacts would be less than significant.

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

No Impact. A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. The campus is 45 miles inland from the Pacific Ocean and is outside of the tsunami hazard zone identified by the California Department of Conservation's California Tsunami Maps (DOC 2024d). Therefore, the proposed project would not risk release of pollutants due to tsunamis.

A seiche is a surface wave created when a body of water is shaken, usually by earthquake activity. Seiches are of concern relative to water storage facilities because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. As discussed in Section 5.10(iv), the campus in not within a FEMA 100-year flood hazard zone or within a dam inundation area (FEMA 2024, DWR 2024a).

While the proposed project is expected to use small amounts of hazardous materials during construction and operation (paints, cleaners, oils, etc.), the construction and operation of the proposed project would be required to comply with applicable regulations for proper handling, usage, and storage of potentially hazardous materials (see Section 5.9, *Hazards and Hazardous Materials*). Therefore, the proposed project would not release pollutants due to project inundation. The proposed project would not increase the risk of releasing pollutants due to project inundation. No impact would occur.

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

Less Than Significant Impact. The California Regional Water Quality Control Board San Francisco Bay Region (Region 2)prepares and maintains the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) and designates beneficial uses for surface water bodies and groundwater within the area. The Basin Plan also contains water quality criteria for groundwater. The proposed project would not conflict or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. Project construction would be subject to the Statewide CGP and implementation of BMPs specified in the SWPPP. This would minimize the potential for erosion or siltation impacts that impact receiving waters. Therefore, the proposed project would comply with the Basin Plan.

The Suisun-Fairfield Valley groundwater basin is categorized as low priority by the California Department of Water Resources (DWR 2024b). Additionally, as discussed in Threshold 5.10(b), FMU does not utilize groundwater supplies to service the proposed project nor the City of Fairfield. As substantiated in Thresholds 5.10 (a) and (b), the proposed project would not violate any water quality standards. After completion of the project, ground surfaces would be either hardscape, maintained landscape, or an undeveloped area, similar to the existing conditions of the District-owned parcel. Additionally, the project would not affect groundwater and would not obstruct implementation of a sustainable groundwater management plan. Therefore, impacts would be less than significant.

5.11 LAND USE AND PLANNING

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

a) Physically divide an established community?

No Impact. The proposed project would occur within the boundaries of an existing middle school and the District-owned property located 300 feet north of the campus. No community would be physically divided, and no impact would occur.

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

No Impact. The proposed project would occur on the Golden West MS campus and District-owned parcel, and no land use changes are being proposed. The General Plan land use designation for the campus is PF (Public Facilities/Institutional), which is intended for public facilities including schools (City of Fairfield 2024a). Land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect cover topics such as biological resources, cultural resources, air quality, etc. The proposed project does not represent a change in land use and would not conflict with existing plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental effects. The construction of classrooms, a teacher work room, restrooms, a staff parking lot, basketball and tennis courts, a administrative/multiuse building, and the stockpiling of dirt on the District-owned parcel would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

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5.12 MINERAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

No Impact. In 1975, the State legislature adopted the Surface Mining and Reclamation Act (SMARA). This designated Mineral Resources Zones that were of statewide or regional importance. The classifications used to define MRZs are:

- **MRZ-1.** Areas where the available geologic information indicates no significant mineral deposits or a minimal likelihood of significant mineral deposits.
- **MRZ-2.** Areas where the available geologic information indicates that there are significant mineral deposits or that there is a likelihood of significant mineral deposits.
- **MRZ-3.** Areas where the available geologic information indicates that mineral deposits are likely to exist, however, the significance of the deposit is undetermined.
- **MRZ-4.** Areas where there is not enough information available to determine the presence or absence of mineral deposits.

According to the California Department of Conservation's (DOC) Mineral Land Classification Map, the project site is within an MRZ-1. As such, there are no indications that the project site contains significant mineral deposits or has a likelihood of containing significant mineral deposits (DOC 2022b. Implementation of the proposed project would not result in the loss of availability of a known mineral resource. No impact on known mineral resources would occur.

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

No Impact. The City's General Plan Open Space, Conservation, and Recreation Element states that there are two inactive quarries, located at Nelson Hill and Cement Hill, and one abandoned limestone quarry on the western and southern slopes of Cement Hill. Additionally, there are scattered petroleum and natural gas wells

\in the vicinity of the City (City of Fairfield 2013). None of the locations of the mineral sites are located on the project site. Therefore, implementation of the proposed project would not result in the loss of a locally important mineral resource recovery site and no impact would occur.

5.13 NOISE

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal, state, and city governments have established criteria to protect public health and safety and to prevent the disruption of certain human activities, such as classroom instruction, communication, or sleep. The analysis in this section is based on the noise monitoring and modeling prepared by PlaceWorks in May 2024, which is summarized herein and included as Appendix C.

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

Noise is defined as unwanted sound. It is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, State of California, and City of Fairfield have established criteria to protect public health and safety and to prevent disruption of certain human activities. Additional information on noise and vibration fundamentals and applicable regulations are in Appendix C.

Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. These uses include residences, schools, hospital facilities, houses of worship, and open space/recreation areas where quiet environments are necessary for the enjoyment, public health, and safety of the community. The nearest sensitive receptors to the project site are single-family residential uses to the west of the project site and a single-family residential use south of the project site along Dobe Lane.

Existing Conditions

The project site is in a residential neighborhood mixed with rural fields. The existing noise environment is characterized primarily by traffic noise on Dobe Lane. Noise from the bus pick-up zone; children yelling, chatting and playing at the nearby outdoor facility on the existing school grounds; dogs barking; typical residential activities; birds; and wind noise also contribute to the existing ambient noise environment.

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To determine baseline noise levels in the project vicinity, ambient noise monitoring was conducted by PlaceWorks on Thursday, May 23, 2024. Three short-term (15-minute) measurement locations were selected and conducted around the project site after school hours.

The short-term sound level meter used (Larson Davis LxT) for noise monitoring satisfies the American National Standards Institute standard for Type 1 instrumentation. The short-term sound level meter was set to "slow" response and "A" weighting (dBA). The meter was calibrated prior to and after each monitoring period. All measurements were at least 5 feet above the ground and away from reflective surfaces. Short-term measurement locations are described below and shown in Figure 7, *Noise Monitoring Locations*, and results are summarized in Table 8.

Table 8 Short-Term Noise Measurements Summary in A-Weighted Sound Levels

Monitoring Location	Description	15-Minute Noise Level, dBA						
		L_{eq}	L_{max}	L_{min}	L50	L25	L8	L2
ST-1	Near Dobe Lane at entrance to school grounds, 2:45 PM	66.2	78.7	47.7	58.5	64.1	72.2	75.9
ST-2	Adjacent to Shasta Drive near residential uses, 3:30 PM	53.7	72.2	45.9	50.0	51.9	55.2	63.4
ST3	Adjacent to Shasta Court near the residential uses, 3:58 PM	51.7	74.2	43.0	46.8	48.8	52.6	57.2

Source: Appendix C.

Short-Term Location 1 (ST-1) was conducted on the project site, approximately 30 feet southwest of Dobe Lane near the entrance to the school. A 15-minute noise measurement began at 2:45 PM on Thursday, May 23, 2024. The noise environment is characterized by children yelling and chatting during end of school departure, and traffic noise from Dobe Lane. Noise levels measured 66.2 dBA L_{eq} and 78.7 dBA L_{max} during the measurement period at ST-1.

Short-Term Location 2 (ST-2) was conducted further southwest of the project site, adjacent to Shasta Drive and approximately 100 feet west from the project site at the existing school campus. A 15-minute noise measurement began at 3:31 PM on Thursday, May 23, 2024. The noise environment is characterized primarily by noise from vehicles leaving and entering residential driveways, birds chirping, wind noise and distant traffic activity along Peabody Avenue. Noise levels measured 51.7 dBA L_{eq} and 72.2 dBA L_{max} during the measurement period at ST-2.

Short-Term Location 3 (ST-3) was conducted further west of the project site, adjacent to Shasta Court and approximately 110 feet west from the project site at the existing school campus. A 15-minute noise measurement began at 3:58 PM on Thursday, May 23, 2024. The noise environment is characterized primarily by noise from ambient residential noise activities, birds chirping, dogs barking and distant traffic noise along Peabody Avenue. Noise levels measured 47.9 dBA L_{eq} and 74.2 dBA L_{max} during the measurement period at ST-2.

Figure 7 - Noise Monitoring Locations

Phase 1 and Phase 2 Project Impact Areas
Golden West Middle School Project Boundary
ST-X Short-Term Noise Measurement Locations (3)

0 300
Scale (Feet)

Source: Nearmap; AEDIS Architects 2024.

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5.13.2 Applicable Standards

The City of Fairfield's regulations with respect to noise are included in Chapter 25, Article 1, Zoning Ordinance, of the City Code. Chapter 25.1403, Noise Standards, presents exterior noise standards for the various land use categories. These standards are presented in Table 9, *Nontransportation Noise Standards*.

Table 9 Nontransportation Noise Standards

Land Use Category	Noise-Level Descriptor	Exterior Noise-Level Standard		Interior Noise-Level Standard	
		Daytime (7:00 a.m. – 10:00 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)	Daytime (7:00 a.m. – 10:00 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)
Residential	L_{eq}	50	45	40	35
	L_{max}	70	60	60	55
Transient lodging, hospitals, nursing homes	L_{eq}	--	--	40	35
	L_{max}	--	--	60	55
Theaters, auditoriums, music halls	L_{eq}			35	35
Churches, meeting halls	L_{eq}			40	40
Office buildings	L_{eq}			45	
Schools, libraries, museums	L_{eq}			45	
Playgrounds, parks	L_{eq}	65			

Source: City of Fairfield 2024b.

Section 25.1404 of the Municipal Code indicates that operating or permitting the operation of any tools or equipment used in construction, grading or demolition works between the hours of 10:00 p.m. and 7:00 a.m. except by written permission of the Director of Public Works are prohibited. However, the City of Fairfield has not established criterion for construction noise. The Federal Transit Administration (FTA) provides criteria for acceptable construction noise levels and recommends a daytime noise threshold of 80 dBA L_{eq} (eight hour) for residential uses. For the purposes of this analysis, the FTA criterion is applied to nearby residences to determine impact significance.

Section 25.1405 of the Municipal Code consists of exemptions from sound and noise emanating sources associated with different uses. Under Section 24.1405 (D), the normal operation of public and private schools typically consisting of classes and other school-sponsored activities, such as school bands and school athletic events.

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. Noise generated by on-site construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each phase of construction involves different types of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest three pieces of

5. Environmental Analysis

equipment. The dominant equipment noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable.

The noise produced at each construction phase is determined by combining the L_{eq} contributions from the top-three loudest pieces of equipment used at a given time, while accounting for the ongoing time-variations of noise emissions (commonly referred to as the usage factor). Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels of up to 85 dBA at 50 feet. However, overall noise emissions vary considerably, depending on what specific activity is being performed at any given moment.

Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (conservatively disregarding other attenuation effects from air absorption, ground effects, and shielding effects provided by intervening structures or existing solid walls), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the site (site of each development phase) with different equipment mixes, loads, and power requirements.

The expected construction equipment mix was estimated and categorized by construction activity using the Federal Highway Administration Roadway Construction Noise Model (RCNM). Assuming the nearest sensitive receptor to the center of construction activities, construction-related noise levels would be less than 65 dBA L_{eq} at the closest receptors (residences to the west and south), which would not exceed the threshold of 80 dBA L_{eq}. Construction noise levels at receptors further away are estimated to be even less. Results are summarized in Table 10, *Project Related Construction Noise Levels (dBA),* at the nearest receptors. Existing noise levels near existing residences to the west and south were measured between 52 dBA and 65 dBA L_{eq} at the residences. Therefore, construction noise levels would increase ambient noise levels at these residences by +4 dBA. Construction noise levels would not exceed the FTA threshold of 80 dBA L_{eq} for residential uses, and project construction noise would not create a substantial increase in ambient noise levels in the vicinity of the project site. Therefore, construction noise impacts would be less than significant.

Table 10 Project-Related Construction Noise Levels

	Noise Levels in dBA L_{eq}		
Construction Activity Phase	**RCNM Reference Noise Level**	**Residential Receptors to West along Shasta Drive**	**Residential Receptor to South along Dobe Lane**
Distance in feet	**50**	**480**	**630**
Phase 1 Construction			
Asphalt Demolition and Debris Haul	85	65	63
Site Preparation and Soil Export	82	62	60
Rough Grading and Soil Export	85	65	63
Fine Grading and Soil Export	85	65	63
Utilities Trenching	77	57	55
Building Construction	83	63	61
Paving	82	62	60
Architectural Coating	74	54	52

Table 10 Project-Related Construction Noise Levels

Construction Activity Phase	Noise Levels in dBA L_{eq}		
	RCNM Reference Noise Level	Residential Receptors to West along Shasta Drive	Residential Receptor to South along Dobe Lane
Phase 2 Construction			
Building Demolition and Debris Haul and Onsite Reprocessing	85	65	63
Utilities Trenching	77	57	55
Building Construction	83	63	61
Paving	82	62	60
Architectural Coating	74	54	52
Finishing and Landscaping	77	57	55
Exceeds FTA's 80 dBA L_{eq} Threshold?		**No**	**No**

Source: FHWA 2006. Distance measurements were taken using Google Earth (2024) from the acoustical center of the project site.
dBA L_{eq} = Energy-Average (L_{eq}) Sound Levels.

On Campus Receptors

Students would remain on-site during site preparation and building construction. Construction activities could occur within 50 feet of existing classroom buildings. As shown in Table 10, construction noise levels would range between 74 and 85 dBA L_{eq} at 50 feet per the RCNM Reference Noise Level. Typical exterior-to-interior noise attenuation with windows and doors closed is 25 dBA. This would result in interior noise levels of approximately 49 to 60 dBA L_{eq}. Speech interference is considered intolerable when background noise levels exceed 60 dBA. Therefore, average construction noise levels are not expected to exceed 60 dBA L_{eq} within adjacent classrooms based on typical exterior-to-interior noise attenuation. Construction would occur throughout the project site and would be further than 45 feet at times, which would reduce interior noise levels. In addition, to avoid classroom disruption, some work would be done during instructional breaks when students are off campus. Therefore, on-campus construction noise impacts would be less than significant. Additionally, construction of the proposed project would occur during the exempt hours per Fairfield Municipal Code Section 25.1404.

Operational Noise

The proposed project's primary on-site operational noise sources would include rooftop HVAC units, drop-off areas, and playground noise. The proposed project could include rooftop HVAC units consisting of packaged heat pump and split system units. The proposed basketball and tennis court expansion would be on the northern portion of the project site. The proposed project is not anticipated to host any programming or large-scale events that could potentially disrupt nearby residential areas.

HVAC information is not available at this time. Therefore, units were assumed from typical school uses. Assumed rooftop HVAC units were based on school uses of similar sizes and could generate noise levels of up to 74 dBA (York 2006). Assuming four HVAC units operating continuously from proposed project buildings to the nearest sensitive receptor (residence to the south at 350 feet), HVAC noise levels would attenuate to 39 dBA L_{eq}. Operational noise from the HVAC equipment would not exceed nighttime and daytime noise standards of 50 dBA and 45 dBA L_{eq}, respectively (per Section 25.1403, Noise Standards, of the Fairfield

Municipal Code). Furthermore, operational noise from HVAC equipment would not substantially increase ambient noise levels at nearby residences. Thus, noise impacts from mechanical equipment would be less than significant.

The adjacent house to the south on the corner of Dobe Lane and De Ronde Drive would continue to experience noise due to vehicles idling and maneuvering at the parking lots, doors opening and closing, and voices in the parking lot areas and driveways, which would occur for short periods of approximately 10 to 20 minutes during student drop-off in the morning and student pick-up midafternoon. However, these periods are short term and would occur only during the daytime. Based on measurements conducted during student drop-off at an elementary school for another project, the average noise level measured 55.1 dBA L_{eq} at 40 feet from the curb. Accounting for distances from the nearest school drop-off area to the nearest sensitive receptor (175 feet), school drop-off noise would be 42 dBA L_{eq} at the nearest residential property line to the south of the project site. Therefore, project operational noise would not exceed daytime noise standards of 50 dBA L_{eq} (per Section 25.1403, Noise Standards, of the Fairfield Municipal Code), and impacts would be less than significant.

The proposed expanded area of basketball and tennis courts would be on the northern portion of the project site. Project noise estimates are based on a previously measured noise levels of a middle school track and field meet. During the meet, noise levels measured 66 dBA L_{eq} at 40 feet of approximately 150 people engaging in the activity. This analysis assumes 150 children are playing at the asphalt area with painted hardcourts, at a distance of 500 feet to the nearest noise sensitive receptor (i.e., residences to the west). Accounting for distances from the proposed court extension, hardcourt noise would be 46 dBA L_{eq} at the nearest residential property line to the west of the project site. Therefore, project operational noise would not exceed daytime noise standards of 50 dBA L_{eq} (per Section 25.1403, Noise Standards, of the Fairfield Municipal Code), and impacts would be less than significant.

Operational Off-Site Traffic Noise

A project will normally have a significant effect on the environment related to traffic noise if it substantially increases the ambient noise levels for adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an outdoor environment. Noise levels above 65 dBA CNEL are normally unacceptable at sensitive receptor locations such as residences, and noise environments in these areas would be considered degraded. Based on this, a significant impact would occur if the following traffic noise increases occur relative to the existing noise environment:

- 1.5 dBA in ambient noise environments of 65 dBA CNEL and higher
- 3 dBA in ambient noise environments of 60 to 64 dBA CNEL
- 5 dBA in ambient noise environments of less than 60 dBA CNEL

For this analysis, a significant traffic noise impact occurs when the thresholds above are exceeded under cumulative conditions (with project) and the contribution of the project to future traffic is calculated to be greater than 3 dBA CNEL, based on existing modeled traffic noise levels.

With the additional classroom capacity, student enrollment would also increase. Traffic volume data for the new trips associated with the project are provided by Garland Associates (2024). The proposed project is expected to increase from the existing 1,400 weekday daily trips to 1,730 weekday daily trips. The data provided by the traffic engineer presents the street and locations with scenarios for existing, and existing with project conditions. Table 11, *Project-Related Increases in Traffic Noise, dBA CNEL at 50 Feet,* shows that the addition of project trips due to the school expansion would result in a 2 dBA increase over existing conditions. Since the project would not result in a 3 dBA increase, impacts would be less than significant.

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Table 11 Project-Related Increases in Traffic Noise, dBA CNEL at 50 Feet

Roadway	Segment		Traffic Noise Increase					
	From	To	Existing No Project	Existing with Proposed Project	Existing Increase	Year 2027 No Project	Year 2027 With Project	Cumulative Increase
Dobe Lane	De Ronde Drive	North of School Site	55	56	0.9	55	56	0.9
	De Ronde Drive	Dobe Lane	58	60	1.9	59	60	0.6
Markeley Lane	De Ronde Drive	West of School Site	56	59	2.2	58	59	0.7
Peabody Road	Dobe Lane	Whitney Drive	71	72	0.9	72	72	0.0
	Dobe Lane	Air Base Parkway	71	72	1.0	72	72	0.1

Source: Traffic data provided by Appendix C.

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

Less Than Significant Impact.

Construction

Construction can generate varying degrees of ground vibration, depending on the construction procedures and equipment. The use of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

Table 12, *Proposed Project's Vibration Levels (in/sec PPV)*, summarizes vibration levels for typical construction equipment at a reference distance of 25 feet. Typical construction equipment can generate vibration levels ranging up to 0.210 inches per second (in/sec) peak particle velocity (PPV) at 25 feet. Vibration levels at a distance greater than 50 feet would attenuate to 0.074 in/sec PPV or less.

Table 12 Proposed Project's Vibration Levels (in/sec PPV)

Equipment	FTA Reference PPV (in/sec) at 25 Feet	Residences to the West Along Shasta Drive PPV (in/sec) at 350 Feet	Residence to the South Along Dobe Lane PPV (in/sec) at 280 Feet
Vibratory Roller	0.210	0.004	0.006
Large Bulldozer	0.089	0.002	0.002
Loaded Trucks	0.076	0.002	0.002
Jackhammer	0.035	0.001	0.001
Small Bulldozer	0.003	0.0001	0.0001

Source: FTA 2018.

The City of Fairfield does not have an established threshold for assessing construction vibration impacts. The FTA maximum acceptable vibration standard of 0.2 in/sec PPV for nonengineered timber and masonry buildings is applied for assessing vibration impacts from project construction-related activities. The nearest structure to the site's construction activities, the residential use to the south, is approximately 280 feet away from the proposed construction area boundary. At this distance, construction vibration from a vibratory roller would attenuate to 0.006 in/sec PPV or less. Proposed construction activities would not exceed the FTA vibration standard of 0.2 in/sec PPV for nonengineered timber and masonry buildings. Therefore, impacts from construction vibration would be less than significant.

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On-Campus Receptors

Students would remain on-site during site preparation and building construction. Construction activities could occur within 50 feet of existing classroom buildings. Construction vibration levels would range between 0.001 in/sec PPV and 0.087 in/sec PPV at 45 feet, accounting for attenuation based on the FTA reference vibration levels shown in Table 12. At this distance, construction vibration from a vibratory roller would attenuate to 0.087 in/sec PPV or less and would not exceed the FTA vibration standard of 0.2 in/sec PPV for nonengineered timber and masonry buildings. Therefore, on-campus construction vibration impacts would be less than significant.

Operation

The proposed project would not include the use of any large-scale stationary equipment that would result in excessive vibration levels. Therefore, the project would not result groundborne vibration impacts during operations.

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

Less Than Significant Impact. The project site is approximately 0.65 mile north of Travis Air Force Base (Travis AFB), and 0.36 miles north of the Davis Grant Medical Center Helipad. According to Travis AFB Aircraft Land Use Compatibility Report (2024), the project site is outside the 60 dBA CNEL noise contour for the Travis Air Force Base. Additionally, the David Grant Medical Center Helipad would typically be used for emergency and intermittent aircraft flights. Therefore, implementation of the proposed project would not result in increased exposure to aircraft noise of people working at or visiting the project site.

5.14 POPULATION AND HOUSING

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

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

No Impact. The proposed project would be served by existing roads and other infrastructure. No new roads, expanded utility lines, or housing would be constructed or required as part of the project. The proposed project would serve existing students already attending schools within the District and would not induce population growth, either directly or indirectly. No impacts related to population growth would occur.

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

No Impact. No housing exists on the Golden West MS campus or on the District-owned parcel. The proposed project would not require relocation or construction of replacement housing; therefore, no impact would occur.

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5.15 PUBLIC SERVICES

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

a) Fire protection?

Less Than Significant Impact. The City of Fairfield Fire Department provides fire protection to the project area. The nearest fire station is Station #39 at 1975 Huntington Drive in the City of Fairfield, approximately 1.5 miles from the Golden West MS campus. Station 39 is equipped with Engine 39 (Paramedic Staffed), Grass 39 Fire Truck (Type III), a Fire Investigation Unit (Fairfield FD 2024). Demand for fire protection services is generally tied to population growth. The project would construct new classrooms to accommodate incoming 6th grade students from other schools within the District. It would not increase the population of the project area. Therefore, the project would not substantially increase the need for fire protection services.

b) Police protection?

Less Than Significant Impact. The Fairfield Police Department provides police protection to the project site. The Fairfield Police Department is responsible for campus safety and creating safe school passages for students, staff, and the school community. The Fairfield Police Department facility is at 1000 Webster Street in Fairfield, about 4.8 miles southwest of the Golden West MS campus (Fairfield PD 2024). The project may cause a very slight increase in demands for police services during construction from possible trespass, theft, and/or vandalism. Active construction areas would be fenced. Any increase in police demands would be temporary and would not require construction of new or expanded police facilities. General campus activities are under the supervision of the school administrators and staff. The demand for police protection services generally corresponds to population. Since the project would not increase the area population, project implementation would not increase the demand for police services or generate a need for additional law enforcement facilities. The project would increase the student population but would draw those students from surrounding elementary

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schools within the district. The project would not increase the area population or demand and would not result in new adverse impacts on existing police service. Impacts would be less than significant.

c) Schools?

Less Than Significant. The proposed project would increase the enrollment at Golden West MS by including 6th graders from within the District. The introduction of 6th grade enrollment and an increase in student population would come from the District's surrounding elementary schools that currently host 6th graders. This would not result in the creation of any new schools. Therefore, impacts would be considered less than significant.

d) Parks?

No Impact. Increases in demands for park facilities generally result from population increases, which in turn generally result from residential development and development of new job-generating land uses. The proposed project would install new basketball and tennis courts and a new play area to accommodate the incoming 6th graders. As such, the project would not require the Golden West MS students to use off-campus recreational facilities. The project would install new basketball and tennis courts and a play area that are available to the public under the Civic Center Act, improving recreational facilities in the area. The proposed project would not increase the area population. Therefore, no impact to park services would occur.

e) Other public facilities?

No Impact. Physical impacts to public services are usually associated with population in-migration and growth, which increase the demand for public services and facilities. The project would not result in impacts associated with the provision of other new or physically altered public facilities (e.g., libraries, hospitals, childcare, teen, or senior centers). The project would not induce population growth. No impacts to other public facilities would occur.

5.16 RECREATION

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				x
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?

No Impact. The proposed project would make construct classrooms, a teacher workroom, restrooms, an administrative/multiuse building, a new staff parking lot, new basketball and tennis courts, and stockpile dirt on a District-owned parcel. Athletic facilities at the Golden West Middle School campus would continue to be available for community uses pursuant to the Civic Center Act, so the project would have no impact on community access to recreational facilities (CDE 2023). Additionally, the project would increase enrollment at the Golden West MS campus and would draw students from other schools within the District. The additional students would use the on-campus recreational facilities for recreation during school hours and not any of the surrounding parks. As a result of the project, the local population would not increase and would not increase the use of existing off-campus parks and recreational facilities. No impact would occur, and no mitigation is 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?

No Impact. The proposed project would not result in population growth, necessitating the construction of offsite recreational facilities. The project would result in the construction of four new basketball courts, six new tennis courts, and a play area with grass turf, and the environmental effects of the construction of these facilities are examined throughout this document. The project would not increase the use of existing neighborhood and regional parks or other recreational facilities. It would not increase the population in the surrounding community. Therefore, it would not cause physical deterioration of neighborhood and regional parks or other recreational facilities. The project would not result in the need for construction of new recreational facilities. No impacts to recreational facilities would occur.

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5.17 TRANSPORTATION

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

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

No Impact. The circulation element of the City of Fairfield General Plan includes various objectives, policies, and programs that outline the overall goal to "create and maintain an efficient, safe, and coordinated multi-modal circulation system that reduces environmental and social impacts of transportation systems, serves the needs of a variety of users and meets the social, economic development, and urban design needs of the community." The objectives, policies, and programs in the circulation element address traffic congestion, levels of service, transit, bicyclists, pedestrians, and safety (City of Fairfield 2002).

The proposed school expansion project, both Phase 1 and Phase 2, is consistent with the goals and objectives in the circulation element, and it would not adversely affect the performance of any roadway, transit, or nonmotorized (pedestrian and bicycle) transportation facilities. Table 13, *Consistency with the Circulation Element's Goal and Objectives*, illustrates how the project is consistent with the goal and objectives related to roadway, transit, or nonmotorized transportation facilities in the general plan's circulation element.

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Table 13 Consistency with the Circulation Element's Goal and Objectives

Policy	Consistency Discussion
Circulation Goal: Create and maintain an efficient, safe, and coordinated multi-modal circulation system that reduces environmental and social impacts of transportation systems, serves the needs of a variety of users and meets the social, economic development, and urban design needs of the community.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1), and all other work would be conducted on the Golden West MS campus. The proposed project would not interfere with this objective because the project is not proposing to change the existing multimodal circulation system.
Objective CI 1: Establish a circulation system that is consistent with the land use patterns of the City.	***Consistent.*** The proposed project would not interfere with this objective because the project would not change the current land use.
Objective CI 2: Achieve a coordinated regional and local transportation system that minimizes traffic congestion and efficiently serves users.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1), and all other work would be conducted on the Golden West MS campus. The responsibility of this objective would be with the City of Fairfield, and the project would not interfere with this objective.
Objective CI 3: Street and highway improvements shall provide adequate and appropriate levels of service for all streets in Fairfield.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1) and all other work would be conducted on the Golden West MS campus. The proposed project would not change the levels of service on the streets that serve the Golden West MS campus; see Appendix D
Objective CI 4: Adequately finance street and highway improvements.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1), and all other work would be conducted on the Golden West MS campus. The responsibility of this objective would be with the City of Fairfield.
Objective CI 5: Provide adequate parking and loading facilities while encouraging alternative means of transportation.	***Consistent.*** The proposed project would provide 25 additional parking spaces for staff on campus (Phase 1). The additional parking spaces would allow staff to park off-street and not along the adjacent streets.
Objective CI 6: Develop Transportation Systems Management (TSM) programs for the Fairfield area in order to reduce the amount of peak hour congestion on City streets.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1), and all other work would be conducted on the Golden West MS campus. The responsibility of this objective would be with the City of Fairfield, and the project would not interfere with this objective.
Objective CI 7: Develop a transit network capable of satisfying both local and regional travel demand.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1), and all other work would be conducted on the Golden West MS campus. The responsibility of this objective would be with the City of Fairfield, and the project would not interfere with this objective.
Objective CI 8: Preserve the future availability of the Travis Air Force Base facility.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1), and all other work would be conducted on the Golden West MS campus. The proposed project would not interfere with this objective or the Travis Air Force Base facility.
Objective CI 9: Support bicycling as a safe method of everyday transportation for all people in Fairfield. Bicycle facilities should link residences, major activity centers, employment, public services, recreational facilities, and regional bicycle routes.	***Consistent.*** The proposed project would maintain the existing bicycle facilities. The project would construct two new driveways on De Ronde Drive (Phase 1) but would not impact bicycle facilities. All other work would be done on the Golden West MS campus.
Objective CI 10: Provide pedestrian facilities throughout the City to encourage walking as an alternative to short distance vehicle travel.	***Consistent.*** The proposed project would maintain the existing pedestrian facilities such as sidewalks. The project would construct two new driveways on De Ronde Drive (Phase 1) but would not impact pedestrian facilities. All other work would be done on the Golden West MS campus.

Table 13 Consistency with the Circulation Element's Goal and Objectives

Policy	Consistency Discussion
Objective CI 11: Develop a vehicular circulation system that is safe and sensitive to adjoining land uses.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1), and all other work would be conducted on the Golden West MS campus. The streets serving the Golden West MS campus are a part of an existing circulation system in the City of Fairfield. The proposed project would not interfere with this objective because the project is not proposing to change the existing circulation system.
Objective CI 12: Contribute towards improving the air quality of the region through more efficient use of private vehicles and increased use of alternative transportation modes.	***Consistent.*** The proposed project would construct two new driveways on De Ronde Drive (Phase 1), and all other work would be conducted on the Golden West MS campus. The proposed project would not interfere with existing bicycle and pedestrian facilities or existing bus facilities. The proposed project will also implement EV charging stations and EV-capable parking spaces in the proposed staff parking lot, which would help improve local air quality.
Source: City of Fairfield 2002.	

Therefore, the proposed project would not conflict with the goal and objectives in the circulation element including transit, roadway, bicycle, and pedestrian facilities. No impact would occur.

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?

Less Than Significant Impact. Vehicle delays and levels of service (LOS) have historically been used as the basis for determining the significance of traffic impacts as standard practice in California Environmental Quality Act (CEQA) documents. On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analyses as part of CEQA compliance. SB 743 eliminated auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. As part of the current CEQA Guidelines, the criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). Pursuant to SB 743, the California Natural Resources Agency adopted revisions to the CEQA Guidelines on December 28, 2018, to implement SB 743. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. Under the Guidelines, metrics related to "vehicle miles traveled" (VMT) were required beginning July 1, 2020, to evaluate the significance of transportation impacts under CEQA for development projects, land use plans, and transportation infrastructure projects. State courts ruled that under the Public Resources Code Section 21099, subdivision (b)(2), "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment" under CEQA, except for roadway capacity projects.

As stated in the "Technical Advisory on Evaluating Transportation Impacts in CEQA" and the "Vehicle Miles Traveled: Focused Transportation Impact Study Guide," projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact and can be screened from a CEQA VMT analysis because they fall into the small project category (see Appendix D). Although the proposed project would generate an estimated 950 vehicle trips per day, as shown in Table 14, *Projected-Generated*

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Traffic, most or all of these vehicle trips would already be traveling on the area's roadway network because the 450 new students that would be attending Golden West Middle School would have been attending a school in the district regardless of the status of the proposed project. The site-generated traffic in the table does not represent an overall increase in vehicle trips in the area. It represents trips that would be redirected to this school site instead of to another school in the District. There would, therefore, be little or no increase in vehicle miles traveled associated with the project.

Table 14 Projected Generated Traffic

Facility	AM Peak Hour			Daily Traffic
	Total	Inbound	Outbound	
Trip Generation Rates				
Middle School (vehicle trips per student)	0.74	55%	45%	2.10
Generated Traffic Volumes				
Existing School (744 students)	551	303	248	1,560
Proposed School (1,194 students)	884	486	398	2,510
Net Increase (450 students)	333	183	150	950
Traffic/Transportation Impact Analysis, Garland Associates (Appendix D)				

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 would not provide any on- or off-site access or circulation features that would create or increase any design hazards or incompatible uses. Access to the school site would continue to be provided by the existing driveways on the west side of De Ronde Drive. The driveway at the north end of the parking lot would continue to be an entry-only driveway, and the driveway at the south end of the parking lot would continue to be an exit-only driveway. In addition, as part of Phase 1, two new driveways would be provided on De Ronde Drive to provide access to a new staff parking lot that will be constructed at the north end of the school site.

The increased levels of traffic, the increased number of pedestrians, and the increased number of vehicular turning movements that would occur at the driveways and at the nearby intersections would result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring. These impacts would not be significant because the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity. These streets and intersections have historically been accommodating school-related traffic on a daily basis for the existing school. The proposed project would add more vehicles to the roadway network, but the additional vehicles would be compatible with the design and use of the affected roadways. The proposed project would not result in any major safety or operational issues relative to access and circulation.

As the existing roadway network could readily accommodate the anticipated increase in vehicular, pedestrian, and bicycle activity, the proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses. Impacts would be less than significant.

d) Result in inadequate emergency access?

No Impact. The existing access and circulation features at the school, including the driveways, on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. In addition to the existing access features, as part of Phase 1, two new driveways and a parking lot would be provided at the north end of the campus. These facilities would provide access to the school grounds, the buildings, and all other areas of the project site, including the playfields and hard courts. The design and any modifications to the access features are subject to and must satisfy the District's requirements and would be subject to approval by the Fairfield Fire Department and the California Division of the State Architect. The proposed project would not, therefore, result in inadequate emergency access.

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5.18 TRIBAL CULTURAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			x	
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		x		

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

i) **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or**

Less Than Significant Impact. The project site is located on the Golden West MS campus and a 2-acre, District-owned parcel. The project site on the Golden West MS campus is developed with classrooms, a gym, administrative buildings, restrooms, and a parking lot. The project site is not listed as a historical resource in the National Register of Historic Places, California Historical Landmarks, or California Historical Resources (NPS 2024; OHP 2024a; OHP 2024b). Implementation of the proposed project would not cause a substantial adverse change in the significance of a historical resource. The project site does not meet the historic resource criteria and does not meet the definition of a historic resource pursuant to CEQA. Implementation of the proposed project would not result in any substantial adverse change in a tribal cultural resource defined pursuant to PRC Section 5024.1 or PRC Section 5020.1(k). A less than significant impact would occur.

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.

No Impact. The project site is not listed as a historical resource in the National Register of Historic Places, California Historical Landmarks, or California Historical Resources (NPS 2024; OHP 2024a; OHP 2024b). Additionally, the project site does not contain any known tribal resources pursuant to PRC section 5024.1. However, the proposed project would include ground-disturbing activities that could discover tribal cultural resources. Mitigation Measure TCR-1 would be implemented to reduce potentially significant impacts to less than significant.

Mitigation Measure

TCR-1 If tribal cultural resources are inadvertently discovered during ground disturbing activities for this project, the following procedures will be carried out for treatment and disposition of the discoveries:

- Upon discovery of any Tribal Cultural Resources, construction activities shall cease in the immediate vicinity of the find (not less than the surrounding 50 feet) until the find can be assessed.
- All Tribal Cultural Resources unearthed by project activities shall be evaluated by the qualified archaeologist. If the resources are Native American in origin, the proper Tribe(s) will retain it/them in the form and/or manner the Tribe(s) deems appropriate, for educational, cultural and/or historic purposes.
- If human remains and/or grave goods are discovered or recognized at the project site, all ground disturbance shall immediately cease, and the county coroner shall be notified per Public Resources Code Section 5097.98, and Health & Safety Code Section 7050.5. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).
- Work may continue on other parts of the project site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a non-Native American resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures, or appropriate mitigation, must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Sections 21083.2(b) for unique archaeological resources.

- Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. Any historic archaeological material that is not Native American in origin shall be curated at a public, non-profit institution with a research interest in the, if such an institution agrees to accept the material. If no institution accepts the archaeological material, it shall be offered to a local school or historical society in the area for educational purposes.

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5.19 UTILITIES AND SERVICE SYSTEMS

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or 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 waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			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.

Water

The proposed project includes construction of 16 classrooms, a teacher workroom, restrooms, and a administrative/multiuse building, which would require the installation of a water-line connection to serve the proposed project. Water is currently provided to the campus and project site by the FMUs' existing water mains (City of Fairfield 2021). Portable water would be provided to the proposed project through connections to the existing water mains. The proposed water system improvements would be designed and constructed in accordance with the California Building Code and CALGreen requirements, such as CALGreen Division 5.3, Water Efficiency and Conservation, including Sections 5.303, Indoor Water Use, and 5.304, Outdoor Water Use. As further discussed under Threshold (b), FMU provides water to the campus, which is sourced from the Solano Project's Lake Berryessa and the State Water Project at the Sacramento River. Contracts for the water are administered by Solano County Water and settlement water from the Department of Water Resources; the City does not use groundwater as a supply for water (City of Fairfield 2021). The proposed project would not require the construction of new or expanded water facilities that could cause significant effects. Impacts would be less than significant.

Wastewater

The proposed project includes construction of 16 classrooms, a teacher workroom, restrooms, and an administrative/multiuse building, which would require the installation of a wastewater connection to serve the proposed project. The Fairfield-Suisun Sewer District (FSSD) provides wastewater collection and conveyance service to the Golden West MS campus. FSSD contains two treatment plants (Waterman and North Bay Regional) with a design capacity of 23.7 million gallons per day (mgd) and an average daily flow of 12.2 mgd (City of Fairfield 2021; FSSD 2024a, 2024b). As further discussed in Threshold 5.19(c), the proposed project would not substantially increase wastewater. Wastewater generated from the proposed project will be conveyed to the existing sewer lines on campus. Therefore, the proposed project would not require the construction of new or expanded wastewater facilities that could cause significant environmental effects. Impacts would be less than significant.

Stormwater Drainage

The proposed project would result in a slight increase in impervious surfaces compared to existing conditions with the construction of a new staff parking lot, four basketball courts, and six tennis courts. The increase in impervious surfaces due to the proposed project would be minor. The stormwater from the proposed project would be conveyed to existing stormwater drains on campus or to the neighboring storm drain system along roadways. The proposed project would not significantly increase or change the stormwater volume, rate, or pattern beyond connecting to existing stormwater system. Impacts would be less than significant.

Electric Power

Electricity is provided by PG&E or Marin Clean Energy (MCE). The proposed project would connect to existing electric power infrastructure for operation and the proposed buildings would be all-electric. Although the proposed project would result in a higher electricity demand than existing conditions, the increase would be negligible in PG&Es capacity. Additionally, MCE currently has 944 megawatts of renewable energy online and under development, with more development projects underway which would meet the electricity demand from the project. To reduce potential waste of electricity, the 2019 CALGreen Building Standards Code (Part 11, Title 24, CCR) would be applied to the proposed project. Implementation of the proposed project would not result in major construction related to electrical power facilities that could cause significant environmental impacts. Impacts would be less than significant.

Natural Gas

Natural gas service is provided by the PG&E. The proposed project would not require the use of natural gas during operation. The project would not require the construction of new or expanded natural gas facilities. A less than significant impact would occur.

Telecommunications

The proposed project would not require additional telecommunications facilities demand. The proposed project would not require off-site construction or relocation of utilities, and therefore no impacts would occur.

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. The District's current water supply is primarily sourced from the Solano Project, the State Water Project, and "settlement water" obtained through negotiations with the Department of Water Resources (City of Fairfield 2021). The Solano Project delivers water from Lake Berryessa and the State Water Project delivers water from the Sacramento River. Under the State Water Project the City is allocated 14,678 acre-feet (AF) of water and is also entitled, under certain conditions, to North of Delta allocations—27,220 AF from the Solano Project and 11,800 AF of settlement water (City of Fairfield 2021). The City's 2020 Urban Water Management Plan (UWMP) found that the water resources available to FMU is reliable and adequate to meet existing and projected demands during normal, dry and multiple dry year events for the 25-year planning period (City of Fairfield 2021). The City would have a surplus of water ranging from 7,249 millions of gallons (mg) in 2045 during a normal year to an surplus of 3,446 mg during a dry year in 2045. With a potential increase of 450 students, the proposed project would result in an increase of approximately 1,152,049 gallons per year,[8] which is less than one percent of the proposed surplus (CAPCOA 2022).

The proposed project's water demand would be captured by the projected demand of the UWMP. Furthermore, development of the proposed project would be required to comply with the provisions of CALGreen, including Sections 5.303, Indoor Water Use, and 5.304, Outdoor Water Use. Based on the UWMP, FMU contains adequate water supplies to meet the water demands of the proposed project and the City during normal, dry and multiple dry years. Impacts would be less than significant.

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. Wastewater generated at the campus is conveyed to the FSSD, which contains two treatment plants (Waterman and North Bay Regional) with a design capacity of 23.7 mgd and an average daily flow of 12.2 mgd (City of Fairfield 2021; FSSD 2024a, 2024b). Thus, the FSSD has an excess capacity of approximately 11.5 mgd.

The net increase in wastewater generation for the proposed project is assumed to be 95 percent of the increase in indoor water use. The proposed project results in a net increase of indoor water demand of 29,889.9 gpd. Therefore, the proposed project would generate a net increase in wastewater generation of about 28,395.4 gpd. The amount of wastewater that would be generated is less than one percent of FSSD wastewater treatment plant's total remaining daily treatment capacity. Therefore, project development would not require the construction of new or expanded wastewater treatment facilities. Impacts would be less than significant.

8 See Appendix A.

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

Less Than Significant Impact. During construction the proposed project would generate some demolition debris from clearance and waste debris of the existing administrative building and hardscape. In accordance with CALGreen Section 5.408, Construction Waste Reduction, Disposal, and Recycling, at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. Solid waste generated in the City of Fairfield is disposed of at the Recology Hay Road landfill, which has a remaining capacity of 30,433,00 tons[9] (Cal Recycle 2024a). The proposed project would increase student capacity by 450 students which would increase solid waste generation by approximately 82.13 tons (see Appendix A). The landfill has sufficient capacity to facilitate the increase in waste generation and would be within the remaining capacity of area landfills. The proposed project would not adversely impact landfill capacity or impair attainment of solid waste reduction goals, and impacts would be less than significant.

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

Less Than Significant Impact. The District complies with federal, State, and local statutes and regulations related to solid waste, such as the California Integrated Waste Management Act and local recycling and waste programs. The District and its construction contractor would comply with all applicable laws and regulations and make every effort to reuse and/or recycle the construction debris that would otherwise be taken to a landfill. CALGreen Section 5.408, Construction Waste Reduction, Disposal, and Recycling, requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. The proposed project would comply with all applicable federal, State, and local statutes and regulations related to solid waste disposal. Therefore, the impacts would be less than significant.

[9] A volume-to-weight conversion rate of 2,000 lbs/cubic yard (1 tons/cubic yard) for "Compacted - MSW Large Landfill with Best Management Practices" is used as per CalRecyle's 2016 Volume-to-Weight Conversion Factors, at https://www.epa.gov/sites/production/files/201604/documents/volume_to_weight_conversion_factors_memorandum_04192016_508fnl.pdf.

5.20 WILDFIRE

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

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

Less Than Significant Impact. Golden West MS and District-owned parcel are in an urbanized area of the city and are not in a very high fire hazard severity zone (FHSZ) (CAL FIRE 2024). The project would include the construction new school facilities and infrastructure to accommodate additional incoming students and the stockpiling of excess dirt onto a District-owned parcel. According to the City's EOP, the City's primary EOC is at 1200 Kentucky Street, and the alternate EOC is at 530 Clay Street. The EOCs operate as the command-and-control center for the City during emergencies. The project site is approximately six miles east of the primary and alternate EOCs. The EOP does not specifically state any evacuation routes, which are developed in coordination with the City, County Sheriff's Department, and the Highway Patrol; the responsible agencies would be allowed to comment on any potential impacts to the EOP (City of Fairfield 2022). Therefore, the project would not impair an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant.

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 Golden West MS campus and District-owned parcel are in an urban area and not near a state responsibility area or lands classified as being very high FHSZs. Additionally, the project is near lands that are relatively flat and not near lands that contain factors that would exacerbate wildfire risks. Therefore, no impact would occur.

5. Environmental Analysis

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. Golden West MS is not in a very high FHSZ (CAL FIRE 2024). Additionally, the project site is an existing middle school served by existing infrastructure and on an undeveloped District-owned property. The proposed project and necessary utility lines would not exacerbate fire risk or result in temporary or ongoing impacts to the environment. 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?

No Impact. The campus is surrounded by development with relatively flat topography. There are no vegetated slopes susceptible to wildfire in the surrounding area. The project would not result in runoff, postfire slope instability, or drainage changes. No impact would occur.

5.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

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

Less Than Significant with Mitigation Incorporated. As discussed in Section 5.4, *Biological Resources*, while it is unlikely that burrowing owls exist on-site since the site is disturbed, the proposed project would implement Mitigation Measure BIO-1 to ensure that any construction impacts to burrowing owls are less than significant. Also, to ensure that construction impacts to Swainson's hawk, nesting habitat for special-status birds, and to pallid bat, Townsend's bat, and day-roosting bats are less than significant, Mitigation Measures BIO-2 through BIO-4 would be implemented. Additionally, to ensure that the proposed project is in compliance with the City of Fairfield Municipal Code Section 25.36 regarding tree removal, BIO-5 would be implemented to ensure impacts are less than significant.

As discussed in Section 5.5, *Cultural Resources*, and Section 5.18, *Tribal Cultural Resources*, it is unlikely that archeological resources would be found during construction of the proposed project. Nevertheless, development of the proposed project would involve grading and earthwork activities of the project site; thus, the potential exists to unearth previously undiscovered archeological and paleontological resources. Incorporation of Mitigation Measures CUL-1, GEO-1, and TCR-1 would ensure that impacts to archeological resources would be less than significant.

5. Environmental Analysis

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. The issues relevant to Project development are confined to the immediate Project Site and surrounding area. Additionally, the Project Site is in an urbanized area of Fairfield where supporting utility infrastructure (e.g., water, wastewater, and drainage) and services (e.g., solid waste collection, police and fire protection) currently exist. As substantiated in this Initial Study, Project implementation would not require the construction of new or expansion of existing utility infrastructure or services. The Project Site is also generally too small in scope to appreciably contribute to existing cumulative impacts.

Furthermore, impacts related to other topical areas such as air quality, GHG, hydrology and water quality, and traffic would not be cumulatively considerable with development of the Project in conjunction with other cumulative projects.

In consideration of the preceding factors, the Project's contribution to cumulative impacts would be rendered less than significant; therefore, Project impacts would not be cumulatively considerable.

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

Less Than Significant Impact. The project would comply with applicable local, State, and federal laws governing general welfare and environmental protection. The implementation of required mitigation measures specified in this Initial Study would reduce impacts to less than significant for air quality, biological resource, greenhouse gas emissions, and cultural resources. Project impacts on human beings, either directly or indirectly, would be less than significant.

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Appendix A Air Quality and Greenhouse Gas Background and Modeling Data

Appendices

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Air Quality and Greenhouse Gas Appendix

1. Air Quality

Ambient air quality standards (AAQS) have been adopted at State and federal levels for criteria air pollutants. In addition, both the State and federal government regulate the release of toxic air contaminants (TACs). The City of San Francisco is in the San Francisco Bay Area Air Basin (SFBAAB) and is subject to the rules and regulations imposed by the Bay Area Air Quality Management District (BAAQMD), as well as the California AAQS adopted by the California Air Resources Board (CARB) and national AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below. The discussion also identifies the natural factors in the air basin that affect air pollution.

1.1 REGULATORY FRAMEWORK

1.1.1 Ambient Air Quality Standards

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

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

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, these pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m3	150 µg/m3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m3	12 µg/m3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m3	
Lead (Pb)	30-Day Average	1.5 µg/m3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m3	
	Rolling 3-Month Average	*	0.15 µg/m3	
Sulfates (SO_4)[5]	24 hours	25 µg/m3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: California Air Resources Board (CARB). 2016, October 1. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.
Notes: ppm: parts per million; μg/m^3: micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m^3 to 12.0 μg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 μg/m^3, as was the annual secondary standard of 15 μg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

1.1.2 Air Pollutants of Concern

A substance in the air that can cause harm to humans and the environment is known as an air pollutant. Pollutants can be in the form of solid particles, liquid droplets, or gases. In addition, they may be natural or man-made.

1.1.2.1 CRITERIA AIR POLLUTANTS

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death. [1]

Volatile Organic Compounds (VOC) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, the Air District has established a significance threshold for this pollutant.

Nitrogen Oxides (NO_x) are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure.[2] NO_2 acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million (ppm). [3]

Sulfur Dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When SO_2 forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. [4]

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the San Francisco Bay Area Air Basin (SFBAAB or Air Basin), most

1 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

2 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

3 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

4 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch). Diesel particulate matter (DPM) is also classified a carcinogen.

Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The EPA scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates. [5]

Ozone (O_3) is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees and materials such as rubber and fabrics.[6]

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Because emissions of lead are found only in projects that are permitted by the Air District, lead is not an air quality of concern for the proposed project.

1.1.2.2 TOXIC AIR CONTAMINANTS

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health."

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5 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

6 Bay Area Air Quality Management District, 2017. Revised California Environmental Quality Act Air Quality Guidelines.

A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

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

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs.[7] Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

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

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

7 California Air Resources Board (CARB). 1999. California Air Resources Board (CARB). Final Staff Report: Update to the Toxic Air Contaminant List. https://ww3.arb.ca.gov/toxics/id/finalstaffreport.htm.

Community Risk

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective*[8] to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3-butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

1.1.3 Bay Area Air Quality Management District

The Air District is the agency responsible for assuring that the National and California AAQS are attained and maintained in the Air Basin. Air quality conditions in the Air Basin have improved significantly since the Air District was created in 1955. The Air District prepares air quality management plans (AQMP) to attain ambient air quality standards in the Air Basin. The Air District prepares ozone attainment plans for the National O_3 standard and clean air plans for the California O_3 standard. These air quality management plans are prepared in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). The Air District adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate (2017 Clean Air Plan) on April 19, 2017, making it the most recent adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools.

1.1.3.1 BAY AREA AIR QUALITY MANAGEMENT DISTRICT 2017 CLEAN AIR PLAN

2017 Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area

The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues in providing the framework for SFBAAB to achieve attainment of the California and National AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. Additionally, it sets a goal of reducing health risk impacts to local communities by 20 percent by 2020. Furthermore, the 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and

[8] California Air Resources Board (CARB). 2005, April. Air Quality and Land Use Handbook: A Community Health Perspective. https://www.arb.ca.gov/ch/handbook.pdf.

2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following [9]:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A comprehensive multipollutant control strategy has been developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

1.1.3.2 BAAQMD'S COMMUNITY AIR RISK EVALUATION PROGRAM (CARE)

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk–weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory

[9] Bay Area Air Quality Management District. 2017, April 19. Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/plans-under-development.

accounted for CARB's diesel regulations. Overall, cancer risk from TACs dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.[10]

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. The highest modeled risks were found east of San Francisco, near West Oakland, and the Maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo
- Western Alameda County along the Interstate 880 (I-880) corridor and the cities of Berkeley, Alameda, Oakland, and Hayward
- San Jose
- Eastern side of San Francisco
- Concord
- Vallejo
- Pittsburgh and Antioch

The project site is not within a CARE-program impacted community.

1.1.3.3 AB 617 COMMUNITY ACTION PLANS

In July of 2017, Governor Brown signed Assembly Bill 617 to develop a new community focused program to more effectively reduce exposure to air pollution and preserve public health in environmental justice communities. The bill directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies.

On September 27, 2018, CARB approved BAAQMD's recommended communities for monitoring and emission reduction planning. The state approved communities for year 1 of the program, as well as communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation (CARE) areas, as well as areas with large sources of air pollution (refineries, seaports, airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[11]

- Year 1 Communities:
  - West Oakland. The West Oakland community was selected for BAAQMD's first Community Action Plan. In 2017, cancer risk in from sources in West Oakland (local sources) was 204 in a million. The primary sources of air pollution in West Oakland include heavy truck and cars, port and rail sources,

[10] Bay Area Air Quality Management District. 2014. Improving Air Quality & Health in Bay Area Communities, Community Air Risk Program (CARE) Retrospective and Path Forward (2004–2013), April.

[11] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

large industries, and to a lesser extent other sources such as residential sources (i.e., woodburning). The majority (over 90 percent) of cancer risk is from diesel $PM_{2.5}$.[12]

- Richmond: Richmond was selected for a community monitoring plan in year 1 of the AB 617 program. The Richmond area is in western Contra Costa County and includes most of the City of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. The primary goals of the Richmond monitoring effort are to leverage historic and current monitoring studies, to better characterize the area's mix of sources, and to more fully understand the associated air quality and pollution impact. [13]

■ Year 2-5 Communities:

- East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, Tri-Valley, and Vallejo are slated for action in years 2-5 of the AB 617 program. [14]

1.1.3.4 REGULATION 7, ODOROUS SUBSTANCES

Sources of objectionable odors may occur within the City. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

1.1.3.5 OTHER BAAQMD REGULATIONS

In addition to the plans and programs described above, BAAQMD administers a number of specific regulations on various sources of pollutant emissions that would apply to individual development projects:

- BAAQMD, Regulation 2, Rule 2, New Source Review
- BAAQMD, Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- BAAQMD Regulation 6, Rule 1, General Requirements
- BAAQMD Regulation 6, Rule 2, Commercial Cooking Equipment
- BAAQMD Regulation 8, Rule 3, Architectural Coatings
- BAAQMD Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- BAAQMD Regulation 8, Rule 7, Gasoline Dispensing Facilities
- BAAQMD Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)

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[12] BAAQMD. 2019, October 2. West Oakland Community Action Plan.. https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan

[13] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

[14] BAAQMD. 2019, April 16. San Francisco Bay Area Community Health Protection Program. https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en

- BAAQMD Regulation 11, Rule 18, Reduction of Risk from Air Toxic Emissions at Existing Facilities

1.1.4 Plan Bay Area

Plan Bay Area is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. The 2050 blueprint to Plan Bay Area was adopted jointly by the ABAG and MTC in October 2021[15]. The Plan Bay Area 2050 serves as a 30-year plan with 35 new strategies to provide a more equitable and resilient future for residents in the Bay Area. This regional plan aims for more affordable and accessible transportation, which will significantly decrease greenhouse gas emissions to meet the state mandate of a 19 percent reduction in per-capita emissions by 2035.

ENVIRONMENTAL SETTING

1.1.5 San Francisco Bay Area Air Basin

The BAAQMD is the regional air quality agency for the SFBAAB, which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.[16]

1.1.5.1 METEOROLOGY

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits, resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast.

The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

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[15] Metropolitan Transportation Commission and Association of Bay Area Governments. 2021, October. Plan Bay Area 2050 Plan. https://www.planbayarea.org/finalplan2050

[16] This section describing the air basin is from Bay Area Air Quality Management District, 2017, May, Appendix C: Sample Air Quality Setting, in *California Environmental Quality Act Air Quality Guidelines*.

1.1.5.2 WIND PATTERNS

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3:00 p.m. to 4:00 p.m.), compared with only 7 knots at San Jose and less than 6 knots at the Farallon Islands.

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

1.1.5.3 TEMPERATURE

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold water from the ocean bottom along the coast. On summer afternoons the temperatures at the coast can be 35 degrees Fahrenheit (ºF) cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10ºF.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large. The lowest average temperature is reported at 38.1°F in January, and the highest average temperature is 89.3°F in July.[17]

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[16] USA.Com. 2024, May 8 (accessed). Fairfield, CA Weather. http://www.usa.com/fairfield-ca-weather.htm

1.1.5.4 PRECIPITATION

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e. air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, when mixing and ventilation are low and pollutant levels build up. Rainfall historically averages 30.83 inches per year in the project area. [18]

1.1.5.5 WIND CIRCULATION

Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.

1.1.5.6 INVERSIONS

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e. the vertical depth in the atmosphere available for diluting air contaminants near the ground. There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions are more common in the summer and fall, and radiation inversions are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

1.1.6 Existing Ambient Air Quality

1.1.6.1 ATTAINMENT STATUS OF THE SFBAAB

Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme. The attainment status for the air basin is shown in Table 2. The air basin is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

[17] USA.Com. 2024, May 8 (accessed). Fairfield, CA Weather. http://www.usa.com/fairfield-ca-weather.htm

Table 2 Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin

Pollutant	State	Federal[1]
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified/Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Unclassified/Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

Source: California Air Resources Board, 2022, November, October. Area Designations Maps: State and National. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.
[1] Federal designations current as of May 10, 2024.

1.1.6.2 EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements made by the BAAQMD. The BAAQMD monitoring station closest to the project site is the Fairfield-Chadbourne Road Monitoring Station, which monitors O_3. Data from the Vallejo-304 Tuolumne Street Monitoring Station is used to supplement NO_2 and $PM_{2.5}$. Data from this station is summarized in Table 3. The data show occasional violations of the State and federal O_3 standards, as well as the state and federal $PM_{2.5}$ standards. The State and federal CO and NO_2 standards have not been exceeded in the last five years in the vicinity of the project site.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2018	2019	2020	2021	2022
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm	0	0	1	1	0
State & Federal 8-hour ≥ 0.07 ppm	0	0	3	2	0
Maximum 1-Hour Conc. (ppm)	0.078	0.080	0.098	0.093	0.081
Maximum 8-Hour Conc. (ppm)	0.066	0.068	0.081	0.078	0.063
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	0.0574	0.0525	0.0484	0.0405	0.0442
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 μg/m^3	13	0	12	0	0
Maximum 24-Hour Conc. (μg/m^3)	197.2	30.5	152.7	32.0	31.0

Source: California Air Resources Board, 2021, Air Pollution Data Monitoring Cards (2018, 2019, 2020, 2021, and 2022), Accessed May 2, 2024, https://www.arb.ca.gov/adam/topfour/topfour1.php. Data for O_3 from the Fairfield-Chadbourne Road Monitoring Station, while NO_2, and $PM_{2.5}$ data from the taken from Vallejo-304 Tuolumne Street.
Notes: ppm: parts per million; ppb: parts per billion; μg/m3: or micrograms per cubic meter

1.1.6.3 EXISTING EMISSIONS

The project site is currently developed with a middle school, which currently generates criteria air pollutants emissions from energy use, transportation, and area sources.

1.1.7 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population. The nearest sensitive receptors to the project site are the middle school students on project site and the single-family residences along Shasta Drive to the west of the project site.

1.2 METHODOLOGY

The BAAQMD "CEQA Air Quality Guidelines" were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. In June 2010, the BAAQMD's Board of Directors adopted CEQA thresholds of significance and an update of the CEQA Guidelines. In May 2011, the updated BAAQMD CEQA Air Quality Guidelines were amended to include a risk and hazards threshold for new receptors and modified procedures for assessing impacts related to risk and hazard impacts; however, this later amendment regarding risk and hazards was the subject of the December 17, 2015 Supreme Court decision (*California Building Industry Association v BAAQMD*), which clarified that CEQA does not require an evaluation of impacts of the environment on a project.[19]

[19] On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the BAAQMD CEQA Air Quality Guidelines. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. Following the court's order, the BAAQMD released revised CEQA Air Quality Guidelines in May of 2012 that include guidance on calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, and which set aside the significance thresholds. The Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds, and in light of the subsequent case history discussed below, the science and reasoning contained in the BAAQMD 2011 CEQA Air Quality Guidelines provide the latest state-of-the-art guidance available. On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's

1.2.1 Criteria Air Pollutant Emissions

The proposed project qualifies as a project-level project under BAAQMD's criteria. For project-level analyses, BAAQMD has adopted screening criteria and significance criteria that would be applicable to the proposed project. If a project exceeds the screening level, it would be required to conduct a full analysis using BAAQMD's significance criteria.[20]

Regional Significance Criteria

BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4. Criteria for both construction and operational phases of the project are shown.

Table 4 BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds

Pollutant	Construction Phase	Operational Phase	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District, 2023, 2022 California Environmental Quality Act Air Quality Guidelines.

BAAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the Air Basin and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, BAAQMD prepares the Clean Air Plan that details regional programs to attain the AAQS. Mass emissions in Table 4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the Air Basin. The thresholds are based on the trigger levels for the federal New Source Review (NSR) Program. The NSR Program was created to ensure projects are consistent with attainment of health-based federal AAQS. Regional emissions from a single project do not single-handedly trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. Projects that do not exceed the BAAQMD regional significance thresholds in Table 4 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions in Table 4 emissions would cumulatively contribute to the nonattainment status and would contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung

CEQA Guidelines. (*California Building Industry Association versus BAAQMD, Case No. A135335 and A136212 (Court of Appeal, First District, August 13, 2013)*.)

[20] Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act ceqa/updated-ceqa-guidelines.

function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 4 it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above.

BAAQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978. Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the Bay Area exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standard are met in the Air Basin.

Local CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which is 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). However, with the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, BAAQMD does not require a CO hotspot analysis if the following criteria are met:

- Project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g. tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[21]

Odors

BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, Odorous Substances. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public

[21] Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, Appendix A: Threshold of Significance Justification.

Nuisance, which states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. Under BAAQMD's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance. BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[22]

1.2.2 Toxic Air Contaminants

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to the siting of a new source. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*California Building Industry Association v. Bay Area Air Quality Management District [2015] 62 Cal.4th 369 [Case No. S213478]*). CEQA does not require an environmental evaluation to analyze the environmental effects of attracting development and people to an area. However, the environmental evaluation must analyze the impacts of environmental hazards on future users when the proposed project exacerbates an existing environmental hazard or condition or if there is an exception to this exemption identified in the Public Resources Code. Schools, residential, commercial, and office uses do not use substantial quantities of TACs and typically do not exacerbate existing hazards, so these thresholds are typically applied to new industrial projects.

For assessing community risk and hazards, sources within a 1,000-foot radius are considered. Sources are defined as freeways, high volume roadways (with volume of 10,000 vehicles or more per day or 1,000 trucks per day), and permitted sources.[23,24]

The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the surrounding residential receptors. The BAAQMD has adopted screening tables for air toxics evaluation during construction.[25] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site receptors, as applicable.[26]

The project threshold identified below is applied to the proposed project's construction phase emissions:

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22 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

23 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, Appendix A: Threshold of Significance Justification.

24 Bay Area Air Quality Management District. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards.

25 Bay Area Air Quality Management District. 2010. Screening Tables for Air Toxics Evaluations during Construction.

26 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, Appendix A: Threshold of Significance Justification.

Community Risk and Hazards – Project

Project-level construction emissions of TACs or $PM_{2.5}$ from the proposed project to individual sensitive receptors within 1,000 feet of the project site that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- Non-compliance with a qualified Community Risk Reduction Plan;
- An excess cancer risk level of more than 10 in one million, or a non-cancer (i.e. chronic or acute) hazard index greater than 1.0 would be a significant cumulatively considerable contribution;
- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant, cumulatively considerable contribution.[27]

Community Risk and Hazards – Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone.

A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds the following:

- Non-compliance with a qualified Community Risk Reduction Plan; or
- An excess cancer risk levels of more than 100 in one million or a chronic non-cancer hazard index (from all local sources) greater than 10.0; or
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[28]

Current BAAQMD guidance recommends the determination of cancer risks using the Office of Environmental Health Hazard Assessment's (OEHHA) methodology, which was originally adopted in 2003.[29,30] In February 2015, OEHHA adopted new health risk assessment guidance which includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rates.[31] However, BAAQMD has not formally adopted the new OEHHA methodology into their CEQA guidance. To be conservative, the cancer risks associated with project implementation and significance conclusions were determined using the new 2015 OEHHA guidance for risk assessments.

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27 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, Appendix A: Threshold of Significance Justification.

28 Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, Appendix A: Threshold of Significance Justification.

29 Bay Area Air Quality Management District. 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards.

30 Office of Environmental Health Hazard Assessment. 2003. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

31 Office of Environmental Health Hazard Assessment. 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.

2. Greenhouse Gas Emissions

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[32] carbon (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[33, 34] The major GHG are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.
  - ***Chlorofluorocarbons (CFCs***) are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.

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

33 Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (California Air Resources Board (CARB). 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

34 Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/03/WGI_TAR_full_report.pdf.

- ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.
- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.
- ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
- ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs.[35,36]

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR5) GWP values for CH_4, a project that generates 10 MT of CH_4 would be equivalent to 250 MT of CO_2.[37,38]

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[35] Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/03/WGI_TAR_full_report.pdf.

[36] US Environmental Protection Agency (USEPA). 2019. Overview of Greenhouse Gases. http://www3.epa.gov/climatechange/ghgemissions/gases.html.

[37] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

[38] Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.

Table 5 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Carbon Dioxide (CO_2)	Methane[1] (CH_4)	Nitrous Oxide (N_2O)
Second Assessment			
Atmospheric Lifetime (Years)	50 to 200	12 (±3)	120
Global Warming Potential Relative to CO_2[2]	1	21	310
Fourth Assessment			
Atmospheric Lifetime (Years)	50 to 200	12	114
Global Warming Potential Relative to CO_2[2]	1	25	298
Fifth Assessment[3]			
Atmospheric Lifetime (Years)	50 to 200	12	121
Global Warming Potential Relative to CO_2[2]	1	28	265

Source: Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995 https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_sar_wg_I_full_report.pdf; Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/ar4_syr_full_report.pdf; Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press.

Notes:

1 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

2 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.

3 The GWP values in the IPCC's Fifth Assessment Report (2013)[39] reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2.

2.1 CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2022, the statewide GHG emissions inventory was updated for 2000 to 2020 emissions using the GWPs in IPCC's AR4, and reported that California produced 369.2 $MMTCO_2e$ GHG emissions in 2020,[40] which was 35.3 $MMTCO_2e$ lower than 2019 levels and 61.8 $MMTCO_2e$ below the 2020 GHG Limit of 431 $MMTCO_2e$. The 2019 to 2020 decrease in emissions is likely due in large part to the impacts of the COVID-19 pandemic. However, since the peak level in 2004, California's GHG emissions have generally followed a decreasing trend. In 2014, statewide GHG emissions dropped below the 2020 GHG Limit and have remained below the Limit since that time. Per capita GHG emissions in California have dropped from a 2001 peak of 13.8 metric tons per person to 9.3 metric tons per person in 2020, a 33-percent decrease. [41]

California's transportation sector remains the largest generator of GHG emissions, producing 37 percent of the state's total emissions in 2020. Industrial sector emissions made up 20 percent and electric power generation made up 16 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (4 percent), agriculture and forestry (8.6 percent), high-GWP gases (5.8 percent), and recycling and waste (2 percent). [42]

39 Intergovernmental Panel on Climate Change (IPCC). 2013. Fifth Assessment Report: Climate Change 2013. New York: Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_all_final.pdf.

40 California Air Resources Board. 2022, October 26. California Greenhouse Gas 2000-2020 Trends of Emissions and Other Indicators Report. https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf

41 California Air Resources Board. 2022, October 26. California Greenhouse Gas 2000-2020 Trends of Emissions and Other Indicators Report. https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf

42 California Air Resources Board. 2022, October 26. California Greenhouse Gas 2000-2020 Trends of Emissions and Other Indicators Report. https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf

Transportation emissions continued to decline for the past three consecutive years with the rise of fuel efficiency for the passenger vehicle fleet and an increase in battery electric vehicles. The deployment of renewable and less carbon-intensive resources and higher energy efficiency standards have facilitated the continuing decline in fossil fuel electricity generation. The industrial sector trend has been relatively flat in recent years but saw a decrease of 7.1 $MMTCO_2e$ in 2020. Commercial and residential emissions saw a decrease of 1.7 $MMTCO_2e$. Emissions from high-GWP gases have continued to increase as they replace ozone depleting substance (ODS) that are being phased out under the 1987 Montreal Protocol. Emissions from other sectors have remained relatively constant in recent years. Overall trends in the inventory also continue to demonstrate that the carbon intensity of California's economy (i.e., the amount of carbon pollution per million dollars of gross domestic product [GDP]) is declining. From 2000 to 2020, the carbon intensity of California's economy decreased by 49 percent while the GDP increased by 56 percent. [43]

2.2 HUMAN INFLUENCE ON CLIMATE CHANGE

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation.[44] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[45] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[46]

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

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.

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43 California Air Resources Board. 2022, October 26. California Greenhouse Gas 2000-2020 Trends of Emissions and Other Indicators Report. https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf
44 Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.
45 California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature.
46 Intergovernmental Panel on Climate Change (IPCC). 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press.

- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

2.3 POTENTIAL CLIMATE CHANGE IMPACTS FOR CALIFORNIA

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide, average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada.[47] The years from 2014 through 2016 have shown unprecedented temperatures with 2014 being the warmest.[48] By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels. [49]

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[50] Overall, California has become drier over time, with five of the eight years of severe to extreme drought occurring between 2007 and 2016, with unprecedented dry years occurring in 2014 and 2015. [51] Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015.[52] According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 6 and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy.

Table 6 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	Heat waves will be more frequent, hotter, and longer

47 California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.
48 Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.
49 California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.
50 California Climate Action Team (CAT). 2006, March. Climate Action Team Report to Governor Schwarzenegger and the Legislature.
51 Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.
52 Office of Environmental Health Hazards Assessment (OEHHA). 2018, May. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf.

Table 6 Summary of GHG Emissions Risks to California

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

Sources: California Energy Commission (CEC). 2006. Our Changing Climate: Assessing the Risks to California. 2006 Biennial Report. CEC-500-2006-077. California Climate Change Center; California Energy Commission (CEC). 2009, May. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077; California Climate Change Center (CCCC). 2012, July. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California; and California Natural Resources Agency (CNRA). 2014, July. Safeguarding California: Reducing Climate Risk: An Update to the 2009 California Climate Adaptation Strategy. https://resources.ca.gov/CNRALegacyFiles/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf.

2.1 REGULATORY FRAMEWORK

2.1.1 Federal Regulations

The US Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 US Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[53]

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

2.1.1.1 US MANDATORY REPORTING RULE FOR GREENHOUSE GASES (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ or more per year are required to submit an annual report.

2.1.1.2 UPDATE TO CORPORATE AVERAGE FUEL ECONOMY STANDARDS (2021 TO 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026. Under SAFE, the fuel economy standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. However, consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America, and Volkswagen Group of America. The framework supports continued annual reductions of vehicle greenhouse gas emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means that the auto companies party to the voluntary agreement will only sell cars in the United States that meet the CAFE standards established in 2021 for model years 2017 to 2025.[54]

2.1.1.3 EPA REGULATION OF STATIONARY SOURCES UNDER THE CLEAN AIR ACT (ONGOING)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large stationary sources of emissions such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump's Energy Independence

[53] US Environmental Protection Agency (USEPA). 2009, December. EPA: Greenhouse Gases Threaten Public Health and the Environment. Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity. https://archive.epa.gov/epapages/newsroom_archive/newsreleases/08d11a451131bca585257685005bf252.html.

[54] California Air Resources Board (CARB). 2019, September 5 (accessed). California and major automakers reach groundbreaking framework agreement on clean emission standards. https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission.

Executive Order. It officially rescinds the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants.

2.1.2 State Regulations

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

2.1.2.1 EXECUTIVE ORDER S-03-05

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

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

2.1.2.2 ASSEMBLY BILL 32, THE GLOBAL WARMING SOLUTIONS ACT

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

CARB 2008 Scoping Plan

The first Scoping Plan was adopted by CARB on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state (CARB 2008). To effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted May 22, 2014, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 $MMTCO_2e$.[55]

As identified in the Update to the Scoping Plan, California is on track to meet the goals of AB 32. The update also addresses the state's longer-term GHG goals in a post-2020 element. The post-2020 element

[55] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

provides a high-level view of a long-term strategy for meeting the 2050 GHG goal, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.[56] CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit. [57]

2.1.2.3 EXECUTIVE ORDER B-30-15

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

2.1.2.4 SENATE BILL 32 AND ASSEMBLY BILL 197

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

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On December 24, 2017, CARB approved the 2017 Climate Change Scoping Plan Update, which outlines potential regulations and programs, including strategies consistent with AB 197 requirements, to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[58]

California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission vehicle technologies; continued investment in renewables such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands.

[56] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

[57] California Air Resources Board (CARB). 2014, May 15. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm.

[58] California Air Resources Board (CARB). 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten emissions limits for criteria air pollutants and toxic air contaminants on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero-emission (ZE) buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency by 25 percent by 2030 and utilizes near-zero emissions technology and deployment of ZE trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Continued implementation of SB 375.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

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

The Scoping Plan scenario is set against what is called the "business as usual" yardstick—that is, what would the GHG emissions look like if the state did nothing at all beyond the policies that are already required and in place to achieve the 2020 limit, as shown in Table 7. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-

2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

Table 7 2017 Climate Change Scoping Plan Emissions Reductions Gap

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

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

Table 8 provides estimated GHG emissions by sector compared to 1990 levels, and the range of GHG emissions for each sector estimated for 2030.

Table 8 2017 Scoping Plan Emissions Changes by Sector to Achieve the 2030 Target

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

Source: California Air Resources Board. 2017, November. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
[a] Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

2.1.2.5 SENATE BILL 375 – SUSTAINABLE COMMUNITIES STRATEGY

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction in GHG emissions from 2005 by 2020, and 15 percent per capita reduction from 2005 levels by 2035.[59]

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology and recently released another update in February 2018. The updated targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update, while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted sustainable communities strategies (SCS). As proposed, CARB staff's proposed targets would result in an additional reduction of over 8 $MMTCO_2e$ in 2035 compared to the current targets. For the next round of SCS updates, CARB's updated targets for the SCAG region are an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent).[60] CARB adopted the updated targets and methodology on March 22, 2018. All SCSs adopted after October 1, 2018, are subject to these new targets.

2.1.2.6 OTHER APPLICABLE MEASURES

Transportation

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

[59] California Air Resources Board. 2010. Staff Report, Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375, August.

[60] California Air Resources Board (CARB). 2018, February. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. https://www.arb.ca.gov/cc/inventory/data/data.htm.

Executive Order S-1-07

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

Executive Order B-16-2012

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

Renewables Portfolio Standard

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

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

Senate Bill 350

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

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. Additionally, SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply

100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18

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

Energy Efficiency

California Building Standards Code – Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the California Energy Commission [CEC]) in June 1977 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for the consideration and possible incorporation of new energy efficiency technologies and methods.

The 2022 Building Energy Efficiency Standards were adopted on August 11, 2021, and went into effect on January 1, 2023. The 2022 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, strengthen ventilation standards, and more. The 2022 standards require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers.[61]

The CEC is currently developing the final code language for the 2025 Building Energy Efficiency Standards, which are anticipated to be adopted in late 2024. The 2025 Building Energy Efficiency Standards will replace the 2022 Building Energy Efficiency Standards and will become effective on January 1, 2026.

California Green Building Standards Code – CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design

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[61] California Energy Commission (CEC). 2021. Amendments to the Building Energy Efficiency Standards (2022 Energy Code) Draft Environmental Report. CEC-400-2021-077-D.

standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The mandatory provisions of CALGreen became effective January 1, 2011, and were last updated in 2022. The 2022 CALGreen standards became effective on January 1, 2023, and provides updates to the residential and non-residential voluntary measures.

Overall, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. CALGreen contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

2006 Appliance Energy Efficiency Regulations

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

Solid Waste

AB 939

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

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.208 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1327

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

AB 1826

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

Water Efficiency

SBX7-7

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

AB 1881

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

Short-Lived Climate Pollutant Strategy

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.[62] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

2.1.3 Regional Regulations

Plan Bay Area, Strategy for a Sustainable Region

Plan Bay Area 2050 is the Bay Area's RTP/SCS and was adopted jointly by ABAG and MTC on October 2021.[63] The Plan Bay Area 2050 serves as a 30-year plan with 35 new strategies to provide a more equitable and resilient future for residents in the Bay Area. This regional plan aims for more affordable and accessible transportation, which will significantly decrease greenhouse gas emissions to meet the state mandate of a 19 percent reduction in per-capita emissions by 2035.

As part of the implementing framework for Plan Bay Area, local governments have identified Priority Development Areas (PDAs) to focus growth. PDAs are transit-oriented, infill development opportunity areas in existing communities. Overall, well over two-thirds of all regional growth in the Bay Area by 2050 is allocated in PDAs. Per the Final Plan Bay Area 2050, the projected number of new housing units and new jobs within PDAs would increase to 1,672,000 units and 2,561,000 jobs compared to the adopted Plan Bay Area 2040. In addition, its overall share would be increased to 51 percent and 35 percent.[64] However, Plan Bay Area 2050 remains on track to meet a 19 percent per capita reduction of GHG emissions by 2035.[65] The proposed project site is not within a PDA.[66]

Bay Area Clean Air Plan

BAAQMD adopted the 2017 Clean Air Plan, Spare the Air, Cool the Climate on April 19, 2017. The 2017 Clean Air Plan also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.

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62 California Air Resources Board (CARB). 2017, March 14. Final Proposed Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/shortlived.htm.

63 Metropolitan Transportation Commission and Association of Bay Area Governments. 2021, October. Plan Bay Area 2050 Plan. https://www.planbayarea.org/finalplan2050

64 Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2021, October. Plan Bay Area 2050 Plan. https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf.

65 Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2021, October. Plan Bay Area 2050 Plan. https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf.

66 Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2022, January 18 (accessed). Priority Development Areas (Plan Bay Area 2050) ArcGIS. https://www.arcgis.com/apps/mapviewer/index.html?layers=4df9cb38d77346a289252ced4ffa0ca0.

- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.[67]

A comprehensive multipollutant control strategy has been developed to be implemented in the next 3 to 5 years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Bay Area Commuter Benefits Program

Under Air District Regulation 14, Model Source Emissions Reduction Measures, Rule 1, Bay Area Commuter Benefits Program, employers with 50 or more full-time employees within the BAAQMD are required to register and offer commuter benefits to employees. In partnership with the BAAQMD and the Metropolitan Transportation Commission (MTC), the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

2.2 ENVIRONMENTAL SETTING

2.2.1 Existing Emissions

The project site is currently developed with the existing Golden West Middle School. Operation of the school currently generate greenhouse emissions from transportation, area sources, energy use, water use/wastewater generation, and solid waste disposal.

[67] Bay Area Air Quality Management District, 2017. Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed November 21, 2019.

2.3 METHODOLOGY

The BAAQMD 2022 CEQA Guidelines were prepared to assist in the evaluation of GHG emissions impacts of projects and plans proposed within the Bay Area.

2.3.1 BAAQMD Standards of Significance

Cumulative GHG emissions impacts are based on the state's GHG reduction goals for development projects adopted in the BAAQMD CEQA Guidelines.[68] Development of the proposed project would contribute to climate change through direct and indirect emissions of GHG from the construction activities needed to implement the project, which would generate a short-term increase in GHG emissions. BAAQMD identified in their 2022 CEQA Guidelines that projects that implement the following Best Management Practices (BMPs) would contribute their fair of what will be required to achieve the state's long-term climate goals, as described below:

A. Projects must include, at a minimum, the following project design elements; OR

1. Buildings

   a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).

   b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

2. Transportation

   a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

   b. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

BAAQMD does not have thresholds of significance for construction related GHG emissions, which are one-time, short-term emissions and therefore would not significantly contribute to the long-term cumulative GHG emissions impacts of the proposed project.

[68] Bay Area Air Quality Management District, 2023, California Environmental Quality Act Air Quality Guidelines, https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act ceqa/updated-ceqa-guidelines

Assumptions Worksheet

CalEEMod Inputs- Travis USD Golden West Middle School Expansion Project, Construction

Name:	Travis USD Golden West Middle School Expansion Project, Construction
Project Number:	TRAV-01
Project Location:	2651 De Ronde Drive, Fairfield, CA
County/Air Basin:	Solano County
Climate Zone:	4
Land Use Setting:	Urban
Operational Year:	2025
Utility Company:	Marin Clean Energy (MCE)
Air Basin:	SFAAB
Air District:	BAAQMD

Project Site Acreage	13.88
Disturbed Site Acreage	3.70
Net Increase In Student Capacity	450

Demolition	***SQFT***	***Amount of Debris***
Building Demolition (tons)	2,060	95
Asphalt Demolition (Tons)	43,500	644
Project Components	**SQFT**	**Acres**
Construction		
Building Area Phase 1		
Building 1	6,860	0.16
Building 2	4,800	0.11
Building 3	2,880	0.07
Building 4	3,480	0.08
TOTAL	**18,020**	**0.41**
Building Area Phase 2		
Admin/Multiuse Building	**16,500**	**0.38**
Surface Work		
Parking Lot	11,600	0.27
Asphalt Surfaces[1]	66,700	1.53
Landscaping	5,000	0.11
Hardscape[2]	40,000	0.92
Remaining Area	3,352	0.08
	TOTAL ACREAGE	**3.70**

Land Use Type	**Land Use Subtype**	**Unit Amount**	**Size Metric**	**Lot Acreage**	**Land Use Square Feet**	**Landscaping Square Feet**
Educational	Junior High School	450.00	student	0.79	34,520	-
Parking	Parking Lot	11.60	1000 sqft	0.27	11,600	-
Parking	Other Asphalt Surfaces	66.70	1000 sqft	1.53	66,700	-
Parking	Other Non-Asphalt Surfaces	48.35	1000 sqft	1.11	48,352	5,000
				3.70		

Demolition

Component	Amount to be Demolished	Haul Truck Capacity	Haul Distance (miles)	Total Trip Ends	Duration (days)	Trip Ends Per Day
Phase 2 Building Demolition Haul (tons)	95	20	20	24	21	2
Phase 1 Asphalt Demolition Haul (tons)	644	20	20	65	20	4
Total				89		

Soil Haul [1]

Construction Activities	Volume (CY)	Haul Truck Capacity (cy)	Haul Distance (miles)	Total Trip Ends	Duration (days)	Trip Ends per Day
Site Preparation Export	500	40	0.25	25	5	5
Rough Grading Export	5,000	40	0.25	250	8	32
Fine Grading Import	1,000	40	0.25	50	8	7

adjacent property .25 miles away

40 cy from district

Architectural Coating

	Percent Painted
Interior Painted:	100%
Exterior Painted:	100%

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
Non-Residential Structures					
Phase 1 Buildings	18,020	2.0	36,040	27,030	9,010
Phase 2 Building	16,500	2.0	33,000	24,750	8,250
			69,040	**51,780**	**17,260**
Parking					
Parking Lot	11,600	6%	696	-	696
Asphalt Surfaces	66,700	6%	4,002	-	4,002
			4,698		4,698

Notes

[1] CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2] The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user.

[3] Assumes that all parking and non-parking asphalt will be striped. CalEEMod methodology assumes 6% of surface area is striped.

Construction Mitigation

SCAQMD Rule 403

Replace Ground Cover	PM10:	5	% Reduction
	PM25:	5	% Reduction
Water Exposed Area	Frequency:	2	per day
	PM10:	61	% Reduction
	PM25:	61	% Reduction
Unpaved Roads	Vehicle Speed:	25	mph
SCAQMD Rule 1186			
	Clean Paved Road	9	% PM Reduction

Building Demolition Haul Trip Calculation

*Conversion factors**

0.046	ton/SF	Building Debris
2.0	CY/ton	Building Debris
1.2641662	tons/cy	Soil
20	tons	Truck Capacity in tons
16	CY	Truck Capacity in CY
0.791035229	CY/ton	Soil

Building	BSF Demo	Tons/SF	Tons	CY of Building Materials	Haul Truck (CY)	Round Trips	Total Trip Ends
Building Demolition	2,060	0.046	95	190	16	12	24
	2,060						

*CalEEMod User's Guide Version 2022, Appendix C

Pavement Volume to Weight Conversion

Component	Total SF of Area[1]	Assumed Thickness (foot)[2]	Debris Volume (cu. ft)	Weight of Crushed Asphalt (lbs/cf)[3]	AC Mass (lbs)	AC Mass (tons)
Asphalt Demolition	43,500	0.333	14,500	89	1,288,889	644.44
Total	43,500					644

[1] Based on aerial image of existing project site.

[2] Pavements and Surface Materials. Nonpoint Education for Municipal Officials, Technical Paper Number 8. University of Connecticut Cooperative Extension System, 1999.

[3] https://www.delmar.ca.us/DocumentCenter/View/5668/CalRecycle-Conversion-Table

Construction Activities and Schedule Assumptions

* based on schedule provided by District

		CalEEMod Default Construction Schedule		
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Phase 1				
Phase 1 Asphalt Demolition and Debris Haul	Demolition	4/1/2025	4/28/2025	20
Phase 1 Asphalt Demolition Debris Onsite Reprocessing	Demolition	4/1/2025	4/28/2025	20
Phase 1 Site Preparation and Soil Export	Site Preparation	4/24/2025	4/30/2025	5
Phase 1 Rough Grading and Soil Export	Grading	5/1/2025	5/12/2025	8
Phase 1 Fine Grading and Soil Import	Grading	5/13/2025	5/22/2025	8
Phase 1 Utility Trenching[1]	Trenching	5/23/2025	5/29/2025	5
Phase 1 Building Construction[2]	Building Construction	5/30/2025	7/31/2025	45
Phase 1 Asphalt Paving[3]	Asphalt Paving	7/18/2025	7/31/2025	10
Phase 1 Architectural Coating[4]	Architectural Coating	8/1/2025	8/14/2025	10
Phase 1 Finishing/Landscaping[1,5]	Trenching	8/8/2025	8/14/2025	5
Phase 2				
Phase 2 Building Demolition and Debris Haul	Demolition	8/15/2025	9/11/2025	20
Phase 2 Building Demolition Debris Onsite Reprocessing	Demolition	8/15/2025	9/11/2025	20
Phase 2 Building Construction	Building Construction	9/12/2025	7/30/2026	230
Phase 2 Paving	Paving	7/7/2026	7/30/2026	18
Phase 2 Architectural Coating	Architectural Coating	7/7/2026	7/30/2026	18
Phase 2 Finishing/Landscaping	Trenching	7/24/2026	7/30/2026	5

Notes

1 Assumes 5 days for trenching and finishing and landscaping, based on projects of similar scale

2 Based on construction duration data from the District

3 Assumes similar duration to architectural coating, based on CalEEMod default duration

4 Assumes architectural coating duration will be 20 percent of the building construction duration based on CalEEMod assumptions. See CalEEMod Appendix C

5 Overlapping finishing/landscaping activities with architectural coating for most conservative emissions estimate

Normalization Calculations (Phase 2)

CalEEMod Defaults Construction Duration	
349	days of construction
0.96	years of construction
11.47	months of construction

Assumed Construction Duration	
8/15/2025	8/15/2026
365	days
12.00	months
Norm Factor: 1.05	

		CalEEMod Overlapping Construction Schedule		
Construction Activities	**Phase Type**	**Start Date**	**End Date**	**CalEEMod Duration (Workday)**
Phase 1				
Asphalt Demolition and Debris Haul and Onsite Reprocessing		4/1/2025	4/23/2025	17
Asphalt Demolition Debris Onsite Reprocessing | Site Preparation and Soil Export		4/24/2025	4/28/2025	3
Site Preparation and Soil Export		4/29/2025	4/30/2025	2
Rough Grading and Soil Export		5/1/2025	5/12/2025	8
Fine Grading and Soil Import		5/13/2025	5/22/2025	8
Utility Trenching		5/23/2025	5/29/2025	5
Building Construction		5/30/2025	7/20/2025	36
Building Construction | Asphalt Paving		7/21/2025	7/31/2025	9
Architectural Coating		8/1/2025	8/6/2025	4
Architectural Coating | Finishing/Landscaping		8/7/2025	8/13/2025	5
Phase 2				
Building Demolition, Debris Haul, and Onsite Reprocessing		8/15/2025	9/12/2025	21
Building Construction		9/13/2025	8/15/2026	240
Paving		7/21/2026	8/15/2026	19
Architectural Coating		7/21/2026	8/15/2026	19
Finishing/Landscaping		8/10/2026	8/15/2026	5

CalEEMod Construction Off-Road Equipment Inputs

Source: CalEEMod defualts (except where noted).

Construction Equipment Details					
Equipment	**# of Equipment**	**hr/day**	**hp**	**load factor***	**total trips per day**
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing					
Concrete/Industrial Saws	1	8	33	0.73	
Excavators	3	8	36	0.38	
Rubber Tired Dozers	2	8	367	0.4	
Crushing/Proc.Equipment	1	8	12	0.85	
Worker Trips					18
Vendor Trips					2
Hauling Trips					4
Water Trucks		Acres Disturbed:	1		6
		Onsite Travel (mi/day)	0.83		
Phase 1 Site Preparation and Soil Export					
Rubber Tired Dozers	3	8	367	0.4	
Tractors/Loaders/Backhoes	4	8	84	0.37	
Worker Trips					18
Vendor Trips					1
Hauling Trips					5
Water Trucks		Acres Disturbed:	3.5		18
		Onsite Travel (mi/day)	2.89		
Phase 1 Rough Grading and Soil Export					
Excavators	1	8	36	0.38	
Graders	1	8	148	0.41	
Rubber Tired Dozers	1	8	367	0.4	
Tractors/Loaders/Backhoes	3	8	84	0.37	
Worker Trips					15
Vendor Trips					3
Hauling Trips					32
Water Trucks		Acres Disturbed:	2.5		14
		Onsite Travel (mi/day)	2.06		

Phase 1 Fine Grading and Soil Export					
Excavators	1	8	36	0.38	
Graders	1	8	148	0.41	
Rubber Tired Dozers	1	8	367	0.4	
Tractors/Loaders/Backhoes	3	8	84	0.37	
Worker Trips					15
Vendor Trips					3
Hauling Trips					7
Water Trucks		Acres Disturbed:	2.5		14
		Onsite Travel (mi/day)	2.06		
Utilities Trenching*					
Excavator	1	8	36	0.38	
Worker Trips					3
Vendor Trips					0
Hauling Trips					0

Notes:

[1] Using Generator Set as proxy

Building Construction					
Cranes	1	7	367	0.29	
Forklifts	3	8	82	0.2	
Generator Sets	1	8	14	0.74	
Tractors/Loaders/Backhoes	3	7	84	0.37	
Welders	1	8	46	0.45	
Worker Trips					8
Vendor Trips					3
Hauling Trips					0

Building Construction Trips Calculations - Phase 1

Building Area	Unit	CalEEMod Worker Trips Rate	Worker Trips	CalEEMod Vendor Trips Rate	Vendor
18	1000sqft	0.42	8	0.1639	3

Paving					
Cement and Mortar Mixers	2	6	10	0.56	
Pavers	1	8	81	0.42	
Paving Equipment	2	6	89	0.36	
Rollers	2	8	36	0.38	
Tractors/Loaders/Backhoes	1	8	84	0.37	
Worker Trips					20
Vendor Trips					2
Hauling Trips					0
Architectural Coating					
Air Compressors	1	6	37	0.48	
Worker Trips					2
Vendor Trips					0
Hauling Trips					0
Finishing and Landscaping					
Excavator	1	8	36	0.38	
Worker Trips					3
Vendor Trips					0
Hauling Trips					0

Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day)[1]	Water Truck Capacity (gallons)[2]
10,000	4,000

Notes:

[1] Based on data provided in Guidance for Application for Dust Control Permit

Maricopa County Air Quality Department. 2005, June. Guidance for Application of Dust Control Permit. https://www.epa.gov/sites/default/files/2019-04/documents/mr_guidanceforapplicationfordustcontrolpermit.pdf)

[2] Based on standard water truck capacity:

McLellan Industries. 2022, January (access). Water Trucks. https://www.mclellanindustries.com/trucks/water-trucks/

[3]

Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.

CalEEMod Construction Off-Road Equipment Inputs

Source: CalEEMod defualts (except where noted).

Construction Equipment Details					
Equipment	**# of Equipment**	**hr/day**	**hp**	**load factor***	**total trips per day**
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing					
Concrete/Industrial Saws	1	8	33	0.73	
Excavators	3	8	36	0.38	
Rubber Tired Dozers	2	8	367	0.4	
Crushing/Proc.Equipment	1	8	12	0.85	
Worker Trips					18
Vendor Trips					2
Hauling Trips					4
Water Trucks		Acres Disturbed:	1		6
		Onsite Travel (mi/day)	0.83		

Notes:

[1] Adding in crushing equipment to account for onsite reprocessing activities

Utilities Trenching*					
Excavator	1	8	36	0.38	
Worker Trips					3
Vendor Trips					0
Hauling Trips					0

Notes:

[1] Using Generator Set as proxy

Building Construction					
Cranes	1	7	367	0.29	
Forklifts	3	8	82	0.2	
Generator Sets	1	8	14	0.74	
Tractors/Loaders/Backhoes	3	7	84	0.37	
Welders	1	8	46	0.45	
Worker Trips					7
Vendor Trips					3
Hauling Trips					0

Building Construction Trips Calculations - Phase 2

Building Area	Unit	CalEEMod Worker Trips Rate	Worker Trips	CalEEMod Vendor Trips Rate	Vendor
16.5	1000sqft	0.42	7	0.1639	3

Paving					
Cement and Mortar Mixers	2	6	10	0.56	
Pavers	1	8	81	0.42	
Paving Equipment	2	6	89	0.36	
Rollers	2	8	36	0.38	
Tractors/Loaders/Backhoes	1	8	84	0.37	
Worker Trips					20
Vendor Trips					2
Hauling Trips					0
Architectural Coating					
Air Compressors	1	6	37	0.48	
Worker Trips					1
Vendor Trips					0
Hauling Trips					0
Finishing and Landscaping					
Excavator	1	8	36	0.38	
Worker Trips					3
Vendor Trips					0
Hauling Trips					0

Water Truck Vendor Trip Calculation

Amount of Water (gal/acre/day)[1]	Water Truck Capacity (gallons)[2]
10,000	4,000

Notes:

[1] Based on data provided in Guidance for Application for Dust Control Permit

Maricopa County Air Quality Department. 2005, June. Guidance for Application of Dust Control Permit. https://www.epa.gov/sites/default/files/2019-04/documents/mr_guidanceforapplicationfordustcontrolpermit.pdf)

[2] Based on standard water truck capacity:

McLellan Industries. 2022, January (access). Water Trucks. https://www.mclellanindustries.com/trucks/water-trucks/

[3]

Assumes that dozers, tractors/loaders/backhoes, and graders can disturb 0.50 acres per day and scrapers can disturb 1 acre per day.

CalEEMod Inputs- Travis USD Golden West Middle School Expansion Project, Operation

Name:	Travis USD Golden West Middle School Expansion Project, Operation
Project Number:	TRAV-01
Project Location:	2651 De Ronde Drive, Fairfield, CA
County/Air Basin:	Solano County
Climate Zone:	4
Land Use Setting:	Urban
Operational Year:	2025
Utility Company:	Marin Clean Energy (MCE)
Air Basin:	SFAAB
Air District:	BAAQMD

CalEEMod Land Use Inputs

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Land Use Square Feet	Land Use Square Feet
Educational	Junior High School	450.00	student	0.79	34,520	-
Parking	Parking Lot	11.60	1000 sqft	0.27	11,600	-
Parking	Other Asphalt Surfaces	66.70	1000 sqft	1.53	66,700	-
Parking	Other Non-Asphalt Surfaces	48.35	1000 sqft	1.11	48,352	5,000
				3.70		

Trips (Average Daily)

Land Use Type	Average Daily Trips	CalEEMod Trip Rate	Saturday Trips	CalEEMod Trip Rate	Sunday Trips	CalEEMod Trip Rate
Junior High School	950	**2.11**	0	**0.00**	0	**0.00**

Source: Garland and Associates. 2024. Traffic/Transportation Impact Analysis For The Proposed Golden West Middle School Expansion Travis Unified School District - FairfieldProject.

Water Use (CalEEMod Defaults)

	Indoor (gpy)	Outdoor (gpy)	Total
Proposed Project Water Use[1]	1,090,908.00	61,141.02	1,152,049.02

Notes

1 Assumes 100% aerobic treatment.

Solid Waste (CalEEMod Defaults)

Land Use	Total Solid Waste (tons/student/yr)[3]	Total Solid Waste (tons/yr)
Solid Waste	0.18	82.13

Net New Electricity (Buildings)

CalEEMod Energy Use

Land Use Subtype	Total Annual Electricity Consumption (kWh/year)	Total Annual Natural Gas Consumption (kBTU/year)	Title-24 Electricity Energy Intensity (kWhr/size/year)*	Title-24 Natural Gas Energy Intensity (KBTU/size/year)*	Nontitle-24 Electricity Energy Intensity (kWhr/size/year)	Nontitle-24 Natural Gas Energy Intensity (KBTU/size/year)
Junior High School	158,211.90	1,491,546.67	**126,967.91**	**1,478,135.79**	31,243.99	13,410.88
Parking Lot	10,161.60	0.00	**10,161.60**	**0.00**	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	**0.00**	**0.00**	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	**0.00**	**0.00**	0.00	0.00
Total	**168,373.50**	**1,491,546.67**				

Converting Natural Gas Consumption to Electricity Consumption for All-Electric Buildings

Land Use Subtype	Title-24 Natural Gas Energy Intensity (KBTU/size/year)	Converted Title-24 Energy Intensity (kWh/size/year)*	Nontitle-24 Natural Gas Energy Intensity (KBTU/size/year)	Converted Nontitle-24 Energy Intensity (kWh/size/year)*
Junior High School	**1,491,546.67**	**437,147.32**	13,410.88	3,930.50
Parking Lot	**0.00**	**0.00**	0.00	0.00
Other Asphalt Surfaces	**0.00**	**0.00**	0.00	0.00
Other Non-Asphalt Surfaces	**0.00**	**0.00**	0.00	0.00

*Assumes 3.412 kBTU per kWh.

Source: EIA. 2023. Units and calculators explained British thermal units (Btu). https://www.eia.gov/energyexplained/units-and-calculators/british-thermal-units.php.

Adjusted CalEEMod Energy Use

Land Use Subtype	Total Annual Electricity Consumption (kWh/year)	Total Annual Natural Gas Consumption (kBTU/year)	Title-24 Electricity Energy Intensity (kWhr/size/year)	Title-24 Natural Gas Energy Intensity (KBTU/size/year)	Nontitle-24 Electricity Energy Intensity (kWhr/size/year)	Nontitle-24 Natural Gas Energy Intensity (KBTU/size/year)
Junior High School	599,289.73	0.00	**564,115.23**	**0.00**	35,174.49	0.00
Parking Lot	10,161.60	0.00	**10,161.60**	**0.00**	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	**0.00**	**0.00**	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	**0.00**	**0.00**	0.00	0.00

Architectural Coating

	Percent Painted
Interior Painted:	100%
Exterior Painted:	100%

Rule 1113

Interior Paint VOC content:	50	grams per liter
Exterior Paing VOC content:	50	grams per liter

Structures	Land Use Square Feet	CalEEMod Factor[2]	Total Paintable Surface Area	Paintable Interior Area[1]	Paintable Exterior Area[1]
Residential Structures					
Phase 1 Buildings	18,020	2.0	36,040	27,030	9,010
Phase 2 Building	16,500	2.0	33,000	24,750	8,250
			69,040	**51,780**	**17,260**
Striping					
Parking Lot	11,600	6%	696	-	696
Asphalt Surfaces	66,700	6%	4,002	-	4,002
			4,698		4,698

[1]CalEEMod methodology calculates the paintable interior and exterior areas by multiplying the total paintable surface area by 75 and 25 percent, respectively.

[2] The program assumes the total surface for painting equals 2.7 times the floor square footage for residential and 2 times that for nonresidential square footage defined by the user.

[3] Assumes that bridge, roadway, parkinglot, and basketball court will be striped. CalEEMod methodology assumes 6% of surface area is striped.

Pacific Gas and Electric Carbon Intensity Factors

Forecasted Year	2026	
CO_2:[1,2]	203.98	pounds per megawatt hour
CH_4:[3]	0.033	pound per megawatt hour
N_2O:[3]	0.004	pound per megawatt hour

Changes to the CalEEMod Defaults - Fleet Mix 2025

Trips 950

Default	HHD	LDA	LDT1	LDT2	LHD1	LHD2	MCY	MDV	MH	MHD	OBUS	SBUS	UBUS	
FleetMix (Model Default Percentage	1.211435255	52.43058205	4.164070264	20.00892162	2.912981622	0.744298985	2.618359029	13.95274997	0.398433022	1.233498007	0.109350402	0.153065496	0.062253099	100.00
FleetMix (Converted)	0.012114353	0.52430582	0.041640703	0.200089216	0.029129816	0.00744299	0.02618359	0.1395275	0.00398433	0.01233498	0.001093504	0.001530655	0.000622531	100%
Trips	12	498	40	190	28	7	25	133	4	12	1	1	1	950
Percent		79%			7%			14%						100%
without buses/MH	0.012114	0.524306	0.041641	0.200089	0.029130	0.007443	0.026184	0.139527	0.000000	0.012335	0.000000	0.001531	0.000000	99%
Percent		79%			6%			14%						99%
Adjusted without buses/MH	0.013218	0.524306	0.041641	0.200089	0.031784	0.008121	0.028570	0.139527	0.000000	0.013459	0.000000	0.001670	0.000000	
Percent adjusted		79%			7%			14%						100%
Assumed Mix		97.0%			1.00%			2.00%						100%
Adjusted with Assumed Mix Percentage	0.001937	0.640037	0.050832	0.244255	0.004657	0.001190	0.034876	0.020000	0.000000	0.001972	0.000000	0.000245	0.000000	100%
Adjusted CalEEMod Input	**0.193666**	**64.003673**	**5.083213**	**24.425525**	**0.465684**	**0.118987**	**3.487590**	**2.000000**	**0.000000**	**0.197193**	**0.000000**	**0.024470**	**0.000000**	
Percent Check:		97%			1%			2%						
Trips	2	608	48	232	4	1	33	19	0	2	0	0	0	950
		922			*60*			*19*						

Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.

Emissions Worksheet

Regional Construction Emissions

Annual Average Emissions with Best Control Measures for Fugitive Dust and Tier 4 Engines

No. of Construction Days:

Year	Start	End	Workdays
2025	4/1/2025	12/31/2025	197
2026	1/1/2026	8/15/2026	162
Entire	4/1/2025	8/15/2026	359

Emissions by Year (tons/year)[1]

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2025	1.0655	0.8923	2.535945946	0.172432432	0.1824	0.3091	0.377162162	0.1824	0.2436	0.3117568
2026	0.1200	0.7900	1.27	0.005	0.0100	0.0100	0.02	0.0100	0.0050	0.01
Total	**1.1855**	**1.6823**	**3.805945946**	**0.177432432**	**0.1924**	**0.3191**	**0.397162162**	**0.1924**	**0.2486**	**0.3217568**

Average Daily Emissions (lbs/day)

Annual emissions divided by total construction duration to obtain average daily emissions. Average construction emissions accounts for the duration of each construction phase and the time each piece of construction equipment is onsite.

	ROG	NOx	CO	SO2	Exhaust PM10	Fugitive PM10	PM10 Total	Exhaust PM2.5	Fugitive PM2.5	PM2.5 Total
2025	10.8177	9.0589	25.74564412	1.75058307	1.8521	3.1376	3.829057484	1.8521	2.4736	3.1650432
2026	1.4815	9.7531	15.67901235	0.061728395	0.1235	0.1235	0.24691358	0.1235	0.0617	0.1234568
Total	**6.6047**	**9.3721**	**21.20304148**	**0.988481518**	**1.0720**	**1.7775**	**2.212602575**	**1.0720**	**1.3852**	**1.7925168**
BAAQMD Average Daily Threshold	54	54	NA	NA	82	BMPs	NA	54	BMPs	NA
Exceed Average Daily Thresholds?	No	No	NA	NA	No	NA	NA	No	NA	NA

Notes

1 Modeling considers disturbance of 3.70 acres. Site preparation and grading emissions have been multiplied by an adjustment factor of 1.54 (5.7 acres/3.7 acres = 1.54) to account for the additional 2 acres parcel where fill would be placed.

Regional Operational Emissions Worksheet

Proposed

Annual (tons/yr)

	ROG	NOx	PM10 Total	PM2.5 Total
Mobile	0.44	0.20	0.48	0.12
Area	0.18	0.01	0.01	0.01
Energy	0.00	0.00	0.00	0.00
Total	**0.62**	**0.21**	**0.49**	**0.13**
BAAQMD Threshold	**10**	**10**	**15**	**10**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Average Daily (pounds/day)

	ROG	NOx	PM10 Total	PM2.5 Total
Mobile	2.41	1.10	2.63	0.66
Area	0.99	0.03	0.03	0.03
Energy	0.00	0.00	0.00	0.00
Total	**3.40**	**1.12**	**2.66**	**0.68**
BAAQMD Threshold	**54**	**54**	**82**	**54**
Exceeds Threshold?	**No**	**No**	**No**	**No**

GHG Emissions Worksheet

Construction

	MTons Total
2025	267
2026	201
Total Construction	**468**
30-Year Amortization[1]	**16**

Notes

1

Total construction emissions are amortized over 30 years per BAAQMD methodology

International Energy Agency, 2008. Energy Efficiency Requirements in Building Codes, Energy Efficiency Policies for New Buildings. https://iea.blob.core.windows.net/assets/3783f5e8-b14c-4c18-b04c-aab7c59d6e92/Building_Codes.pdf.

CalEEMod Outputs

Travis USD Golden West Middle School Expansion Project Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Travis USD Golden West Middle School Expansion Project
Construction Start Date	4/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	5.70
Precipitation (days)	2.20
Location	2651 De Ronde Dr, Fairfield, CA 94533, USA
County	Solano-San Francisco
City	Fairfield
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	841
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.23

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

Junior High School	450	Student	0.79	34,520	0.00	0.00	—	—
Parking Lot	11.6	1000sqft	0.27	0.00	0.00	—	—	—
Other Asphalt Surfaces	66.7	1000sqft	1.53	0.00	0.00	—	—	—
Other Non-Asphalt Surfaces	48.4	1000sqft	1.11	0.00	5,000	—	—	—

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.	35.4	35.1	29.0	96.6	0.09	0.90	10.1	11.0	0.75	4.30	5.04	—	10,144	10,144	0.40	0.24	3.89	10,229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.35	0.34	8.87	14.6	0.02	0.09	0.08	0.17	0.08	0.02	0.10	—	2,536	2,536	0.10	0.03	0.01	2,548
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.05	4.61	5.42	14.0	0.01	0.13	0.42	0.55	0.11	0.14	0.25	—	1,605	1,605	0.06	0.03	0.21	1,615
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.74	0.84	0.99	2.55	< 0.005	0.02	0.08	0.10	0.02	0.03	0.05	—	266	266	0.01	< 0.005	0.03	267

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	35.4	35.1	29.0	96.6	0.09	0.90	10.1	11.0	0.75	4.30	5.04	—	10,144	10,144	0.40	0.24	3.89	10,229
2026	0.65	9.71	16.7	25.3	0.04	0.23	0.29	0.52	0.22	0.07	0.28	—	4,269	4,269	0.17	0.06	1.35	4,292
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.35	0.34	8.87	14.6	0.02	0.09	0.08	0.17	0.08	0.02	0.10	—	2,536	2,536	0.10	0.03	0.01	2,548
2026	0.35	0.34	8.87	14.6	0.02	0.09	0.08	0.17	0.08	0.02	0.10	—	2,533	2,533	0.10	0.03	0.01	2,545
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.05	4.61	5.42	14.0	0.01	0.13	0.42	0.55	0.11	0.14	0.25	—	1,605	1,605	0.06	0.03	0.21	1,615
2026	0.17	0.64	4.30	6.98	0.01	0.05	0.05	0.09	0.04	0.01	0.05	—	1,209	1,209	0.05	0.02	0.10	1,215
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.74	0.84	0.99	2.55	< 0.005	0.02	0.08	0.10	0.02	0.03	0.05	—	266	266	0.01	< 0.005	0.03	267
2026	0.03	0.12	0.79	1.27	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	200	200	0.01	< 0.005	0.02	201

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.	4.04	4.67	1.36	22.7	0.04	0.02	3.68	3.70	0.02	0.93	0.95	46.6	4,082	4,129	4.73	0.15	14.3	4,307

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.65	4.27	1.68	22.1	0.03	0.02	3.68	3.70	0.02	0.93	0.95	46.6	3,810	3,857	4.78	0.18	0.50	4,030
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.69	3.38	1.09	15.3	0.02	0.02	2.62	2.64	0.01	0.66	0.68	46.6	2,850	2,897	4.68	0.12	4.51	3,055
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.49	0.62	0.20	2.79	< 0.005	< 0.005	0.48	0.48	< 0.005	0.12	0.12	7.71	472	480	0.77	0.02	0.75	506

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	3.77	3.57	1.34	21.2	0.04	0.02	3.68	3.70	0.02	0.93	0.95	—	3,731	3,731	0.24	0.14	14.2	3,794
Area	0.27	1.10	0.01	1.50	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.17	6.17	< 0.005	< 0.005	—	6.20
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	341	341	0.06	0.01	—	344
Water	—	—	—	—	—	—	—	—	—	—	—	2.33	4.12	6.45	0.01	0.01	—	8.21
Waste	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	4.04	4.67	1.36	22.7	0.04	0.02	3.68	3.70	0.02	0.93	0.95	46.6	4,082	4,129	4.73	0.15	14.3	4,307
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.65	3.42	1.68	22.1	0.03	0.02	3.68	3.70	0.02	0.93	0.95	—	3,465	3,465	0.29	0.17	0.37	3,523
Area	—	0.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	341	341	0.06	0.01	—	344
Water	—	—	—	—	—	—	—	—	—	—	—	2.33	4.12	6.45	0.01	0.01	—	8.21
Waste	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	3.65	4.27	1.68	22.1	0.03	0.02	3.68	3.70	0.02	0.93	0.95	46.6	3,810	3,857	4.78	0.18	0.50	4,030
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.56	2.40	1.09	14.6	0.02	0.01	2.62	2.64	0.01	0.66	0.67	—	2,502	2,502	0.19	0.11	4.37	2,544
Area	0.13	0.97	0.01	0.74	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.04	3.04	< 0.005	< 0.005	—	3.06
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	341	341	0.06	0.01	—	344
Water	—	—	—	—	—	—	—	—	—	—	—	2.33	4.12	6.45	0.01	0.01	—	8.21
Waste	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	2.69	3.38	1.09	15.3	0.02	0.02	2.62	2.64	0.01	0.66	0.68	46.6	2,850	2,897	4.68	0.12	4.51	3,055
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.47	0.44	0.20	2.66	< 0.005	< 0.005	0.48	0.48	< 0.005	0.12	0.12	—	414	414	0.03	0.02	0.72	421
Area	0.02	0.18	< 0.005	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.50	0.50	< 0.005	< 0.005	—	0.51
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	56.4	56.4	0.01	< 0.005	—	56.9
Water	—	—	—	—	—	—	—	—	—	—	—	0.39	0.68	1.07	< 0.005	< 0.005	—	1.36
Waste	—	—	—	—	—	—	—	—	—	—	—	7.33	0.00	7.33	0.73	0.00	—	25.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	0.49	0.62	0.20	2.79	< 0.005	< 0.005	0.48	0.48	< 0.005	0.12	0.12	7.71	472	480	0.77	0.02	0.75	506

3. Construction Emissions Details

3.1. Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing (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	34.5	34.3	12.8	66.3	0.03	0.79	—	0.79	0.63	—	0.63	—	3,503	3,503	0.14	0.03	—	3,515
Demolition	—	—	—	—	—	—	0.50	0.50	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	4.54	4.54	< 0.005	< 0.005	0.01	4.77
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.89	1.88	0.70	3.63	< 0.005	0.04	—	0.04	0.03	—	0.03	—	192	192	0.01	< 0.005	—	193
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.25	0.25	< 0.005	< 0.005	< 0.005	0.26
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.34	0.13	0.66	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.8	31.8	< 0.005	< 0.005	—	31.9
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.08	0.07	0.04	0.71	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.64	159
Vendor	0.02	0.01	0.28	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	214	214	0.01	0.03	0.57	224
Hauling	0.02	0.01	0.35	0.12	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	282	282	0.01	0.05	0.63	296
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.03	8.03	< 0.005	< 0.005	0.02	8.15
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.7	11.7	< 0.005	< 0.005	0.01	12.2
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.01	16.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.33	1.33	< 0.005	< 0.005	< 0.005	1.35
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.94	1.94	< 0.005	< 0.005	< 0.005	2.03
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.56	2.56	< 0.005	< 0.005	< 0.005	2.68

3.3. Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing (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	34.5	34.3	12.8	66.3	0.03	0.79	—	0.79	0.63	—	0.63	—	3,503	3,503	0.14	0.03	—	3,515
Demolition	—	—	—	—	—	—	0.07	0.07	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	4.54	4.54	< 0.005	< 0.005	0.01	4.77

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.99	1.97	0.73	3.81	< 0.005	0.05	—	0.05	0.04	—	0.04	—	202	202	0.01	< 0.005	—	202
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.28
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.36	0.13	0.70	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.4	33.4	< 0.005	< 0.005	—	33.5
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.04	0.71	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.64	159
Vendor	0.02	0.01	0.28	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	214	214	0.01	0.03	0.57	224
Hauling	0.01	< 0.005	0.17	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	141	141	0.01	0.02	0.31	148
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.43	8.43	< 0.005	< 0.005	0.02	8.56
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.3	12.3	< 0.005	< 0.005	0.01	12.9
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.10	8.10	< 0.005	< 0.005	0.01	8.51

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.40	1.40	< 0.005	< 0.005	< 0.005	1.42
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.04	2.04	< 0.005	< 0.005	< 0.005	2.13
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.34	1.34	< 0.005	< 0.005	< 0.005	1.41

3.5. Phase 1 Site Preparation and Soil Export (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	0.64	0.64	14.7	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	1.07	1.07	< 0.005	0.11	0.11	—	11.6	11.6	< 0.005	< 0.005	0.02	12.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.20	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	72.5	72.5	< 0.005	< 0.005	—	72.8
Dust From Material Movement	—	—	—	—	—	—	0.11	0.11	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.16	0.16	< 0.005	< 0.005	< 0.005	0.17

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.1
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.04	0.71	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	157	157	< 0.005	0.01	0.64	159
Vendor	0.04	0.02	0.66	0.26	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	508	508	0.02	0.07	1.36	532
Hauling	0.01	< 0.005	0.08	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.01	13.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.04
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.96	6.96	< 0.005	< 0.005	0.01	7.27
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.15	1.15	< 0.005	< 0.005	< 0.005	1.20
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03

3.7. Phase 1 Rough Grading and Soil Export (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	0.39	0.39	10.3	17.8	0.03	0.08	—	0.08	0.08	—	0.08	—	2,959	2,959	0.12	0.02	—	2,970
Dust From Material Movement	—	—	—	—	—	—	2.80	2.80	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.76	0.76	< 0.005	0.08	0.08	—	8.76	8.76	< 0.005	< 0.005	0.02	9.22
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.23	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	64.9	64.9	< 0.005	< 0.005	—	65.1
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	—	10.8
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.61	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	134	134	< 0.005	0.01	0.55	136
Vendor	0.03	0.01	0.59	0.23	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	454	454	0.01	0.07	1.22	476
Hauling	0.04	0.02	0.49	0.34	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	81.4	81.4	0.02	0.01	0.06	85.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.75	2.75	< 0.005	< 0.005	0.01	2.79
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.96	9.96	< 0.005	< 0.005	0.01	10.4
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.79	1.79	< 0.005	< 0.005	< 0.005	1.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.46
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.72
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.30	0.30	< 0.005	< 0.005	< 0.005	0.31

3.9. Phase 1 Fine Grading and Soil Import (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	0.39	0.39	10.3	17.8	0.03	0.08	—	0.08	0.08	—	0.08	—	2,959	2,959	0.12	0.02	—	2,970

Dust From Material Movement	—	—	—	—	—	—	2.77	2.77	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.76	0.76	< 0.005	0.08	0.08	—	8.76	8.76	< 0.005	< 0.005	0.02	9.22
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.23	0.39	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	64.9	64.9	< 0.005	< 0.005	—	65.1
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.20
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	—	10.8
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.03	0.03	< 0.005	< 0.005	< 0.005	0.03
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.61	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	134	134	< 0.005	0.01	0.55	136
Vendor	0.03	0.01	0.59	0.23	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	454	454	0.01	0.07	1.22	476
Hauling	0.01	< 0.005	0.11	0.07	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.8	17.8	< 0.005	< 0.005	0.01	18.8

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.75	2.75	< 0.005	< 0.005	0.01	2.79
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.96	9.96	< 0.005	< 0.005	0.01	10.4
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	< 0.005	0.41
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.46
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.72
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.07

3.11. Phase 1 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.32	8.74	14.3	0.02	0.09	—	0.09	0.08	—	0.08	—	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.08	1.76	< 0.005	0.01	—	0.01	0.01	—	0.01	—	296	296	0.01	< 0.005	—	297

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	0.20	0.32	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	48.9	48.9	< 0.005	< 0.005	—	49.1
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.32	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.6	71.6	< 0.005	< 0.005	0.29	72.8
Vendor	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	80.2	80.2	< 0.005	0.01	0.22	83.9
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	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.26	8.26	< 0.005	< 0.005	0.02	8.38
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.89	9.89	< 0.005	< 0.005	0.01	10.3
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	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.37	1.37	< 0.005	< 0.005	< 0.005	1.39
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.71
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

3.13. Phase 2 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.32	8.74	14.3	0.02	0.09	—	0.09	0.08	—	0.08	—	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	0.32	0.32	8.74	14.3	0.02	0.09	—	0.09	0.08	—	0.08	—	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	0.07	0.07	1.88	3.08	0.01	0.02	—	0.02	0.02	—	0.02	—	516	516	0.02	< 0.005	—	518
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	0.34	0.56	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	85.5	85.5	< 0.005	< 0.005	—	85.7
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	0.03	0.03	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	62.7	62.7	< 0.005	< 0.005	0.26	63.7
Vendor	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	80.2	80.2	< 0.005	0.01	0.22	83.9
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	0.03	0.03	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	57.9	57.9	< 0.005	< 0.005	0.01	58.7
Vendor	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	80.2	80.2	< 0.005	0.01	0.01	83.8
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	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.6	12.6	< 0.005	< 0.005	0.02	12.8
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.3	17.3	< 0.005	< 0.005	0.02	18.0
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	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.09	2.09	< 0.005	< 0.005	< 0.005	2.12
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.86	2.86	< 0.005	< 0.005	< 0.005	2.99
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

3.15. Phase 2 Building Construction (2026) - 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	0.32	0.32	8.74	14.3	0.02	0.09	—	0.09	0.08	—	0.08	—	2,397	2,397	0.10	0.02	—	2,405
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	0.32	0.32	8.74	14.3	0.02	0.09	—	0.09	0.08	—	0.08	—	2,397	2,397	0.10	0.02	—	2,405
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	0.14	0.14	3.88	6.35	0.01	0.04	—	0.04	0.04	—	0.04	—	1,065	1,065	0.04	0.01	—	1,069
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	0.03	0.03	0.71	1.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	176	176	0.01	< 0.005	—	177
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	0.03	0.03	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	61.5	61.5	< 0.005	< 0.005	0.24	62.4
Vendor	0.01	< 0.005	0.10	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.8	78.8	< 0.005	0.01	0.19	82.6
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	0.03	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	56.8	56.8	< 0.005	< 0.005	0.01	57.6
Vendor	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.9	78.9	< 0.005	0.01	< 0.005	82.4
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	0.01	0.10	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25.5	25.5	< 0.005	< 0.005	0.05	25.9
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.0	35.0	< 0.005	0.01	0.04	36.6

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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.23	4.23	< 0.005	< 0.005	0.01	4.29
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.80	5.80	< 0.005	< 0.005	0.01	6.07
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

3.17. Phase 1 Asphalt 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.19	5.94	8.87	0.01	0.07	—	0.07	0.06	—	0.06	—	1,351	1,351	0.05	0.01	—	1,355
Paving	—	0.52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.15	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	33.3	33.3	< 0.005	< 0.005	—	33.4
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.51	5.51	< 0.005	< 0.005	—	5.53

Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.09	0.08	0.05	0.81	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	179	179	< 0.005	0.01	0.74	182
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	53.4	53.4	< 0.005	0.01	0.14	55.9
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.13	4.13	< 0.005	< 0.005	0.01	4.19
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.32	1.32	< 0.005	< 0.005	< 0.005	1.38
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.68	0.68	< 0.005	< 0.005	< 0.005	0.69
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.22	0.22	< 0.005	< 0.005	< 0.005	0.23
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

3.19. Phase 1 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	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	21.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	—	0.57	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.07	18.2
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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.46	0.46	< 0.005	< 0.005	< 0.005	0.47
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
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

3.21. Phase 2 Architectural Coating (2026) - 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	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	9.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.95	6.95	< 0.005	< 0.005	—	6.97
Architectural Coatings	—	0.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.15	1.15	< 0.005	< 0.005	—	1.15
Architectural Coatings	—	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.78	8.78	< 0.005	< 0.005	0.03	8.91
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.43
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07

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

3.23. Phase 1 Utilities Trenching (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	0.02	0.02	1.10	0.99	< 0.005	0.03	—	0.03	0.03	—	0.03	—	142	142	0.01	< 0.005	—	142
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.94	1.94	< 0.005	< 0.005	—	1.95
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	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
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	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.4	22.4	< 0.005	< 0.005	0.09	22.7
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.29
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
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

3.25. Phase 1 Finishing/Landscaping (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	0.02	0.02	1.10	0.99	< 0.005	0.03	—	0.03	0.03	—	0.03	—	142	142	0.01	< 0.005	—	142
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.94	1.94	< 0.005	< 0.005	—	1.95
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	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
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	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.4	22.4	< 0.005	< 0.005	0.09	22.7
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.29
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
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

3.27. Phase 2 Paving (2026) - 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	0.17	0.17	5.58	7.79	0.01	0.08	—	0.08	0.07	—	0.07	—	1,197	1,197	0.05	0.01	—	1,201
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	0.01	0.01	0.29	0.41	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	62.3	62.3	< 0.005	< 0.005	—	62.5
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	0.05	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.3	10.3	< 0.005	< 0.005	—	10.4
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	0.08	0.08	0.05	0.75	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	176	176	< 0.005	0.01	0.68	178
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	52.6	52.6	< 0.005	0.01	0.13	55.0
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	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.55	8.55	< 0.005	< 0.005	0.02	8.68
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.74	2.74	< 0.005	< 0.005	< 0.005	2.86
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	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.42	1.42	< 0.005	< 0.005	< 0.005	1.44
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.47
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

3.29. Phase 2 Finishing/Landscaping (2026) - 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	0.02	0.02	1.10	0.99	< 0.005	0.03	—	0.03	0.03	—	0.03	—	142	142	0.01	< 0.005	—	142
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.94	1.94	< 0.005	< 0.005	—	1.95

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	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.32	0.32	< 0.005	< 0.005	—	0.32
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	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.08	22.3
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.28	0.28	< 0.005	< 0.005	< 0.005	0.29
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	3.77	3.57	1.34	21.2	0.04	0.02	3.68	3.70	0.02	0.93	0.95	—	3,731	3,731	0.24	0.14	14.2	3,794
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	3.77	3.57	1.34	21.2	0.04	0.02	3.68	3.70	0.02	0.93	0.95	—	3,731	3,731	0.24	0.14	14.2	3,794
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	3.65	3.42	1.68	22.1	0.03	0.02	3.68	3.70	0.02	0.93	0.95	—	3,465	3,465	0.29	0.17	0.37	3,523
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	3.65	3.42	1.68	22.1	0.03	0.02	3.68	3.70	0.02	0.93	0.95	—	3,465	3,465	0.29	0.17	0.37	3,523

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	0.47	0.44	0.20	2.66	< 0.005	< 0.005	0.48	0.48	< 0.005	0.12	0.12	—	414	414	0.03	0.02	0.72	421
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	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	0.47	0.44	0.20	2.66	< 0.005	< 0.005	0.48	0.48	< 0.005	0.12	0.12	—	414	414	0.03	0.02	0.72	421

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	335	335	0.05	0.01	—	338
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	5.68	5.68	< 0.005	< 0.005	—	5.74
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	—	341	341	0.06	0.01	—	344
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	335	335	0.05	0.01	—	338
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	5.68	5.68	< 0.005	< 0.005	—	5.74
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	341	341	0.06	0.01	—	344
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	55.4	55.4	0.01	< 0.005	—	56.0
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.94	0.94	< 0.005	< 0.005	—	0.95
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	56.4	56.4	0.01	< 0.005	—	56.9

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	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	—	0.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.27	0.25	0.01	1.50	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.17	6.17	< 0.005	< 0.005	—	6.20
Total	0.27	1.10	0.01	1.50	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.17	6.17	< 0.005	< 0.005	—	6.20
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	—	0.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.85	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.02	< 0.005	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.50	0.50	< 0.005	< 0.005	—	0.51
Total	0.02	0.18	< 0.005	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.50	0.50	< 0.005	< 0.005	—	0.51

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	2.33	3.95	6.28	0.01	0.01	—	8.04
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.17	0.17	< 0.005	< 0.005	—	0.17
Total	—	—	—	—	—	—	—	—	—	—	—	2.33	4.12	6.45	0.01	0.01	—	8.21
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	2.33	3.95	6.28	0.01	0.01	—	8.04
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.17	0.17	< 0.005	< 0.005	—	0.17
Total	—	—	—	—	—	—	—	—	—	—	—	2.33	4.12	6.45	0.01	0.01	—	8.21
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	0.39	0.65	1.04	< 0.005	< 0.005	—	1.33
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.03	0.03	< 0.005	< 0.005	—	0.03
Total	—	—	—	—	—	—	—	—	—	—	—	0.39	0.68	1.07	< 0.005	< 0.005	—	1.36

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	7.33	0.00	7.33	0.73	0.00	—	25.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	7.33	0.00	7.33	0.73	0.00	—	25.6

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Junior High School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Demolition	4/1/2025	4/28/2025	5.00	20.0	—
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Demolition	8/15/2025	9/12/2025	5.00	21.0	—
Phase 1 Site Preparation and Soil Export	Site Preparation	4/24/2025	4/30/2025	5.00	5.00	—
Phase 1 Rough Grading and Soil Export	Grading	5/1/2025	5/12/2025	5.00	8.00	—
Phase 1 Fine Grading and Soil Import	Grading	5/13/2025	5/22/2025	5.00	8.00	—

Phase 1 Building Construction	Building Construction	5/30/2025	7/31/2025	5.00	45.0	—
Phase 2 Building Construction	Building Construction	9/13/2025	8/15/2026	5.00	240	—
Phase 1 Asphalt Paving	Paving	7/21/2025	7/31/2025	5.00	9.00	—
Phase 1 Architectural Coating	Architectural Coating	8/1/2025	8/14/2025	5.00	10.0	—
Phase 2 Architectural Coating	Architectural Coating	7/21/2026	8/15/2026	5.00	19.0	—
Phase 1 Utilities Trenching	Trenching	5/23/2025	5/29/2025	5.00	5.00	—
Phase 1 Finishing/Landscaping	Trenching	8/8/2025	8/14/2025	5.00	5.00	—
Phase 2 Paving	Trenching	7/21/2026	8/15/2026	5.00	19.0	—
Phase 2 Finishing/Landscaping	Trenching	8/10/2026	8/15/2026	5.00	5.00	—

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
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	8.00	33.0	0.73
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Excavators	Diesel	Tier 4 Interim	3.00	8.00	36.0	0.38
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	8.00	367	0.40

Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Crushing/Proc. Equipment	Gasoline	Average	1.00	8.00	12.0	0.85
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	8.00	33.0	0.73
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Excavators	Diesel	Tier 4 Interim	3.00	8.00	36.0	0.38
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Rubber Tired Dozers	Diesel	Tier 4 Interim	2.00	8.00	367	0.40
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Crushing/Proc. Equipment	Gasoline	Average	1.00	8.00	12.0	0.85
Phase 1 Site Preparation and Soil Export	Rubber Tired Dozers	Diesel	Tier 4 Interim	3.00	8.00	367	0.40
Phase 1 Site Preparation and Soil Export	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	4.00	8.00	84.0	0.37
Phase 1 Rough Grading and Soil Export	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38
Phase 1 Rough Grading and Soil Export	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Phase 1 Rough Grading and Soil Export	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Phase 1 Rough Grading and Soil Export	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	8.00	84.0	0.37
Phase 1 Fine Grading and Soil Import	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38

Phase 1 Fine Grading and Soil Import	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Phase 1 Fine Grading and Soil Import	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Phase 1 Fine Grading and Soil Import	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	8.00	84.0	0.37
Phase 1 Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Phase 1 Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Phase 1 Building Construction	Generator Sets	Diesel	Tier 4 Interim	1.00	8.00	14.0	0.74
Phase 1 Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Phase 1 Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Phase 2 Building Construction	Cranes	Diesel	Tier 4 Interim	1.00	7.00	367	0.29
Phase 2 Building Construction	Forklifts	Diesel	Tier 4 Interim	3.00	8.00	82.0	0.20
Phase 2 Building Construction	Generator Sets	Diesel	Tier 4 Interim	1.00	8.00	14.0	0.74
Phase 2 Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	3.00	7.00	84.0	0.37
Phase 2 Building Construction	Welders	Diesel	Tier 4 Interim	1.00	8.00	46.0	0.45
Phase 1 Asphalt Paving	Cement and Mortar Mixers	Diesel	Tier 4 Interim	2.00	6.00	10.0	0.56
Phase 1 Asphalt Paving	Pavers	Diesel	Tier 4 Interim	1.00	8.00	81.0	0.42
Phase 1 Asphalt Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	6.00	89.0	0.36
Phase 1 Asphalt Paving	Rollers	Diesel	Tier 4 Interim	2.00	6.00	36.0	0.38
Phase 1 Asphalt Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37

Phase 1 Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Phase 2 Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Phase 1 Utilities Trenching	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38
Phase 1 Finishing/Landscaping	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38
Phase 2 Paving	Cement and Mortar Mixers	Diesel	Tier 4 Interim	2.00	6.00	10.0	0.56
Phase 2 Paving	Pavers	Diesel	Tier 4 Interim	1.00	8.00	81.0	0.42
Phase 2 Paving	Paving Equipment	Diesel	Tier 4 Interim	1.00	6.00	89.0	0.36
Phase 2 Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Phase 2 Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	8.00	84.0	0.37
Phase 2 Finishing/Landscaping	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	—	—	—	—
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Worker	17.5	11.7	LDA,LDT1,LDT2
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Vendor	8.00	8.40	HHDT,MHDT
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Hauling	4.00	20.0	HHDT
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	Onsite truck	1.00	0.83	HHDT

Phase 1 Site Preparation and Soil Export	—	—	—	—
Phase 1 Site Preparation and Soil Export	Worker	17.5	11.7	LDA,LDT1,LDT2
Phase 1 Site Preparation and Soil Export	Vendor	19.0	8.40	HHDT,MHDT
Phase 1 Site Preparation and Soil Export	Hauling	5.00	0.25	HHDT
Phase 1 Site Preparation and Soil Export	Onsite truck	1.00	2.89	HHDT
Phase 1 Rough Grading and Soil Export	—	—	—	—
Phase 1 Rough Grading and Soil Export	Worker	15.0	11.7	LDA,LDT1,LDT2
Phase 1 Rough Grading and Soil Export	Vendor	17.0	8.40	HHDT,MHDT
Phase 1 Rough Grading and Soil Export	Hauling	32.0	0.25	HHDT
Phase 1 Rough Grading and Soil Export	Onsite truck	1.00	2.06	HHDT
Phase 1 Building Construction	—	—	—	—
Phase 1 Building Construction	Worker	8.00	11.7	LDA,LDT1,LDT2
Phase 1 Building Construction	Vendor	3.00	8.40	HHDT,MHDT
Phase 1 Building Construction	Hauling	0.00	20.0	HHDT
Phase 1 Building Construction	Onsite truck	0.00	—	HHDT
Phase 1 Asphalt Paving	—	—	—	—
Phase 1 Asphalt Paving	Worker	20.0	11.7	LDA,LDT1,LDT2
Phase 1 Asphalt Paving	Vendor	2.00	8.40	HHDT,MHDT
Phase 1 Asphalt Paving	Hauling	0.00	20.0	HHDT
Phase 1 Asphalt Paving	Onsite truck	0.00	—	HHDT
Phase 1 Architectural Coating	—	—	—	—

Phase 1 Architectural Coating	Worker	2.00	11.7	LDA,LDT1,LDT2
Phase 1 Architectural Coating	Vendor	0.00	8.40	HHDT,MHDT
Phase 1 Architectural Coating	Hauling	0.00	20.0	HHDT
Phase 1 Architectural Coating	Onsite truck	0.00	—	HHDT
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	—	—	—	—
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Worker	17.5	11.7	LDA,LDT1,LDT2
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Vendor	8.00	8.40	HHDT,MHDT
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Hauling	2.00	20.0	HHDT
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	Onsite truck	1.00	0.83	HHDT
Phase 1 Fine Grading and Soil Import	—	—	—	—
Phase 1 Fine Grading and Soil Import	Worker	15.0	11.7	LDA,LDT1,LDT2
Phase 1 Fine Grading and Soil Import	Vendor	17.0	8.40	HHDT,MHDT
Phase 1 Fine Grading and Soil Import	Hauling	7.00	0.25	HHDT
Phase 1 Fine Grading and Soil Import	Onsite truck	1.00	2.06	HHDT
Phase 2 Building Construction	—	—	—	—
Phase 2 Building Construction	Worker	7.00	11.7	LDA,LDT1,LDT2
Phase 2 Building Construction	Vendor	3.00	8.40	HHDT,MHDT
Phase 2 Building Construction	Hauling	0.00	20.0	HHDT
Phase 2 Building Construction	Onsite truck	0.00	—	HHDT
Phase 2 Architectural Coating	—	—	—	—
Phase 2 Architectural Coating	Worker	1.00	11.7	LDA,LDT1,LDT2
Phase 2 Architectural Coating	Vendor	0.00	8.40	HHDT,MHDT
Phase 2 Architectural Coating	Hauling	0.00	20.0	HHDT
Phase 2 Architectural Coating	Onsite truck	0.00	—	HHDT

Phase 1 Utilities Trenching	—	—	—	—
Phase 1 Utilities Trenching	Worker	2.50	11.7	LDA,LDT1,LDT2
Phase 1 Utilities Trenching	Vendor	0.00	8.40	HHDT,MHDT
Phase 1 Utilities Trenching	Hauling	0.00	20.0	HHDT
Phase 1 Utilities Trenching	Onsite truck	0.00	—	HHDT
Phase 1 Finishing/Landscaping	—	—	—	—
Phase 1 Finishing/Landscaping	Worker	2.50	11.7	LDA,LDT1,LDT2
Phase 1 Finishing/Landscaping	Vendor	0.00	8.40	HHDT,MHDT
Phase 1 Finishing/Landscaping	Hauling	0.00	20.0	HHDT
Phase 1 Finishing/Landscaping	Onsite truck	0.00	—	HHDT
Phase 2 Paving	—	—	—	—
Phase 2 Paving	Worker	20.0	11.7	LDA,LDT1,LDT2
Phase 2 Paving	Vendor	2.00	8.40	HHDT,MHDT
Phase 2 Paving	Hauling	0.00	20.0	HHDT
Phase 2 Paving	Onsite truck	0.00	—	HHDT
Phase 2 Finishing/Landscaping	—	—	—	—
Phase 2 Finishing/Landscaping	Worker	2.50	11.7	LDA,LDT1,LDT2
Phase 2 Finishing/Landscaping	Vendor	0.00	8.40	HHDT,MHDT
Phase 2 Finishing/Landscaping	Hauling	0.00	20.0	HHDT
Phase 2 Finishing/Landscaping	Onsite truck	0.00	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

Sweep paved roads once per month	9%	9%

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)
Phase 1 Architectural Coating	0.00	0.00	27,030	9,010	4,698
Phase 2 Architectural Coating	0.00	0.00	24,750	8,250	0.00

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing	0.00	0.00	0.00	644	—
Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing	0.00	0.00	0.00	95.0	—
Phase 1 Site Preparation and Soil Export	0.00	500	7.50	0.00	—
Phase 1 Rough Grading and Soil Export	0.00	5,000	8.00	0.00	—
Phase 1 Fine Grading and Soil Import	1,000	0.00	8.00	0.00	—
Phase 1 Asphalt Paving	0.00	0.00	0.00	0.00	2.91

5.6.2. Construction Earthmoving Control Strategies

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

Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Junior High School	0.00	0%
Parking Lot	0.27	100%
Other Asphalt Surfaces	1.53	100%
Other Non-Asphalt Surfaces	1.11	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	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
Junior High School	950	0.00	0.00	247,548	5,292	0.00	0.00	1,379,620
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	51,780	17,260	4,698

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)
Junior High School	599,290	204	0.0330	0.0040	0.00
Parking Lot	10,162	204	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	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)
Junior High School	1,090,908	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	61,141

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Junior High School	82.1	—
Parking Lot	0.00	—
Other Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	0.00	—

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
Junior High School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Junior High School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Junior High School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Junior High School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

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

8. User Changes to Default Data

Screen	Justification
Land Use	based on data from District
Construction: Construction Phases	Phase 1 activities based on data from District and CalEEMod defaults, Phase 2 activities based on CalEEMod default schedule normalized to fit duration provided by District
Construction: Off-Road Equipment	assumes 1 excavator for utilities trenching and finishing/landscaping activities. Model assumes use of Tier 4 Engines as a condition of approval for the project.
Construction: Trips and VMT	water truck trips and new CalEEMod methodology applied for demolition, site prep, grading, and paving phases. Soil hauling to adjacent property 0.25 miles away. Modeling assumes 40 cy haul truck capacity for soil hauling to adjacent site 0.25 miles away. See assumptions file for calculations.
Construction: Architectural Coatings	assumes only parking lot and asphalt surfaces would be striped

Operations: Vehicle Data	based on data provided by Garland and Associates
Operations: Architectural Coatings	assumes only parking lot and asphalt surfaces would be striped
Operations: Water and Waste Water	Assumes 100% aerobic treatment.
Operations: Fleet Mix	Fleet mix for the project is modified to reflect a higher proportion of passenger vehicles that the regional VMT. Assumes a mix of approximately 97% passenger vehicles, 2% medium duty trucks, and 1% heavy duty trucks and buses.
Operations: Energy Use	all electric buildings based on data from the District

Appendix B Biological Resources Assessment

Appendices

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Biological Resources Assessment for the Golden West Middle School Project

Solano County, California

Prepared For:

Placeworks, Inc.

Prepared By:

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

June 2024

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
AMM	Avoidance and Minimization Measure
BCC	Bird of Conservation Concern
BRA	Biological Resources Assessment
BSA	Biological Study Area
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DBH	diameter at breast height

Term	Definition
DPS	Distinct Population Segment
ECORP	ECORP Consulting, Inc.
ESA	Endangered Species Act
HCP	Habitat Conservation Plan
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
MSL	mean sea level
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
PIA	Project Impact Area
Project	Golden West Middle School Project
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
SSHCP	South Sacramento Habitat Conservation Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group

1.0 INTRODUCTION

ECORP Consulting, Inc. (ECORP) has conducted a Biological Resources Assessment (BRA) at the request of Placeworks, Inc. for the proposed Golden West Middle School Project (Project) located in the City of Fairfield, Solano 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.

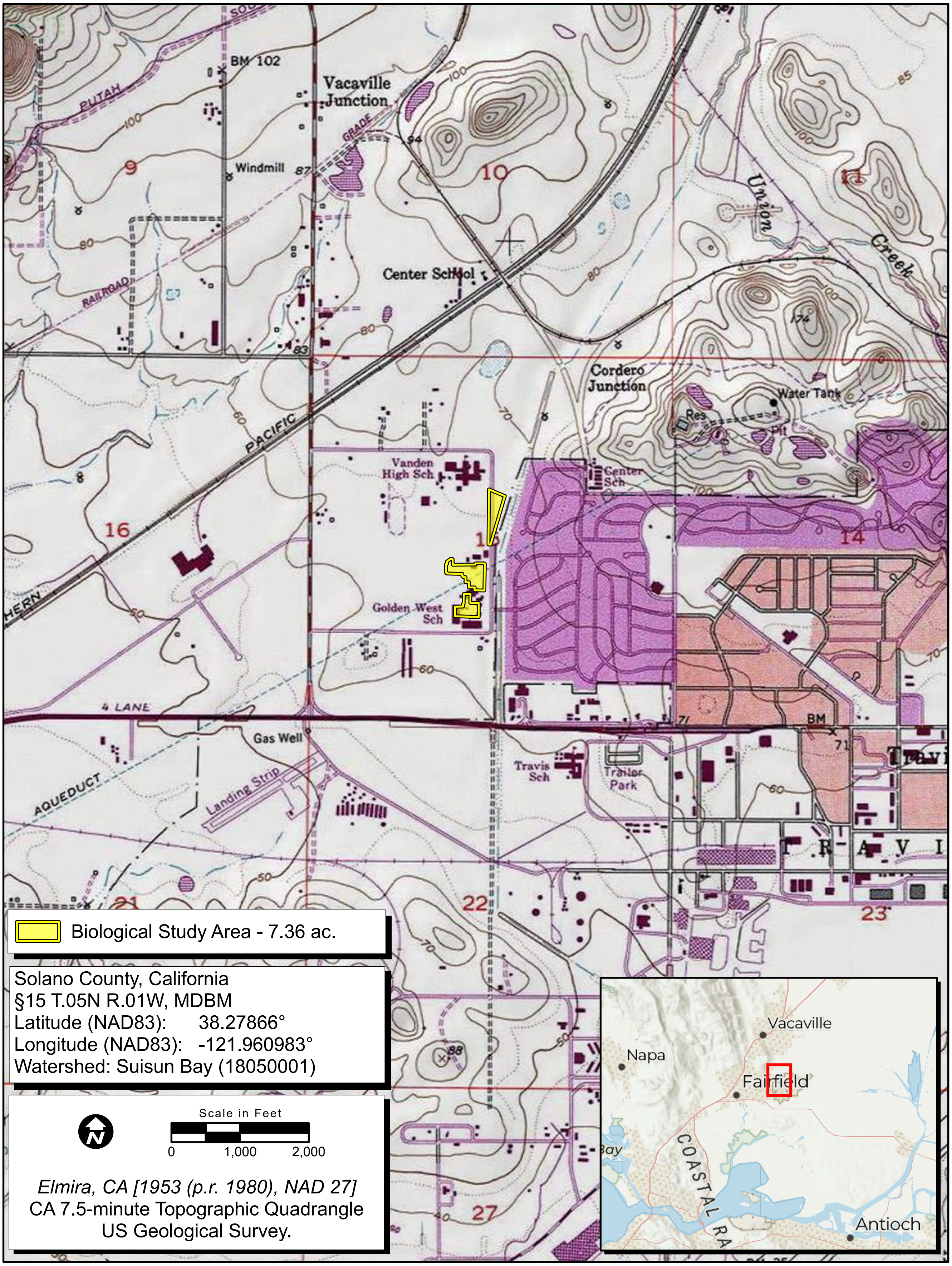
1.1 Project Location and Description

The Proposed Project is located at Golden West Middle School (Golden West), within the Travis Unified School District, and immediately adjacent to Travis Air Force Base. The Proposed Project includes an infill of existing greenspace within Golden West and use of a parcel in the northern portion of the Biological Study Area (BSA).

1.2 Biological Study Area

The BSA includes all areas where Project-related activities may result in impacts to biological resources and comprises three separate areas: two areas within Golden West (which are herein referred to as the *southern areas of the BSA*) and one undeveloped area to the north of the Golden West campus (the BSA's northern parcel) (Figure 1). The 7.36-acre BSA corresponds to a portion of Section 15, Township 5 North, Range 1 West (Mount Diablo Base and Meridian) of the Elmira, California (U.S. Geological Survey (USGS) 1953) topographical map. The approximate center of the BSA is located at 38.27866 degrees north and -121.960983 degrees west, within the Suisun Bay watershed (Hydrological Unit Code 18050001; USGS 2024).

Additionally, the Project Impact Area (PIA) is included in the Results Figures in Section 4.0. The 6.19-acre PIA is encompassed within the BSA, except for an approximately 12-foot-wide sliver along the northern portion of the southern areas of the BSA. This sliver was excluded from the BSA as it was inaccessible due to the presence of a chain link fence.



Location: N:\2024\2024-067 Golden West Middle School\MAPS\Location_Vicinity\GWMS Location and Vicinity.aprx - GWMS LnV 20240526 (jwelsh - 5/26/2024)

Map Date: 5/26/2024
Sources: ESRI, USGS

Figure 1. BSA Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2024-067 Golden West Middle School

1.3 Purpose of this Biological Resources Assessment

The purpose of this BRA is to document existing biological resources within the BSA, 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;
- are identified as a Species of Special Concern (SSC) 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 [CRPRs] 1 and 2);
- are plants listed as rare under the California Native Plant Protection Act (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. The USFWS may issue permits to qualified applicants as authorized by the MBTA 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:

- 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; or
- 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 within which such species are covered.

2.2.1.3 Native Plant Protection Act

The Native Plant Protection Act (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 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. CDFW may suggest additional protective measures during their review. A Lake or Streambed Alteration Agreement (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. 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 if it is determined that a project may have a significant effect on oak woodlands.

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 1 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 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 (i.e., 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 the CEQA Guidelines. Pursuant to the CEQA Guidelines, 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, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

An evaluation of whether 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

Species of Special Concern (SSC) are defined by the CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the 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 California Rare Plant Ranks

The CNPS maintains the *Rare Plant Inventory* (CNPS 2024a), 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, academic, 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 (greater than 80 percent of occurrences threatened/high degree and immediacy of threat)
- Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent 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 2024a). 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.

2.2.4.5 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 2022), which provides a list of vegetation alliances, associations, and special stands as defined in *A Manual of California Vegetation Online* (MCV; CNPS 2024b), 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.

2.2.4.6 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 database or as occurrence records in the CNDDB and are supplemented with the results of the field reconnaissance.

2.2.4.7 Fairfield Tree Conservation Ordinance (Section 25.36)

The City of Fairfield has acknowledged the many health and economic benefits of trees and enacted the Tree Conservation Ordinance (Section 25.36) to protect public trees and promote the conservation of tree resources. Protected trees are all trees on public property, trees greater than 6 inches diameter at breast height (DBH) of native oak (*Quercus sp.*), bay laurel (*Umbellularia californica*), madrone (*Arbutus menziesiui*), or buckeye (*Aesculus californica*) species, or trees that have historical, aesthetic, or habitat value. A tree removal permit must be obtained prior to removal of a protected tree, which may include mitigation requirements.

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, topographic mapping, soil survey mapping available from the Natural Resources Conservation Service (NRCS) *Web Soil Survey*, USFWS National Wetlands Inventory (NWI) mapping, USFWS Critical Habitat Mapper, NMFS Essential Fish Habitat Mapper (National Oceanic and Atmospheric Administration [NOAA] 2024c), 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 within or near the BSA:

- CDFW's CNDDB data for the Elmira, California 7.5-minute quadrangle and the surrounding eight quadrangles (CDFW 2024)
- CNPS Rare Plant Inventory data for the Elmira, California 7.5-minute quadrangle and the surrounding eight quadrangles (CNPS 2024a)
- USFWS Information for Planning and Consultation Resource Report List (USFWS 2024)
- NOAA ESA Critical Habitat Mapper (NOAA 2024a)
- NOAA Essential Fish Habitat Mapper (NOAA 2024b)

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 biologist Daniel Wong conducted the site reconnaissance visit on April 23, 2024. The biologist visually assessed the BSA while walking meandering transects through all portions of the site and used binoculars to scan inaccessible areas. The biologist collected the following biological resource information: characteristics and approximate boundaries of vegetation communities and other land cover types; plant and animal species or their sign directly observed; and incidental observations of special habitat features such as burrows, active raptor nests, potential bat roost sites.

The biologist qualitatively assessed and mapped vegetation communities based on dominant plant composition. ECORP based the vegetation community classification on the classification systems presented in the MCV and gave special attention to identifying the portions of the BSA that have the potential to support special-status species or sensitive habitats. ECORP recorded data on a Global Positioning System unit, field notebooks, and/or maps and took photographs 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 relatively flat terrain within and adjacent to an existing developed school campus in a suburban, residential neighborhood. The BSA is situated at an elevational range of approximately 50 to 70 feet above mean sea level (MSL) in the Sacramento Valley of the California floristic province (Jepson eFlora 2024a). The average winter low temperature is 41.1 degrees Fahrenheit (˚F), and the average summer high temperature is 88.6˚F. The average annual precipitation is approximately 21.92 inches at the Fairfield, California station, which is approximately 6 miles west from the BSA (NOAA 2024b).

The BSA includes three areas, including the southern areas of the BSA and the BSA's northern parcel. The southern area of the BSA consists of landscaped lawn and vegetated mounds of soils. The BSA's northern parcel primarily includes annual grassland. Section 4.3 of this report describes the vegetation communities and plant species composition in further detail.

Representative photographs of the BSA are provided in Appendix B.

4.2 Soils and Geology

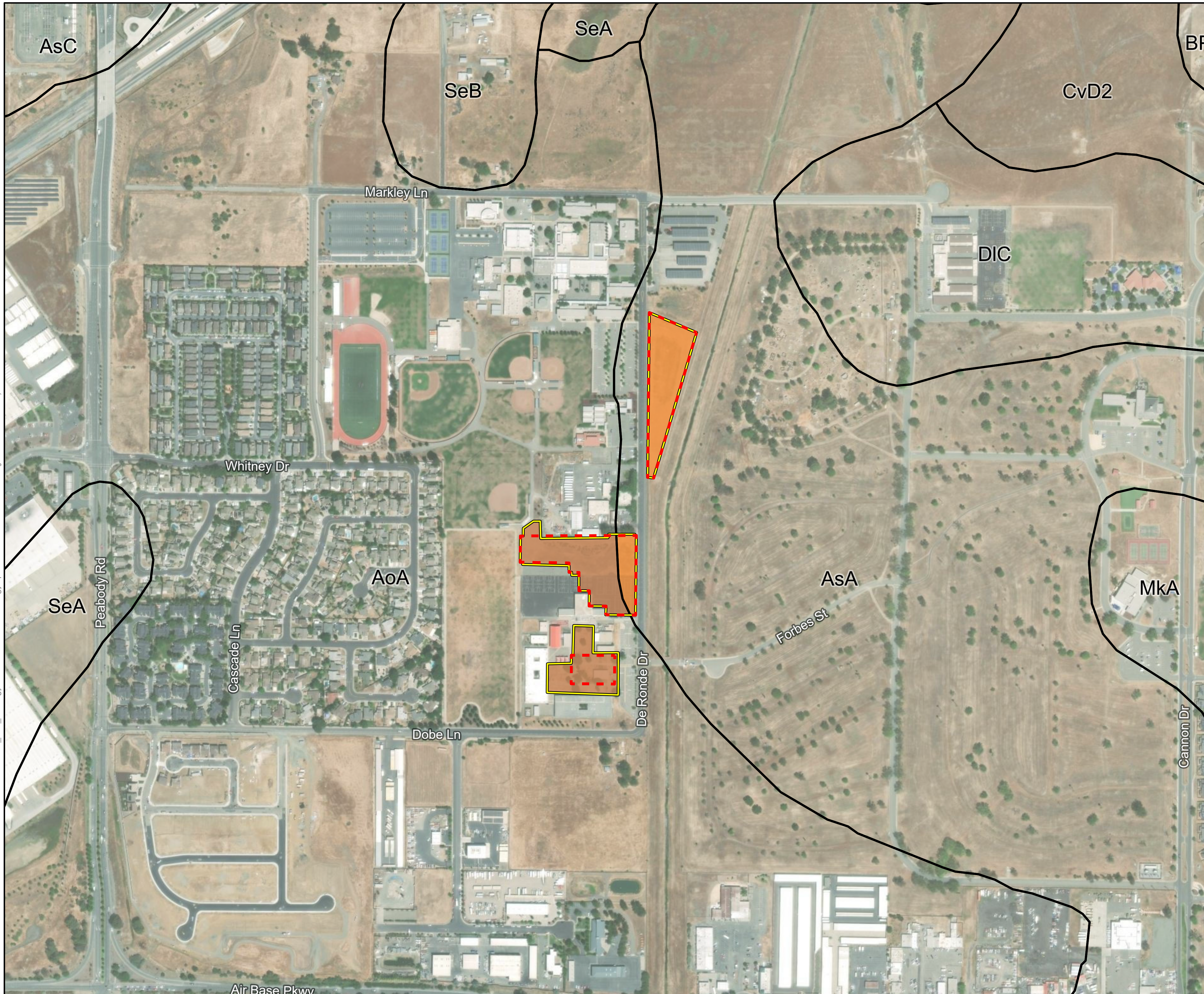
ECORP staff obtained soil survey mapping data for the BSA from the NRCS *Web Soil Survey* and assessed soil properties of the NRCS soil mapping units (NRCS 2024a; Figure 2). Table 1 provides an overview of the soil series mapped within the BSA and the key features of the soil series, such as hydric rating or presence of serpentine or gabbroic soil material.

Table 1. Soil Series Mapped within the Biological Study Area

Map unit symbol	Map Unit Name	Rating	Hydric Soil Rating
AoA	Antioch-San Ysidro complex, 0 to 2 percent slopes	Alluvium derived from sedimentary rock	No
AsA	Antioch-San Ysidro complex, thick surface, 0 to 2 percent slopes	Alluvium derived from sedimentary rock	No

4.3 Vegetation Communities and Land Cover Types

The following sections describe vegetation communities and land cover types within the BSA as observed during the site reconnaissance.



Map Contents

Study Area - 7.36 ac.

Project Impact Area - 6.19 ac.

NRCS Soil Types Within Study Area

AoA - Antioch-San Ysidro complex, 0 to 2 percent slopes

AsA - Antioch-San Ysidro complex, thick surface, 0 to 2 percent slopes

Sources: ESRI, Maxar (2022), Solano County, USDA NRCS SSURGO (2019)

Location: N:\2024\2024-067 Golden West Middle School\MAPS\Soils_and_Geology\GWMS Soils and Geology.aprx - GWMS Soils 20240503 (jwelsh - 5/26/2024)

Map Date: 5/26/2024

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Scale in Feet
0 500

Figure 2. Natural Resources Conservation Service Soils

2024-067 Golden West Middle School

4.3.1 Disturbed/Developed

The majority of vegetation within the BSA consists of grass lawns, which is regularly mowed (weekly) and is dominated by an unidentifiable sod species. The margins of these lawns consist of more ruderal species dominated by annual blue grass (*Poa annua*), in addition to other non-native species such as foxtail barley (*Hordeum murinum*), and big heron bill (*Erodium botrys*). The southernmost area of the BSA contains trees within the grass lawn of various species and sizes.

The grass lawns and their margins can be characterized as disturbed/developed vegetation community.

4.3.2 Annual Grassland

The BSA's northern parcel consists of an undeveloped, annual grassland dominated by nonnative annual grass species such as foxtail barley, wildoats (*Avena* spp.), and Italian ryegrass (*Festuca perennis*). This parcel is mowed annually for weed abatement and is immediately adjacent to a bioswale to the north of the parcel.

The annual grasslands can be characterized as the *Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance (CNPS 2024b). Semi-natural alliances are strongly dominated by nonnative plants that have become naturalized in California, do not have state rarity rankings, and are not considered sensitive natural communities.

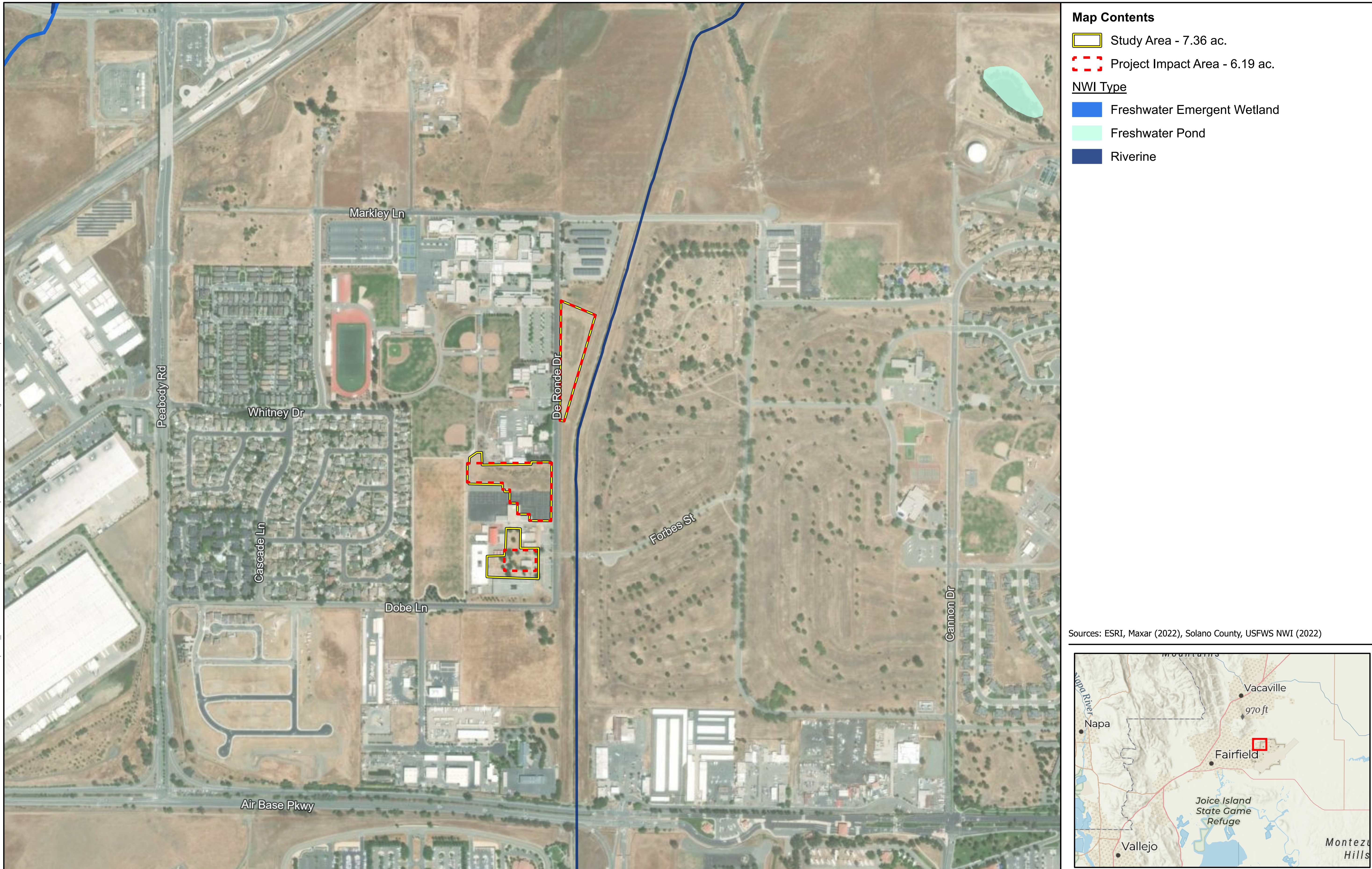
4.4 Aquatic Resources

The USFWS established the NWI to conduct a nationwide inventory of U.S. wetlands to provide biologists and others with information on the distribution and type of wetlands to aid in conservation efforts (USFWS 2024). The USFWS's objective of mapping wetlands and deep-water 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.

According to the NWI, the BSA does not contain any mapped aquatic features (Figure 3; USFWS 2024). During site assessment, ECORP did not observe any potential wetlands, Waters of the U.S., or Waters of the State within the BSA.

4.5 Wildlife

The BSA provides habitat for a variety of wildlife species. Wildlife species observed within the BSA's southern areas include common raven (*Corvus corax*), tree swallow (*Tachycineta bicolor*), and red-winged blackbird (*Agelaius phoeniceus*). ECORP observed black-tailed jackrabbit (*Lepus californicus*) within the BSA's northern parcel. The biologist did not observe any other wildlife within the BSA.



Map Date: 5/26/2024

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Figure 3. National Wetlands Inventory

2024-067 Golden West Middle School

4.6 Special-Status Species

Table 2 presents the full list of special-status plant and animal species that were identified through the literature review as having the potential to occur within the BSA. For each species, the table provides the listing status, a brief description of habitat requirements and/or species ecology, a determination of its potential to occur within the BSA, and the rationale for that determination. ECORP assessed the potential for each species to occur onsite 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.
- **Presumed Absent** – No suitable habitat (including soils and elevation requirements) or the species is not known to occur within the vicinity of the Project based on CNDDB records and other documentation.

Table 2. Special-Status Species Evaluated for the Study Area

Common Name (*Scientific Name*)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Plants						
Ferris' milk-vetch *(Astragalus tener* var. *ferrisiae)*	–	–	1B.1	Vernally mesic meadows and seeps and in sub–alkaline flats within valley and foothill grasslands. Elevation: 5 to 245 feet Bloom Period: April–May	April – May	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area

Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Alkali milk-vetch *(Astragalus tener* var. *tener)*	–	–	1B.2	Alkaline playas and vernal pools, and alkaline adobe clay soils in valley and foothill grasslands. Elevation: 5 to 195 feet Bloom Period: March–June	March – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Heartscale *(Atriplex cordulata* var. *cordulata)*	–	–	1B.2	Alkaline or saline valley and foothill grasslands, meadows and seeps, and chenopod scrub communities. Elevation: 0 to 1,835 feet Bloom Period: April–October	April – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Crownscale *(Atriplex coronata* var. *coronata)*	–	–	4.2	Alkaline, often clay substrates in chenopod scrub, valley and foothill grassland, and vernal pools. Elevation: 5 to 1,935 feet Bloom Period: March–October	March – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Brittlescale *(Atriplex depressa)*	–	–	1B.2	Alkaline and clay soils within chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools. Elevation: 5 to 1,050 feet Bloom Period: April–October	April – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Vernal pool smallscale *(Atriplex persistens)*	–	–	1B.2	Alkaline vernal pools. Elevation: 35 to 375 feet Bloom Period: June–October	June – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Lyngbye’s sedge (*Carex lyngbyei*)	–	–	2B.2	Brackish and freshwater marshes and swamps. Elevation: 0 to 35 feet Bloom Period: April–August	April – August	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area

Common Name (*Scientific Name*)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Pappose tarplant (*Centromadia parryi* ssp. *parryi*)	–	–	1B.2	Often on alkaline soils within chaparral, coastal prairie, meadows and seeps, coastal salt marshes and swamps, vernally mesic valley, and foothill grassland. Elevation: 0 to 1,380 feet Bloom Period: May–November	May – November	Presumed Absent. There is no suitable habitat for this species within the BSA.
Parry's rough tarplant *(Centromadia parryi* ssp. *rudis)*	–	–	4.2	Alkaline, vernally mesic areas, and seeps in valley and foothill grassland and vernal pools, sometimes found on roadsides. Elevation: 0 to 330 feet Bloom Period: May–October	May – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Hispid salty bird's-beak *(Chloropyron molle* ssp. *hispidum)*	–	–	1B.1	Alkaline soils in meadows and seeps, playas, and valley and foothill grasslands. Elevation: 5 to 510 feet Bloom Period: June–September	June – September	Presumed Absent. There is no suitable habitat for this species within the BSA.
Soft salty bird's-beak *(Chloropyron molle* ssp. *molle)*	FE	CR	1B.2	Coastal salt marshes and swamps. Elevation: 0 to 10 feet Bloom Period: July–November	July – November	Presumed Absent. There is no suitable habitat for this species within the BSA.
Bolander's water-hemlock *(Cicuta maculata* var. *bolanderi)*	–	–	2B.1	Coastal, fresh, or brackish marshes and swamps. Elevation: 0 to 655 feet Bloom Period: July–September	July – September	Presumed Absent. There is no suitable habitat for this species within the BSA.
Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*)	FE	–	1B.1	Salt marshes and swamps. Elevation: 0 to 5 feet Bloom Period: June–September	June – September	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Recurved larkspur *(Delphinium recurvatum)*	–	–	1B.2	Alkaline habitats within chenopod scrub, cismontane woodland, and valley and foothill grasslands. Elevation: 10 to 2,590 feet Bloom Period: March–June	March – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
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 2024). Elevation: 5 to 1,460 feet Bloom Period: March–May	March – May	Presumed Absent. There is no suitable habitat for this species within the BSA.
Small spikerush *(Eleocharis parvula)*	–	–	4.3	Marshes and swamps. Elevation: 5 to 9,910 feet Bloom Period: June–August	June – August	Presumed Absent. There is no suitable habitat for this species within the BSA.
Streamside daisy *(Erigeron biolettii)*	–	–	3	Rocky, mesic soils in broadleafed upland forest, cismontane woodland, and North Coast coniferous forest. Elevation: 100 to 3,610 feet Bloom Period: June–October	June – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Mt. Diablo buckwheat *(Eriogonum truncatum)*	–	–	1B.1	Sandy soils in chaparral, coastal scrub, valley, and foothill grassland. Elevation: 10 to 1,150 feet Bloom Period: April–September	April – September	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Jepson's coyote thistle (*Eryngium jepsonii*)	–	–	1B.2	Clay soils of valley and foothill grassland, and vernal pools. Elevation: 10 to 985 feet Bloom Period: April–August	April – August	Presumed Absent. There is no suitable habitat for this species within the BSA.
San Joaquin spearscale (*Extriplex joaquinana*)	–	–	1B.2	Alkaline soils in chenopod scrub, meadows seeps, playas, and valley and foothill grassland. Elevation: 5 to 2,740 feet Bloom Period: April–October	April – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Stinkbells *(Fritillaria agrestis)*	–	–	4.2	Clay and sometimes serpentine soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 35 to 5,100 feet Bloom Period: March–June	March – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Fragrant fritillary *(Fritillaria liliacea)*	–	–	1B.2	Heavy soil, open hills, fields near coast (Jepson Flora Project 2024b). Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, often on serpentine substrates. Elevation: 10 to 1,345 feet Bloom Period: February–April	February – April	Presumed Absent. There is no suitable habitat for this species within the BSA.
Adobe lily *(Fritillaria pluriflora)*	–	–	1B.2	Adobe soils in chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 195 to 2,315 feet Bloom Period: February–April	February – April	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Boggs Lake hedge-hyssop *(Gratiola heterosepala)*	–	CE	1B.2	Clay substrates of marshes and swamps (lake margins) and vernal pools. Elevation: 35 to 7,790 feet Bloom Period: April–August	April – August	Presumed Absent. There is no suitable habitat for this species within the BSA.
Hogwallow starfish *(Hesperevax caulescens)*	–	–	4.2	Mesic areas with clay soil within valley and foothill grassland, shallow vernal pools, and sometimes alkaline areas. Elevation: 0 to 1,655 feet Bloom Period: March–June	March – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Brewer's western flax (*Hesperolinon breweri*)	–	–	1B.2	Usually in serpentine soils of chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 100 to 3,100 feet Bloom Period: May–July	May – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Woolly rose-mallow *(Hibiscus lasiocarpos* var. *occidentalis)*	–	–	1B.2	Marshes and freshwater swamps. Often in riprap on sides of levees. Elevation: 0 to 395 feet Bloom Period: June–September	June – September	Presumed Absent. There is no suitable habitat for this species within the BSA.
Coast iris *(Iris longipetala)*	–	–	4.2	Mesic areas in coastal prairie, lower montane coniferous forest, and meadows and seeps. Elevation: 0 to 1,970 feet Bloom Period: March–May	March – May	Presumed Absent. There is no suitable habitat for this species within the BSA.
Carquinez goldenbush *(Isocoma arguta)*	–	–	1B.1	Alkaline soils in valley and foothill grasslands. Elevation: 5 to 65 feet Bloom Period: August–December	August – December	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Alkali-sink goldfields (*Lasthenia chrysantha*)	–	–	1B.1	Alkaline vernal pools. Elevation: 0 to 655 feet Bloom Period: February–April	February – April	Presumed Absent. There is no suitable habitat for this species within the BSA.
Contra Costa goldfields *(Lasthenia conjugens)*	FE	–	1B.1	Mesic sites within cismontane woodland, playas with alkaline soils, valley and foothill grassland and vernal pools. Elevation: 0 to 1,540 feet Bloom Period: March–June	March – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Coulter's goldfields *(Lasthenia glabrata* ssp. *coulteri*)	–	–	1B.1	Coastal marshes and swamps, playas, and vernal pools. Elevation: 5 to 4,005 feet Bloom Period: February–June	February – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Delta tule pea (*Lathyrus jepsonii* var. *jepsonii)*	–	–	1B.2	Freshwater and brackish marshes and swamps. Elevation: 0 to 15 feet Bloom Period: May–July	May – July	Presumed Absent. There is no suitable habitat for this species within the BSA.
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 to 2,885 feet Bloom Period: April–June	April – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Heckard's pepper-grass *(Lepidium latipes* var. *heckardii)*	–	–	1B.2	Alkaline flats within valley and foothill grasslands. Elevation: 5 to 655 feet Bloom Period: March–May	March – May	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Woolly-headed lessingia *(Lessingia hololeuca)*	–	–	3	Clay or serpentine soils in broadleaf upland forests, coastal scrub, lower montane coniferous forests, and valley and foothill grassland. Elevation: 50 to 1,000 feet Bloom Period: June–October	June – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Mason's lilaeopsis *(Lilaeopsis masonii)*	–	–	1B.1	Brackish or freshwater marshes or swamps and riparian scrub. Elevation: 0 to 35 feet Bloom Period: April–November	April – November	Presumed Absent. There is no suitable habitat for this species within the BSA.
Delta mudwort (*Limosella australis*)	–	–	2B.1	Usually mud banks in freshwater or brackish marshes and swamps and riparian scrub. Elevation: 0 to 10 feet Bloom Period: May–August	May – August	Presumed Absent. There is no suitable habitat for this species within the BSA.
Napa lomatium (*Lomatium repostum*)	–	–	1B.24.2	Sometimes gravelly soils, often openings, sometimes rocky soils, rarely sandstone, serpentine soils, and often volcanic areas within broadleafed upland forest, chaparral, and cismontane woodland. On flat to steep slopes in chaparral and woodland (mixed evergreen forest often with madrone). Serpentine soils in chaparral and cismontane woodland. Elevation: 295 to 4,725 feet Bloom Period: March–June	March – June	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Three-ranked hump moss (*Meesia triquetra*)	–	–	4.2	On soil in bogs and fens, meadows and seeps, subalpine coniferous forest, and mesic areas of upper montane coniferous forest. Elevation: 4,265 to 9,690 feet Bloom Period: July	July	Presumed Absent. There is no suitable habitat for this species within the BSA.
Marsh microseris *(Microseris paludosa)*	–	–	1B.2	Moist grassland open woodland (Jepson eFlora Project 2024c). Closed–cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland. Elevation: 15 to 1,165 feet Bloom Period: April–June	April – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Little mousetail *(Myosurus minimus* ssp. *apus)*	–	–	3.1	Mesic areas (USACE 2020) of valley and foothill grassland and alkaline vernal pools. Elevation: 65 to 2,100 feet Bloom Period: March–June	March – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Baker's navarretia *(Navarretia leucocephala* ssp. *bakeri)*	–	–	1B.1	Vernal pools and mesic areas within cismontane woodlands, lower montane coniferous forests, meadows and seeps, and valley and foothill grasslands. Elevation: 15 to 5,710 feet Bloom Period: April–July	April – July	Presumed Absent. There is no suitable habitat for this species within the BSA.
Colusa grass *(Neostapfia colusana)*	FT	CE	1B.1	Large vernal pools with adobe soils. Elevation: 15 to 655 feet Bloom Period: May–August	May – August	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
San Joaquin Valley Orcutt grass *(Orcuttia inaequalis)*	FT	CE	1B.1	Vernal pools. Elevation: 35 to 2,475 feet Bloom Period: April–September	April – September	Presumed Absent. There is no suitable habitat for this species within the BSA.
Gairdner's yampah *(Perideridia gairdneri* ssp. *gairdneri)*	–	–	4.2	Vernal pools and vernally mesic areas in broadleafed upland forest, chaparral, coastal prairie, and valley and foothill grassland. Elevation: 0 to 2,000 feet Bloom Period: June–October	June – October	Presumed Absent. There is no suitable habitat for this species within the BSA.
Bearded popcornflower (*Plagiobothrys hystriculus*)	–	–	1B.1	Often in vernal swales, and in mesic areas of valley and foothill grassland and vernal pool margins. Elevation: 0 to 900 feet Bloom Period: April–May	April – May	Presumed Absent. There is no suitable habitat for this species within the BSA.
Delta woolly-marbles (*Psilocarphus brevissimus* var. *multiflorus*)	–	–	4.2	Vernal pools. Elevation: 35 to 1,640 feet Bloom Period: May-June	May – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
California alkali grass (*Puccinellia simplex*)	–	–	1B.2	Alkaline, vernally mesic areas and sinks, flats and lake margins in chenopod scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation: 5 to 3,050 feet Bloom Period: March–May	March – May	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Lobb's aquatic buttercup (*Ranunculus lobbii*)	–	–	4.2	Mesic areas of cismontane woodland, North Coast coniferous forest, valley and foothill grassland, and vernal pools. Elevation: 50 to 1,540 feet Bloom Period: February–May	February – May	Presumed Absent. There is no suitable habitat for this species within the BSA.
Keck's checkerbloom *(Sidalcea keckii)*	FE	–	1B.1	Serpentine and clay soils within cismontane woodland and valley and foothill grasslands. Elevation: 245 to 2,135 feet Bloom Period: April–May	April – May	Presumed Absent. There is no suitable habitat for this species within the BSA.
Long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*)	–	–	1B.2	Alkaline meadows, seeps, marshes, and swamps. Elevation: 0 to 835 feet Bloom Period: February–May	February – May	Presumed Absent. There is no suitable habitat for this species within the BSA.
Northern slender pondweed (*Stuckenia filiformis* ssp. *alpina*)	–	–	2B.2	Assorted shallow freshwater marshes and swamps. Elevation: 985 to 7,055 feet Bloom Period: May–July	May – July	Presumed Absent. There is no suitable habitat for this species within the BSA.
Suisun Marsh aster (*Symphyotrichum lentum*)	–	–	1B.2	Brackish and freshwater marshes and swamps. Elevation: 0 to 10 feet Bloom Period: May–November	May – November	Presumed Absent. There is no suitable habitat for this species within the BSA.
Two-fork clover *(Trifolium amoenum)*	FE	–	1B.1	Moist, heavy soils, disturbed areas (Jepson eFlora Project 2024d). Sometimes associated with serpentine soils in coastal bluff scrub and valley and foothill grassland. Elevation: 15 to 1,360 feet Bloom Period: April–June	April – June	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Saline clover *(Trifolium hydrophilum)*	–	–	1B.2	Marshes and swamps, mesic and alkaline areas in valley and foothill grassland, and vernal pools. Elevation: 0 to 985 feet Bloom Period: April–June	April – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Solano grass *(Tuctoria mucronata)*	FE	CE	1B.1	Vernal pools and other mesic areas of valley and foothill grasslands. Elevation: 15 to 35 feet Bloom Period: April–August	April – August	Presumed Absent. There is no suitable habitat for this species within the BSA.
Oval-leaved viburnum *(Viburnum ellipticum)*	–	–	2B.3	Chaparral, cismontane woodland, and lower montane coniferous forest communities. Elevation: 705 to 4,595 feet Bloom Period: May–June	May – June	Presumed Absent. There is no suitable habitat for this species within the BSA.
Invertebrates						
Blennosperma vernal pool andrenid bee *(Andrena blennospermatis)*	–	–	CNDDB	Vernal pool grassland: this bee is oligolectic on vernal pool *Blennosperma*.	–	Presumed Absent. There is a lack of floral resources within the BSA.
Crotch 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	–	Presumed Absent. There is a lack of floral resources within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Western bumble bee *(Bombus occidentalis)*	–	CC	–	Meadows and grasslands with abundant floral resources. Primarily nests underground. Largely restricted to high elevation sites in the Sierra Nevada, although rarely detected on the California coast. Survey Period: April-November	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Conservancy fairy shrimp (*Branchinecta conservatio)*	FE	–	–	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	–	–	Vernal pools/wetlands. Survey Period: November–April when surface water is present.	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Monarch butterfly (*Danaus plexippus*)	FC	–	–	Overwinters along coastal California in wind-protected groves of eucalyptus, Monterey pine and cypress with nearby nectar and water sources; disperses in spring throughout California. Adults breed and lay eggs during the spring and summer, feeding on a variety of nectar sources; eggs are laid exclusively on milkweed plants.	–	Presumed Absent. There is a lack of floral and water resources within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**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.	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Delta Green Ground Beetle *(Elaphrus viridis)*	FT	–	–	Vernal pool edges. Currently found only in the greater Jepson Prairie area in south-central Solano County. Active during the first warm days of late winter/ early spring. Returns to dormant phase during the hot, dry summer months. Survey Period: April-November	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*)	–	–	CNDDB	Fresh water springs, seeps, farm ponds, vernal pools, and slow-moving streams in Sacramento and San Joaquin valleys.	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	–	–	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Callippe silverspot butterfly (*Speyeria callippe callippe*)	FE	–	–	Restricted to northern coastal scrub of the San Francisco peninsula. Host plant is johnny jump-up (*Viola pedunculata*). Survey Period: May–July	–	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Amphibians						
California tiger salamander (Central California DPS) (*Ambystoma californiense*)	FT	CT	CDFW 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.	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Foothill yellow-legged frog Northwest/North Coast Clade (*Rana boylii*)	–	–	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. Northern Coast Ranges, Klamath Mountains, and Cascade Range. Survey Period: May–October.	–	Presumed Absent. There is no suitable habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
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 – September	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Reptiles						
Northwestern pond turtle (*Actinemys marmorata*)	FPT	–	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	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Birds						
Ridgway's rail (California Ridgway's rail) *(Rallus obsoletus obsoletus)*	FE	CE	CFP	San Francisco and San Pablo Bay tidal marshes, sloughs, with pickleweed *(Salicornia* spp.), cordgrass *(Spartina* spp.), and gum plant *(Grindelia* spp.). Nesting: March-August	–	Presumed Absent. There is no suitable nesting habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
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	–	Presumed Absent. There is no suitable nesting habitat for this species within the BSA.
Mountain plover (*Charadrius montanus*)	–	–	BCC, SSC	Breeds in the Great Plains/Midwestern US; winters in California, Arizona, Texas, and Mexico; wintering habitat in California includes tilled fields, heavily grazed open grassland, burned fields, and alfalfa fields. Wintering: September-March	–	Presumed Absent. There is no suitable wintering habitat for this species within the BSA.
Willet (*Tringa semipalmata*)	–	–	BCC	Breeds locally in interior of western North America. In California, breeding range includes the Klamath Basin and Modoc Plateau and portions of Mono and possibly Inyo counties. Breeding habitat includes prairies, Breeds in wetlands and grasslands on semiarid plains; in uplands near brackish or saline wetlands; prefers temporary, seasonal, and alkali wetlands over semipermanent and permanent wetlands. Nesting: April-August	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Western gull *(Larus occidentalis)*	–	–	BCC	Breeds on offshore islands and rocks along the Pacific Coast from Washington to Baja California. Western gulls breed on islands, including offshore islands, rocky islets, abandoned piers, channel markers, dikes in commercial salt flats with rocky or vegetated areas with adequate cover. Nesting: April-August	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
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 the coast and inland (Central Valley, Salton Sea). Nesting: April-August	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
Great egret *(Ardea alba)*	–	–	CNDDB	Colonial nester; nests in woody vegetation, shrubs and trees usually near lakes, ponds, marshes estuaries, human-made impoundments, or natural and human-made islands. Nesting: March-July	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Snowy egret (*Egretta thula*)	–	–	CNDDB	Colonial nesters; nests in coastal and inland wetlands in isolated sites. Nesting habitat includes a variety of trees, including cactus, along large rivers, reservoirs/lakes, grassy marshes, wet meadows, irrigation channels, and estuaries. Nesting: March-August	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
Black-crowned night heron (*Nycticorax nycticorax*)	–	–	CNDDB	Colonial nester; Nests in trees, usually above water, within open shrub/grassland, wetlands, riparian, urban habitats, and in rocky crevices on islands. Nesting: March-August	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
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	–	Potential to Occur. There is suitable nesting habitat for this species within the immediate vicinity of the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
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, riverbanks, 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	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
Northern harrier (*Circus hudsonius*)	–	–	BCC, SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities. Nesting: April-September	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
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	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
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	–	Potential to Occur. There is suitable nesting and foraging habitat for this species in the immediate vicinity of the BSA.
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	–	Low Potential to Occur. There is marginally suitable foraging habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
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. There is marginally suitably burrow habitat within the BSA.
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	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
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	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**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	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
Suisun song sparrow (*Melospiza melodia maxillaris*)	–	–	SSC	Resident of brackish marshes of Suisun Bay. Year-round resident; nests March-July	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
Yellow-breasted Chat (*Icteria virens*)	–	–	SSC	Early successional riparian habitats with a well-developed shrub layer and an open canopy. Narrow borders of streams, creeks, sloughs, and rivers. Taller trees like cottonwood (*Populus* sp.) and alder (*Alnus* sp.) are necessary for song perches (Shuford 2008). Nesting: March-September	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
Bullock's oriole (*Icterus bullockii*)	–	–	BCC	Breeding habitat includes riparian and oak woodlands. Nesting: March-July	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
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	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.
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	–	Presumed Absent. There is no suitable breeding habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
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 2024). Survey Period: April-September	–	Low Potential to Occur. There is marginally suitable roosting habitat for this species within the BSA.
Townsend's big-eared bat *(Corynorhinus townsendii)*	–	–	SSC	Occurs throughout the west and is distributed from the southern portion of British Columbia south along the Pacific coast to central Mexico and east into the Great Plains, with isolated populations occurring in the central and eastern United States. It has been reported in a wide variety of habitat types ranging from sea level to 3,300 meters. Habitat associations include coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Roosting can occur within caves, mines, buildings, rock crevices, trees. Survey Period: April-September	–	Low Potential to Occur. There is marginally suitable roosting habitat for this species within the BSA.

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			
Western red bat (*Lasiurus frantzii*)	–	–	SSC	Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2024). Survey Period: April-September	–	Presumed Absent. Due to the lack of nearby riparian habitat the BSA does not provide suitable roosting habitat for this species.
Salt-marsh harvest mouse *(Reithrodontomys raviventris)*	FE	CE	CFP	Saline emergent marsh. Survey Period: Any season	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
Suisun shrew (*Sorex ornatus sinuosus*)	–	–	SSC	Tidal marshes of the northern shores of San Pablo and Suisun bays. Survey Period: Any season	–	Presumed Absent. There is no suitable habitat for this species within the BSA.
American badger *(Taxidea taxus)*	-	-	SSC, SSHCP Covered Species	Drier open stages of most shrub, forest, and herbaceous habitats with friable soils.	Any season	Presumed Absent. There is no suitable habitat for this species within the BSA.

Status Codes:

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

Table 2. Special-Status Species Evaluated for the Study Area						
Common Name (*Scientific Name*)	**Status**			**Habitat Description**	**Survey Period**	**Potential To Occur Onsite**
	ESA	**CESA**	**Other**			

CNDDB Species that is tracked by CDFW's CNDDB but does not have any of the above special-status designations otherwise
1B CRPR/Rare or Endangered in California and elsewhere
2A CRPR/Plants presumed extirpated in California but common elsewhere
2B CRPR/Plants rare, threatened, or endangered in California but more common elsewhere
3 CRPR/Plants About Which More Information is Needed – A Review List
4 CRPR/Plants of Limited Distribution – A Watch List
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)
0.3 Threat Rank/Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
Delisted Formally Delisted

Notes: BSA = Biological Study Area; CDFW = California Department of Fish and Wildlife; CESA = California Endangered Species Act; CRPR = California Rare Plant Rank; DPS = Distinct Population Segment; ESA = Endangered Species Act; SSHCP = South Sacramento Habitat Conservation Plan; USACE = U.S. Army Corps of Engineers; USFWS = U.S. Fish and Wildlife Service; WBWG = Western Bat Working Group

4.6.1 Birds

4.6.1.1 White-tailed Kite

White-tailed kite (*Elanus leucurus*) 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 two CNDDB occurrences of white-tailed kites within 5 miles of the BSA (CDFW 2024). The trees immediately adjacent to the BSA's southern areas represent suitable breeding habitat for this species. White-tailed kites have the potential to occur within the BSA.

4.6.1.2 Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and is protected pursuant to the California Endangered Species Act. 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 (*Microtus californicus*), California ground squirrel (*Otospermophilus 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 15 CNDDB occurrences of Swainson's hawk within 5 miles of the BSA (CDFW 2024). The trees immediately north of the BSA's southern areas represent suitable breeding habitat and the undeveloped annual grassland within the BSA represents potential foraging habitat for this species. Swainson's hawk has the potential to occur within the BSA.

4.6.1.3 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 manmade structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (California Department of Fish and Game [CDFG] 2012). The breeding season typically occurs between February 1 and August 31 (CDFG 2012).

There are two CNDDB occurrences of burrowing owl within 5 miles of the BSA (CDFW 2024). The annual grassland in the BSA's northern parcel represents marginally suitable burrowing habitat for this species. Burrowing owls have a low potential to occur within the BSA. No burrowing owls or potentially occupied burrows were found onsite during the initial site reconnaissance.

4.6.2 Mammals

4.6.2.1 Pallid Bat

The pallid bat (*Antrozous pallidus*) is not listed pursuant to either the federal or California ESAs; however, this species is considered an SSC by CDFW. The pallid bat is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. This species ranges throughout North America from the interior of British Columbia south to Mexico, and east to Texas. The pallid bat inhabits low elevation (below 6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forest (Philpott 1996; Western Bat Working Group [WBWG] 2024). This species roosts alone or in groups in the crevices of rocky outcrops and cliffs, caves, mines, trees, and in various human structures such as bridges, and barns. Pallid bats are feeding generalists that glean a variety of arthropod prey from surfaces as well as capturing insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Although this species utilizes echolocation to locate prey, they often use only passive acoustic cues. This species is not thought to migrate long distances between summer and winter sites (WBWG 2021).

There are no CNDDB occurrences of pallid bat within 5 miles of the BSA (CDFW 2024). The trees and building in the southernmost area of the BSA represent marginally suitable roosting habitat for this species. Pallid bat has a low potential to occur within the BSA.

4.6.2.2 Townsend's Big-eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is not listed pursuant to either the California or federal ESAs; however, this species is considered an SSC by CDFW. Townsend's big-eared bat is a fairly large bat with prominent bilateral nose lumps and large rabbit-like ears. This species occurs throughout the west and ranges from the southern portion of British Columbia south along the Pacific coast to central Mexico and east into the Great Plains. This species has been reported from a wide variety of habitat types and elevations from sea level to 10,827 feet above MSL. Habitats used include coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Its distribution is strongly associated with the availability of caves and cave-like roosting habitat including abandoned mines, buildings, bridges, rock crevices, and hollow trees. This species is readily detectable when roosting due to their habit of roosting pendant-like on open surfaces. Townsend's big-eared bat is a moth specialist with more than 90 percent of its diet composed of lepidopterans. Foraging habitats are generally edge habitats along streams adjacent to and within a variety of wooded habitats. This species often travels long distances when foraging and large home ranges have been documented in California (WBWG 2021).

There are no CNDDB occurrences of Townsend's big-eared bat within 5 miles of the BSA (CDFW 2024). The trees and building in the southernmost area of the BSA represent marginally suitable roosting habitat for this species. Townsend's big-eared bat has a low potential to occur within the BSA.

4.7 Critical Habitat or Essential Fish Habitat

No designated critical habitat or essential fish habitat have been mapped within the BSA (NMFS 2024a, 2024b).

4.8 Wildlife Movement Corridors and Nursery Sites

No essential wildlife movement corridors or nursery sites are located within the BSA (CDFW 2024).

4.9 Protected Trees

Per the Fairfield Conservation Ordinance, a tree permit is required for removal of any protected tree. Protected trees in this ordinance are any trees on public lands, oak (*Quercus sp.*), bay laurel (*Umbellularia californica*), madrone (*Arbutus menzesei*), or buckeye (*Aesculus californica*) species greater than 6 inches

DBH, or trees that have historical, aesthetic, or habitat value. The recommended measure in Section 5.5 will avoid or minimize impacts to any protected tree resources.

5.0 IMPACT ASSESSMENT AND RECOMMENDATIONS

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?

5.1.1 Special-Status Wildlife Species

5.1.1.1 Western Burrowing Owl Avoidance and Minimization Measures

Although ECORP did not observe burrowing owls or their sign (e.g., white-wash, pellets, or feathers) within the BSA, the annual grassland in the BSA's northern parcel provides marginally suitable habitat. Therefore, the following general Avoidance and Minimization Measures (AMM) are recommended to avoid impacts to western burrowing owl:

- A preconstruction survey for nesting burrowing owl will be conducted by a qualified biologist within 14 days prior to commencement of Project activities within the BSA and a 250-foot buffer. Surveys shall be conducted at appropriate times and in appropriate weather conditions to maximize detection. If active burrowing owl burrows are found, an avoidance buffer will be immediately established, and an avoidance plan will be prepared in consultation with CDFW prior to the commencement of any ground-disturbing activities.

5.1.1.2 Swainson's Hawk

Swainson's hawk has the potential to occur immediately adjacent to the BSA. In order to avoid potential impacts to Swainson's hawk, ECORP recommends the following avoidance and minimization measures:

- If Project activities are scheduled during the Swainson's hawk nesting season (March 1 to August 31), then prior to beginning work on the Project, a qualified biologist shall survey for Swainson's hawk nesting activity. The survey area shall include a 0.5-mile distance surrounding the BSA. The qualified biologist shall conduct surveys according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). Survey results shall be submitted to CDFW for review.
- If Swainson's hawk nesting activity is observed during the survey, then the survey results shall be submitted to CDFW for review and acceptance prior to starting Project activities. If the qualified biologist identifies nesting Swainson's hawks, then they shall recommend a no disturbance buffer, and the contractor shall implement the buffer under the supervision of a qualified biologist. Project activities shall be prohibited within the no disturbance buffer while the nest is occupied

and active. Project activities may proceed within the buffer when a qualified biologist determines that the young have fledged or that the nest is no longer active. If there is a lapse in Project-related work of 14 days or longer, then an additional survey shall be conducted prior to resuming Project activities.

5.1.1.3 Nesting Birds (including Raptors)

The BSA supports potential nesting habitat for special-status birds, including raptors, and other common birds protected under the MBTA. Prior to ground-disturbing activities, ECORP recommends the following measures to minimize potential impacts to special-status birds:

- A qualified biologist shall conduct a preconstruction survey for nesting raptors, within the BSA and a 500-foot buffer, within 14 days of commencement of Project activities (can be conducted concurrently with nesting bird surveys, as appropriate). If an active nest is located, a no-disturbance buffer will be established as determined by the biologist and maintained until a qualified biologist determines the young have fledged or the nest is no longer occupied.
- A qualified biologist shall conduct a preconstruction nesting bird (non-raptor) survey (can be conducted concurrently with raptor surveys, as appropriate) of all areas associated with construction activities, and a 100-foot buffer around these areas, within 14 days prior to commencement of construction. If active nests are found, a no-disturbance buffer around the nest shall be established. The buffer distance shall be established by a qualified biologist. The buffer shall be maintained until the fledglings are capable of flight and become independent of the nest, to be determined by a qualified biologist. Once the young are independent of the nest, no further measures are necessary.

5.1.1.4 Pallid Bat, Townsend's Bat, and Day-Roosting Bats

Pallid bat, Townsend's bat, and day-roosting bats have the potential to occur within suitable day-roosting habitat in the trees and building located in the southernmost area of the BSA. If tree and/or building removal will occur during project activities, impacts to pallid bats, Townsend's bats, and day-roosting bats may potentially occur. To ensure that potential impacts are less than significant, ECORP recommends the following AMMs:

- A qualified bat biologist will conduct a bat habitat assessment for suitable bat roosting habitat prior to any construction activities. The habitat assessment should be conducted one year prior to the initiation of construction activities, if feasible, and no less than 30 days prior to the initiation of construction activities. If no suitable roosting habitat is identified, no further measures are necessary. If suitable roosting habitat and/or signs of bat use are identified during the assessment, the roosting habitat should be avoided to the extent possible.
- If suitable roosting habitat is found in trees and those trees will be removed, a qualified biologist shall conduct focused surveys during the bat active period, March to September, or when evening temperatures are not below 45 Degrees Fahrenheit (°F) and rain is not over 0.5 inch in 24 hours, to determine whether roosting bats are present. If no bats are found onsite, no further measures

will be necessary. If bats are found roosting in trees that cannot be avoided, the trees will be removed either (1) between approximately March 1 (or when evening temperatures are above 45°F and rainfall less than 0.5 inch in 24 hours occurs) and April 15, prior to parturition of pups; or (2) between September 1 and October 15 (or prior to evening temperatures dropping below 45°F and onset of rainfall greater than 0.5 inch in 24 hours). A tree with potential roosting habitat may be removed during the maternity season (April 15 to September 1) only if the results of an evening emergence survey are negative for bat presence and it is removed by the two-step tree removal process described below. If bat presence is found during the emergence survey, then removal of that tree must wait until after maternity season.

- Two-step tree removal will occur over two consecutive days under the supervision of a qualified bat biologist. On Day 1, small branches and small limbs containing no cavities, crevices, or exfoliating bark (or outer fronds in the case of palm trees), as identified by a qualified bat biologist, shall be removed first, using chainsaws only (i.e., no dozers, backhoes). The following day (Day 2), the remainder of the tree is to be felled/removed.
- If roosting bats, bat sign, or evidence of previous occupation by bats, is found in any structures that will be impacted by project activities during the bat habitat assessment, a bat management plan will be prepared by a qualified bat biologist and submitted to CDFW. The Bat Management Plan will provide a site-specific approach to avoiding impacts to roosting bats and implementing appropriate mitigation strategies for the loss of bat roosting habitat present within the structures based on the results of the bat habitat assessment and subsequent emergence and acoustic surveys. If no sign of bat use is found no further measures are necessary.

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?

The BSA does not contain any sensitive natural communities.

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?

The BSA does not contain any aquatic resources; therefore, no AMMs are recommended.

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?

The BSA does not contain any wildlife movement corridors or nursery sites; therefore, no AMMs are recommended.

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?

The BSA may include protected trees subject to the Fairfield Tree Conservation Ordinance. If trees will be removed, the following measure is recommended to avoid impacts to protected trees:

- A qualified biologist will conduct an arborist survey to determine if any protected tree resources are located within the BSA per the criteria of the Fairfield Tree Conservation Ordinance. If protected tree resources are found in the BSA, the Project shall avoid ground or vegetation disturbance within the dripline of protected trees subject to the Fairfield Tree Conservation Ordinance. Mapping of protected tree driplines in the BSA and demarcation of avoidance zones during construction may be required. If protected trees are to be impacted by Project activities, the appropriate tree permits shall be obtained prior to initiation of impacting activities.

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?

The Proposed Project would not conflict with any local or regional conservation plans.

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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 (Mt. Vaca (3812241) OR Allendale (3812148) OR Dixon (3812147) OR Fairfield North (3812231) OR Fairfield South (3812221) OR Elmira (3812138) OR Dozier (3812137) OR Denverton (3812128) OR Birds Landing (3812127))

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
AAABH01022	***Rana draytonii*** California red-legged frog	Threatened	None	G2G3	S2S3	SSC
AAABH01051	***Rana boylii pop. 1*** foothill yellow-legged frog - north coast DPS	None	None	G3T4	S4	SSC
ABNGA04040	***Ardea alba*** great egret	None	None	G5	S4	
ABNGA06030	***Egretta thula*** snowy egret	None	None	G5	S4	
ABNGA11010	***Nycticorax nycticorax*** black-crowned night heron	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
ABNKC11011	***Circus hudsonius*** northern harrier	None	None	G5	S3	SSC
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
ABNME01010	***Coturnicops noveboracensis*** yellow rail	None	None	G4	S2	SSC
ABNME03041	***Laterallus jamaicensis coturniculus*** California black rail	None	Threatened	G3T1	S2	FP
ABNME05011	***Rallus obsoletus obsoletus*** California Ridgway's rail	Endangered	Endangered	G3T1	S2	FP
ABNNB03100	***Charadrius montanus*** mountain plover	None	None	G3	S2	SSC
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S2	SSC
ABNSB13040	***Asio flammeus*** short-eared owl	None	None	G5	S2	SSC
ABPBX1201A	***Geothlypis trichas sinuosa*** saltmarsh common yellowthroat	None	None	G5T3	S3	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
ABPBX24010	***Icteria virens*** yellow-breasted chat	None	None	G5	S4	SSC
ABPBXA0020	***Ammodramus savannarum*** grasshopper sparrow	None	None	G5	S3	SSC
ABPBXA301K	***Melospiza melodia maxillaris*** Suisun song sparrow	None	None	G5T3	S2	SSC
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	Threatened	G1G2	S2	SSC
AFCAA01031	***Acipenser medirostris pop. 1*** green sturgeon - southern DPS	Threatened	None	G2T1	S1	SSC
AFCHB03010	***Spirinchus thaleichthys*** longfin smelt	Proposed Endangered	Threatened	G5	S1	
AFCJB34020	***Pogonichthys macrolepidotus*** Sacramento splittail	None	None	G3	S3	SSC
AMABA01103	***Sorex ornatus sinuosus*** Suisun shrew	None	None	G5T1T2Q	S1S2	SSC
AMACC05032	***Lasiurus cinereus*** hoary bat	None	None	G3G4	S4	
AMACC05080	***Lasiurus frantzii*** western red bat	None	None	G4	S3	SSC
AMACC08010	***Corynorhinus townsendii*** Townsend's big-eared bat	None	None	G4	S2	SSC
AMAFF02040	***Reithrodontomys raviventris*** salt-marsh harvest mouse	Endangered	Endangered	G1G2	S3	FP
AMAJF04010	***Taxidea taxus*** American badger	None	None	G5	S3	SSC
ARAAD02030	***Emys marmorata*** western pond turtle	Proposed Threatened	None	G3G4	S3	SSC
CTT42110CA	***Valley Needlegrass Grassland*** Valley Needlegrass Grassland	None	None	G3	S3.1	
CTT44120CA	***Northern Claypan Vernal Pool*** Northern Claypan Vernal Pool	None	None	G1	S1.1	
CTT52200CA	***Coastal Brackish Marsh*** Coastal Brackish Marsh	None	None	G2	S2.1	
CTT52410CA	***Coastal and Valley Freshwater Marsh*** Coastal and Valley Freshwater Marsh	None	None	G3	S2.1	
ICBRA03010	***Branchinecta conservatio*** Conservancy fairy shrimp	Endangered	None	G2	S2	
ICBRA03030	***Branchinecta lynchi*** vernal pool fairy shrimp	Threatened	None	G3	S3	
ICBRA03150	***Branchinecta mesovallensis*** midvalley fairy shrimp	None	None	G2	S2S3	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
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	
IICOL36010	***Elaphrus viridis*** Delta green ground beetle	Threatened	None	G1	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?	
IIHEM07010	***Saldula usingeri*** Wilbur Springs shorebug	None	None	G2	S2	
IIHYM24252	***Bombus occidentalis*** western bumble bee	None	Candidate Endangered	G3	S1	
IIHYM24260	***Bombus pensylvanicus*** American bumble bee	None	None	G3G4	S2	
IIHYM24480	***Bombus crotchii*** Crotch's bumble bee	None	Candidate Endangered	G2	S2	
IIHYM35030	***Andrena blennospermatis*** Blennosperma vernal pool andrenid bee	None	None	G2	S1	
IILEPJ6091	***Speyeria callippe callippe*** callippe silverspot butterfly	Endangered	None	G5T1	S1	
IILEPP2012	***Danaus plexippus plexippus pop. 1*** monarch - California overwintering population	Candidate	None	G4T1T2Q	S2	
PDAPI0M051	***Cicuta maculata var. bolanderi*** Bolander's water-hemlock	None	None	G5T4T5	S2?	2B.1
PDAPI0Z130	***Eryngium jepsonii*** Jepson's coyote-thistle	None	None	G2	S2	1B.2
PDAPI19030	***Lilaeopsis masonii*** Mason's lilaeopsis	None	Rare	G2	S2	1B.1
PDAST2E1G1	***Cirsium hydrophilum var. hydrophilum*** Suisun thistle	Endangered	None	G2T1	S1	1B.1
PDAST4R0P2	***Centromadia parryi ssp. parryi*** pappose tarplant	None	None	G3T2	S2	1B.2
PDAST57050	***Isocoma arguta*** Carquinez goldenbush	None	None	G1	S1	1B.1
PDAST5L030	***Lasthenia chrysantha*** alkali-sink goldfields	None	None	G2	S2	1B.1
PDAST5L040	***Lasthenia conjugens*** Contra Costa goldfields	Endangered	None	G1	S1	1B.1

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDAST5L0A1	***Lasthenia glabrata ssp. coulteri*** Coulter's goldfields	None	None	G4T2	S2	1B.1
PDAST6E0D0	***Microseris paludosa*** marsh microseris	None	None	G2	S2	1B.2
PDASTE8470	***Symphyotrichum lentum*** Suisun Marsh aster	None	None	G2	S2	1B.2
PDBOR0V0H0	***Plagiobothrys hystriculus*** bearded popcornflower	None	None	G2	S2	1B.1
PDBRA1M0K1	***Lepidium latipes var. heckardii*** Heckard's pepper-grass	None	None	G4T1	S1	1B.2
PDCAM060C0	***Downingia pusilla*** dwarf downingia	None	None	GU	S2	2B.2
PDCAM0C010	***Legenere limosa*** legenere	None	None	G2	S2	1B.1
PDCAR0W062	***Spergularia macrotheca var. longistyla*** long-styled sand-spurrey	None	None	G5T2	S2	1B.2
PDCHE040B0	***Atriplex cordulata var. cordulata*** heartscale	None	None	G3T2	S2	1B.2
PDCHE041F3	***Extriplex joaquinana*** San Joaquin spearscale	None	None	G2	S2	1B.2
PDCHE042L0	***Atriplex depressa*** brittlescale	None	None	G2	S2	1B.2
PDCHE042P0	***Atriplex persistens*** vernal pool smallscale	None	None	G2	S2	1B.2
PDCPR07080	***Viburnum ellipticum*** oval-leaved viburnum	None	None	G4G5	S3	2B.3
PDFAB0F8R1	***Astragalus tener var. tener*** alkali milk-vetch	None	None	G2T1	S1	1B.2
PDFAB0F8R3	***Astragalus tener var. ferrisiae*** Ferris' milk-vetch	None	None	G2T1	S1	1B.1
PDFAB250D2	***Lathyrus jepsonii var. jepsonii*** Delta tule pea	None	None	G5T2	S2	1B.2
PDFAB40040	***Trifolium amoenum*** two-fork clover	Endangered	None	G1	S1	1B.1
PDFAB400R5	***Trifolium hydrophilum*** saline clover	None	None	G2	S2	1B.2
PDLIN01030	***Hesperolinon breweri*** Brewer's western flax	None	None	G2	S2	1B.2
PDMAL0H0R3	***Hibiscus lasiocarpos var. occidentalis*** woolly rose-mallow	None	None	G5T3	S3	1B.2
PDMAL110D0	***Sidalcea keckii*** Keck's checkerbloom	Endangered	None	G2	S2	1B.1

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDPGN085Z0	***Eriogonum truncatum*** Mt. Diablo buckwheat	None	None	G1	S1	1B.1
PDPLM0C0E1	***Navarretia leucocephala ssp. bakeri*** Baker's navarretia	None	None	G4T2	S2	1B.1
PDRAN0B1J0	***Delphinium recurvatum*** recurved larkspur	None	None	G2?	S2?	1B.2
PDSCR0J0D1	***Chloropyron molle ssp. hispidum*** hispid salty bird's-beak	None	None	G2T1	S1	1B.1
PDSCR0J0D2	***Chloropyron molle ssp. molle*** soft salty bird's-beak	Endangered	Rare	G2T1	S1	1B.2
PDSCR0R060	***Gratiola heterosepala*** Boggs Lake hedge-hyssop	None	Endangered	G2	S2	1B.2
PDSCR10030	***Limosella australis*** Delta mudwort	None	None	G4G5	S2	2B.1
PMCYP037Y0	***Carex lyngbyei*** Lyngbye's sedge	None	None	G5	S3	2B.2
PMLIL0V0C0	***Fritillaria liliacea*** fragrant fritillary	None	None	G2	S2	1B.2
PMLIL0V0F0	***Fritillaria pluriflora*** adobe-lily	None	None	G2G3	S2S3	1B.2
PMPOA4C010	***Neostapfia colusana*** Colusa grass	Threatened	Endangered	G1	S1	1B.1
PMPOA4G060	***Orcuttia inaequalis*** San Joaquin Valley Orcutt grass	Threatened	Endangered	G1	S1	1B.1
PMPOA53110	***Puccinellia simplex*** California alkali grass	None	None	G2	S2	1B.2
PMPOA6N020	***Tuctoria mucronata*** Crampton's tuctoria or Solano grass	Endangered	Endangered	G1	S1	1B.1
PMPOT03091	***Stuckenia filiformis ssp. alpina*** northern slender pondweed	None	None	G5T5	S2S3	2B.2

Record Count: 97

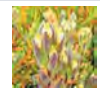
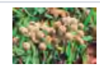
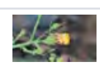
CNPS Rare Plant Inventory

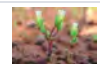
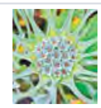
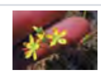
Search Results

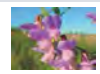
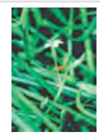
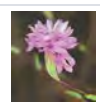
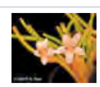
59 matches found. Click on scientific name for details

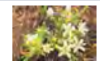
Search Criteria: 9-Quad include [3812138:3812231:3812241:3812148:3812147:3812137:3812127:3812128:3812221]

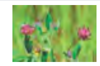
▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	Yes	1994-01-01	No Photo Available
Astragalus tener var. *tener*	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2	Yes	1994-01-01	No Photo Available
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2	Yes	1988-01-01	 © 1994 Robert E. Preston, Ph.D.
Atriplex coronata var. *coronata*	crownscale	Chenopodiaceae	annual herb	Mar-Oct	None	None	G4T3	S3	4.2	Yes	1994-01-01	 © 1994 Robert E. Preston, Ph.D.
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Yes	1994-01-01	 © 2009 Zoya Akulova
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	None	G2	S2	1B.2	Yes	2001-01-01	No Photo Available
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	Apr-Aug	None	None	G5	S3	2B.2		2001-01-01	 ©2017 Steve Matson

Centromadia parryi ssp. *parryi*	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2	Yes	2004-01-01	 © 2016 John Doyen
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	Yes	2007-05-22	 © 2019 John Doyen
Chloropyron molle ssp. *hispidum*	hispid salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	None	None	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Chloropyron molle ssp. *molle*	soft salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Nov	FE	CR	G2T1	S1	1B.2	Yes	1974-01-01	 © 2014 John Doyen
Cicuta maculata var. *bolanderi*	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	None	None	G5T4T5	S2?	2B.1		1974-01-01	 © 2007 Doreen L Smith
Cirsium hydrophilum var. *hydrophilum*	Suisun thistle	Asteraceae	perennial herb	Jun-Sep	FE	None	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	Yes	1988-01-01	No Photo Available
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2		1980-01-01	 © 2013 Aaron Arthur
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	None	None	G5	S3	4.3		1980-01-01	 ©2018 Ron Vanderhoff
Erigeron biolettii	streamside daisy	Asteraceae	perennial herb	Jun-Oct	None	None	G3?	S3?	3	Yes	1994-01-01	 ©2015 Doug Wirtz
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	Apr-Sep(Nov-Dec)	None	None	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Eryngium jepsonii	Jepson's coyote-thistle	Apiaceae	perennial herb	Apr-Aug	None	None	G2	S2	1B.2	Yes	2016-09-13	No Photo Available

Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Yes	1988-01-01	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
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2004 Carol W. Witham
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2G3	S2S3	1B.2	Yes	1974-01-01	 © 2015 Steve Matson
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
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	None	None	G2	S2	1B.2	Yes	1974-01-01	 © 2014 Neal Kramer
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Yes	1974-01-01	 © 2020 Steven Perry
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May(Jun)	None	None	G3	S3	4.2	Yes	2006-10-12	 © 2014 Aaron Schusteff
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	None	None	G1	S1	1B.1	Yes	1994-01-01	No Photo Available

Lasthenia chrysantha	alkali-sink goldfields	Asteraceae	annual herb	Feb-Apr	None	None	G2	S2	1B.1	Yes	2019-09-30	 © 2009 California State University, Stanislaus
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	FE	None	G1	S1	1B.1	Yes	1974-01-01	 © 2013 Neal Kramer
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2	Yes	2001-01-01	 © 2009 Zoya Akulova
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	None	None	G4T2	S2	1B.1		1994-01-01	 © 2013 Keir Morse
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	None	None	G5T2	S2	1B.2	Yes	1974-01-01	 © 2003 Mark Fogiel
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1	Yes	1974-01-01	 ©2000 John Game
Lepidium latipes var. *heckardii*	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	None	None	G4T1	S1	1B.2	Yes	1994-01-01	 2018 Jennifer Buck
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3	Yes	1994-01-01	 © 2015 Aaron Schusteff
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	None	CR	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	None	None	G4G5	S2	2B.1		1994-01-01	 © 2020 Richard Sage

Lomatium repostum	Napa lomatium	Apiaceae	perennial herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1974-01-01	No Photo Available
Meesia triquetra	three-ranked hump moss	Meesiaceae	moss	Jul	None	None	G5	S4	4.2		2001-01-01	 Steve Matson 2008
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	None	None	G2	S2	1B.2	Yes	2001-01-01	No Photo Available
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1		1980-01-01	No Photo Available
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1	Yes	1994-01-01	 © 2018 Barry Rice
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	Apr-Sep	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Perideridia gairdneri ssp. *gairdneri*	Gairdner's yampah	Apiaceae	perennial herb	Jun-Oct	None	None	G5T3T4	S3S4	4.2	Yes	1974-01-01	 ©2007 Neal Kramer
Plagiobothrys hystriculus	bearded popcornflower	Boraginaceae	annual herb	Apr-May	None	None	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Psilocarphus brevissimus var. *multiflorus*	Delta woolly-marbles	Asteraceae	annual herb	May-Jun	None	None	G4T3	S3	4.2	Yes	1994-01-01	No Photo Available
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G2	S2	1B.2		2015-10-15	 © 2017 Chris Winchell
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2		1974-01-01	No Photo Available
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	FE	None	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	None	None	G5T2	S2	1B.2	Yes	2017-06-16	No Photo Available

Stuckenia filiformis ssp. *alpina*	northern slender pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	None	None	G5T5	S2S3	2B.2		1994-01-01	 Dana York (2016)
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	FE	None	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	2001-01-01	 © 2005 Dean Wm Taylor
Tuctoria mucronata	Crampton's tuctoria or Solano grass	Poaceae	annual herb	Apr-Aug	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Viburnum ellipticum	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3	2B.3		1974-01-01	 © 2006 Tom Engstrom

Showing 1 to 59 of 59 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 15 April 2024].

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

West Coast Regional Office

Query Results

Degrees, Minutes, Seconds: Latitude = 38º 16' 52" N, Longitude = 122º 2' 24" W
Decimal Degrees: Latitude = 38.281, Longitude = -121.960

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

No additional Essential Fish Habitats (EFH) were identified at the report location.

Pacific Salmon EFH

Link	HUC Name	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
	Suisun Bay	Chinook Salmon	All	Pacific	Pacific Coast Salmon Plan

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pacific Coastal Pelagic Species, Jack Mackerel, Pacific (Chub) Mackerel, Pacific Sardine, Northern Anchovy - Central Subpopulation, Northern Anchovy - Northern Subpopulation, **Pacific Highly Migratory Species**, Bigeye Thresher Shark - North Pacific,

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Bluefin Tuna - Pacific, Dolphinfish (Dorado or Mahimahi) - Pacific, Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific

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

Solano 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:

Birds

NAME	STATUS
California Ridgway''s Rail *Rallus obsoletus obsoletus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered

Reptiles

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

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
Western Spadefoot *Spea hammondii* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

Insects

NAME	STATUS

Delta Green Ground Beetle Elaphrus viridis | Threatened

Wherever found

There is **final** critical habitat for this species.Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2319

Monarch Butterfly Danaus plexippus | Candidate

Wherever found

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9743

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio Wherever found There is **final** critical habitat for this species.Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
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

Flowering Plants

NAME	STATUS
Contra Costa Goldfields Lasthenia conjugens Wherever found There is **final** critical habitat for this species.Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7058	Endangered

San Joaquin Valley Orcutt Grass *Orcuttia inaequalis* | Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/5506

Showy Indian Clover *Trifolium amoenum* | Endangered

Wherever found

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6459

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 in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles"

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

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below 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. https://ecos.fws.gov/ecp/species/1626	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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "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.

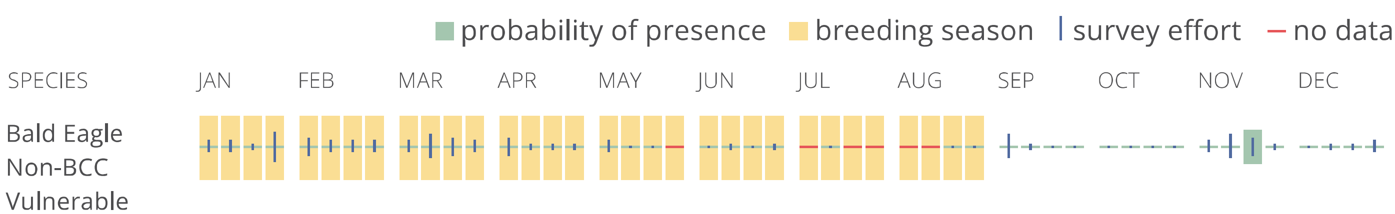
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.

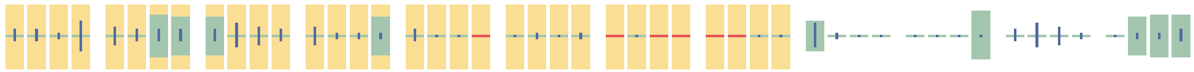
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Golden Eagle
Non-BCC
Vulnerable



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 in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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, see the PROBABILITY OF PRESENCE SUMMARY below 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. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31

Belding's Savannah Sparrow Passerculus sandwichensis beldingi
Breeds Apr 1 to Aug 15

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

Bullock's Oriole Icterus bullockii
Breeds Mar 21 to Jul 25

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

California Gull Larus californicus
Breeds Mar 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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

Mountain Plover Charadrius montanus
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/3638

Northern Harrier Circus hudsonius
Breeds Apr 1 to Sep 15

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/8350

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 Gull Larus occidentalis
Breeds Apr 21 to Aug 25

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Willet *Tringa semipalmata* Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "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:

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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 (–)

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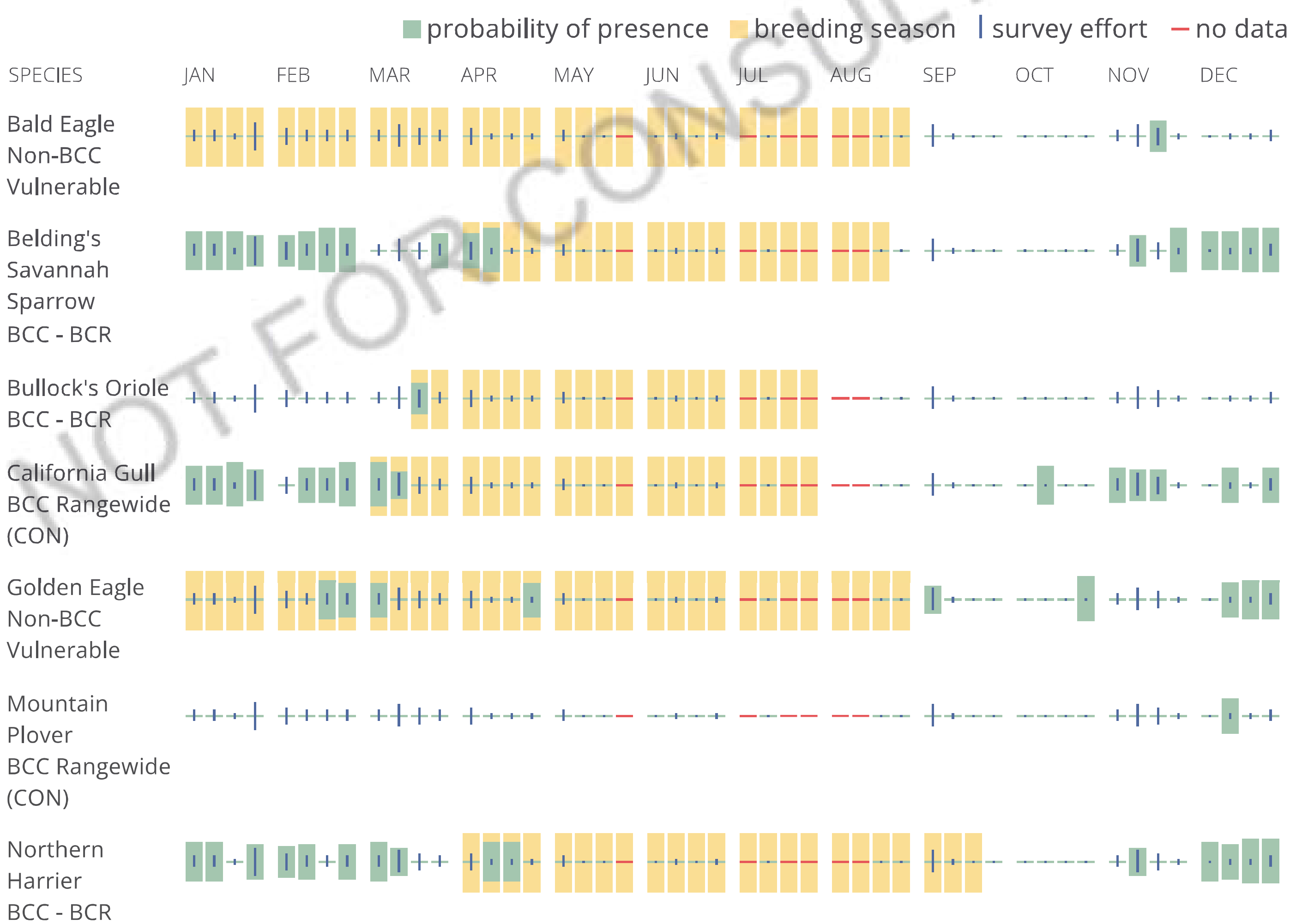
Survey Timeframe

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

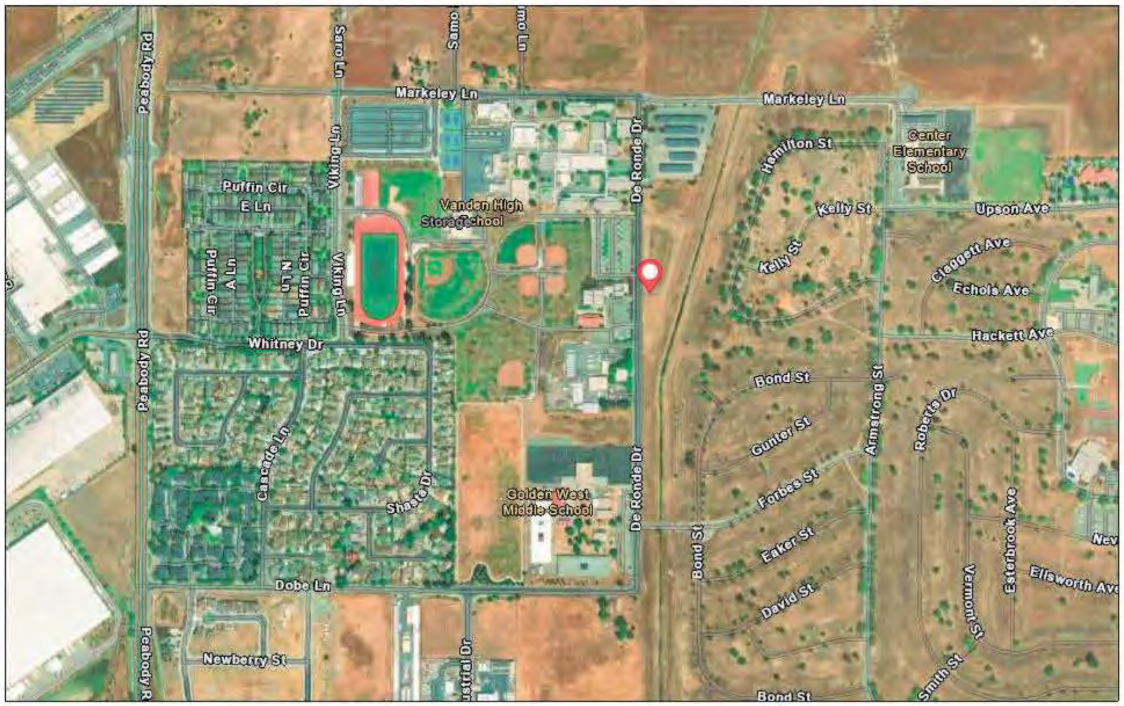
Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, 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.

Critical Habitat Report

Area of Interest (AOI) Information

Area : 203.39 km²

May 2 2024 13:43:24 Pacific Daylight Time



1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Esri Community Maps Contributors, County of Solano, California State Parks, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph

Summary

Name	Count	Area(km²)	Length(m)
All Critical Habitat Polyline	0	N/A	0
All Critical Habitat Polygon	3	0.29	N/A

All Critical Habitat Polygon

#	Scientific Name	Common Name	Listed Entity	Area(km²)
1	Acipenser medirostris	Sturgeon, green	Sturgeon, green [Southern DPS]	0.29

APPENDIX B

Representative Photographs

Former spoils area, now part of grass lawn within Golden West Middle School, facing east. Photo taken April 24, 2024

Former spoils area, now part of grass lawn within Golden West Middle School, facing west. Photo taken April 24, 2024

Center courtyard and grass lawn within Golden West Middle School, facing southeast. Photo taken April 24, 2024

Center courtyard and grass lawn within Golden West Middle School, facing west. Photo taken April 24, 2024

View of the northern parcel outside of Golden Middle School, facing north. Photo taken April 24, 2024

View of the northern parcel outside of Golden Middle School, facing northeast. Photo taken April 24, 2024

View of the northern parcel outside of Golden Middle School, facing south. Photo taken April 24, 2024

View of the northern parcel outside of Golden Middle School, facing southwest. Photo taken April 24, 2024

Appendix C Noise Modeling

Appendices

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Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

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

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

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

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

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

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

- **Maximum Sound Level (L_{max}).** The highest RMS sound level measured during the measurement period.

- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.

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

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

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

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

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

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

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

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

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00

PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

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

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

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual.* Prepared by ICF International.

Article X.
Noise Regulations

25.1401 Purpose.

It is the policy of the City of Fairfield to protect its citizens from the harmful and annoying effects of excessive noise and to protect the City's economic base by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses. This ordinance is established to regulate and control disturbing, excessive and offensive noise. This ordinance also includes regulations for new development that may cause or be exposed to excessive noise.

25.1402 Definitions.

Ambient Noise Level

> The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

A-Weighted Sound Level (dBA)

> The sound pressure level in decibels as measured on a sound level meter using the A-weighting network.

Construction

> Any site preparation, assembly, erection, substantial repair, alteration, or similar action.

Day-Night Average Sound Level (Ldn) or Community Noise Equivalency Level (CNEL)

> The 24-hour average of the A-weighted sound pressure level, with the levels during the evening and night-time hours increased. For the Ldn, the night-time period between 10:00 p.m. and 7:00 a.m. is increased by 10 dBA before averaging. For the CNEL, the evening period between 7:00 p.m. and 10:00 p.m. is increased by 5 dBA and the night-time period between 10:00 p.m. and 7:00 a.m. is increased by 10 dBA.

Decibel (dB)

> A unit for measuring the volume of a sound.

Demolition

> Any dismantling, intentional destruction or removal of structures, utilities, public or private right-of-way surfaces, or similar property.

Development Project

Any physical improvement subject to a permit under Chapter 25, Article 1 (Zoning Ordinance) of the Fairfield City Code.

Emergency

Any occurrence or set of circumstances involving actual or imminent physical trauma or property damage which demands immediate actions.

Equivalent A-Weighted Sound Level (Leq)

The sound level containing the same total energy as a time varying signal over a given sample period, typically one hour.

Impulsive Sound

Sound of short duration, usually less than one second, with an abrupt onset and rapid decay. Examples of sources of impulsive sound include explosions and the discharge of firearms.

Maximum Sound Level (Lmax)

The maximum sound level recorded during a noise event.

Noise

Any sound which annoys or disturbs a reasonable person of normal sensitivities.

Noise Sensitive Land Use

Locations where there is greater sensitivity to excess noise, including but not limited to, residences, hospitals, nursing homes, theaters, auditoriums, churches, meeting halls, schools, libraries, museums, and parks.

Non-transportation Noise Source

Any source of noise that emanates from a particular fixed location. Examples include machinery, equipment, loudspeakers, truck loading areas, and places of entertainment.

Portable Emergency Generator

Any UL listed diesel or gas fired generator not connected to a building’s electrical system and only intended to provide power during emergencies or utility power outages.

Pure Tone

Any sound which can be distinctly heard as a single pitch or a set of single pitches.

Sound Level

The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives a good correlation with subjective reactions to noise.

Stationary Emergency Generator

Any UL 2200 listed natural gas and/or propane fired generator permanently connected to the building's electrical system and only intended to provide power during emergencies or utility power outages.

Transportation Noise Source

Any source of noise that emanates from vehicles in motion either associated with ground transportation (roadways and railroads) or with air traffic (airplane and helicopter). (Ord. No. 2020-13, § 2.)

25.1403 Noise Standards.

It is unlawful for any person to create any noise at any location in the City of Fairfield that results in the exposure to other properties in the vicinity that exceeds the levels of Table 25.1401, except as otherwise provided for in this ordinance.

TABLE 25.1401 - Non-Transportation Noise Standards

		Exterior Noise-Level Standard (Applicable at Property Line)		Interior Noise-Level Standard	
Land Use	Noise-Level Descriptor	Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am)	Daytime (7 am - 10 pm)	Nighttime (10 pm - 7 am)
Residential	Leq	50	45	40	35
	Lmax	70	65	60	55
Transient lodging, hospitals, nursing homes	Leq	--	--	40	35
	Lmax	--	--	60	55
Theaters, auditoriums, music halls	Leq	--	--	35	35
Churches, meeting halls	Leq	--	--	40	40
Office buildings	Leq	--	--	45	--
Schools, libraries, museums	Leq	--	--	45	--
Playgrounds, parks	Leq	65	--	--	--

Notes: Each of the noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or recurring impulsive noises.

These noise-level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwelling).

In situations where the existing ambient noise level exceeds the noise levels indicated in the above table, any new noise source must include mitigation that reduces the noise level to the existing ambient level.

Exterior noise standards are measured at the property line of the receiving property.

25.1404 Specific Prohibitions

No person shall do, cause or suffer or permit to be done on any premises owned, occupied or controlled by such person, any of the following acts:

Auto body repairs - Repair any auto body or fender unless within completely enclosed building and the noises from such repairs are reasonably confined to such building.

Construction activities - Operating or permitting the operation of any tools or equipment used in construction, grading or demolition works between the hours of 10:00 p.m. and 7:00 a.m. except by written permission of the Director of Public Works.

Animals and fowl - Keep or maintain any animal, crowing rooster or fowl, which by any persistent sound or cry shall disturb a reasonable person owning, using, or occupying property in the neighborhood.

Sounding horns and signal devices - The sounding of any horn or signal device on any automobile, motorcycle, bus, street car, or other vehicle in any other manner or circumstances or for any other purpose than required or permitted by the vehicle code or other laws of the state.

Racing engine - Racing the engine of any motor vehicle, except when necessary to do so in the course of repairing, adjusting or testing but not so that a reasonable person owning, using, or occupying property in the neighborhood is disturbed.

Musical instruments, sound amplifiers and sounds in general - Use or operate any musical instrument or any device, machine, apparatus, or instrument for intensification or amplification of the human voice or any sound or noise in such manner that a reasonable person owning, using, or occupying property in the neighborhood is disturbed.

Places of public entertainment - Operating, playing or permitting the operation or playing of any radio, television, phonograph, drum, musical instrument, sound amplifier, or similar device which produces, reproduces or amplifies sound in any place of public entertainment such that the noise level at the property line disturbs a reasonable person owning, using, or occupying property in the neighborhood or that exceeds the standards set forth in Table 25.1401.

Explosives, firearms, and similar devices - The use or firing of explosives, firearms, or similar devices which create impulsive sound so as to cause a noise disturbance across a real property boundary or on a public space or right-of-way, except when part of a government-authorized honor guard.

Large vehicle delivery and loading - The loading, unloading or delivery of goods, merchandise, vehicles or supplies by large trucks, tractor-trailers, or other similar vehicles between the hours of 10:00 p.m. and 7:00 a.m. adjacent to a residential use, where such activities would exceed the Lmax thresholds of Table 25.1401.

25.1405 Exemptions.

Sound or noise emanating from the following sources and activities are exempt from the provisions of this ordinance:

A. Sound sources typically associated with residential uses (e.g., children at play, air conditioning and similar equipment, but not including barking dogs).

B. Sound sources associated with property maintenance (e.g., lawn mowers, edgers, blowers, pool pumps, power tools, etc.) provided such activities take place between the hours of 7:00 a.m. and 10:00 p.m.

C. Safety, warning, and alarm devices, including house and car alarms, and other warning devices that are designed to protect health, safety, and welfare, provided such devices are not negligently maintained or operated.

D. The normal operation of public and private schools typically consisting of classes and other school-sponsored activities, such as school bands and school athletic events.

E. Emergencies, involving the execution of the duties of duly authorized governmental personnel and others providing emergency response to the general public, including but not limited to sworn peace officers, emergency personnel, utility personnel, and the operation of emergency response vehicles and equipment.

F. Portable or stationary emergency generators used to provide backup power during a power outage or an emergency, or as required for routine testing of the generator. Portable and stationary emergency generators must not exceed 70 dBA during full speed diagnostics and normal operations when measured at 21 feet with no loads, must comply with all requirements of the California Fire Code as amended by the City, and must comply with setback requirements pursuant to Section 25.30.6 of this Code. Installations of stationary emergency generators shall require a building permit and must comply with the screening requirements in Section 25.30.3. Testing of generators shall be limited to the hours of 7:00 a.m. and 10:00 p.m. on any day and limited to the duration specified by the manufacturer’s recommendations. For the purpose of this subsection, an “emergency” means any city, county, or state declared emergency, or any interruption of utility power due to preventive utility shut-off measures or due to damage to utility infrastructure from accidents, earthquakes, fires, floods, storms, winds, or other acts.

G. Tree, park, and golf course maintenance activities conducted by the City or a City contractor.

H. Any activity related to the construction, development, manufacture, maintenance, testing or operation of any aircraft engine, or of any weapons system or subsystems which are owned, operated or under the jurisdiction of the United States.

I. Notwithstanding the prohibitions listed in Section 25.1404, any activities within the scope of a special events permit obtained pursuant to Chapter 12A, provided such activities take place between the hours of 7:00 a.m. and 10:00 p.m.

J. Any other activity to the extent regulation thereof has been preempted by state or federal law or regulations. (Ord. No. 2020-13, § 3; Ord. No. 2021-12, § 1.)

25.1406 Noise Standards for New Development Projects.

The following noise standards shall apply to proposed development projects, unless otherwise specifically indicated otherwise in this ordinance.

25.1407 Non-transportation Noise.

Noise created by new non-transportation noise sources shall be mitigated so as not to exceed the interior and exterior noise level standards of Table 25.1401. Where a proposed project includes non-transportation noise sources that are likely to produce noise levels exceeding the performance standards of Table 25.1401 or where a proposed project is likely to be exposed to existing non-transportation noise sources exceeding the standards of Table 15.1401, an acoustical analysis shall be required so that noise mitigation may be included in the project design.

25.1408 Ground Transportation.

The compatibility of proposed projects with existing and future noise levels due to ground transportation noise sources shall be evaluated in comparison with Table 25.1402. Where a proposed project is likely to be exposed to ground transportation noise sources exceeding the performance standards of Table 25.1402, an acoustical analysis shall be required so that noise mitigation may be included in the project design.

Table 25.1402 - <u>Ground Transportation Noise Standards</u>

	Outdoor Activity Areas (a)	Interior Spaces	
Land Use	Ldn/CNEL, dB	Ldn/CNEL, dB	Leq, dB(b)
Residential (d)	60 (c)	45	--
Transient lodging	60 (c)	45	--
Hospitals, nursing homes	6 (c)	45	--
Theaters, auditoriums, music halls	--	--	35
Churches, meeting halls	60c	--	40

Table 25.1402 - Ground Transportation Noise Standards

	Outdoor Activity Areas (a)	Interior Spaces	
Land Use	Ldn/CNEL, dB	Ldn/CNEL, dB	Leq, dB(b)
Office buildings	--	--	45
Schools, libraries, museums	--	--	45
Playgrounds, neighborhood parks	70	--	--

Note: -- = not applicable.

a Where the location of outdoor activity areas is unknown, the exterior noise-level standard shall be applied to the property line of the receiving land use.

b As determined for a typical worst-case hour during periods of use.

c Where it is not possible to reduce noise in outdoor activity areas to 60 db Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/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.

d The outdoor noise standard for a multi-family project shall be the same as the standard for playgrounds and neighborhood parks. The outdoor activity area for a multi-family project shall include all common open space and recreation areas. The standard shall not apply to parking areas and private balcony areas. Outdoor areas designated for passive use shall comply with the residential standard.

In situations where the existing ambient noise level exceeds the noise levels indicated in the above table, any new noise source must include mitigation that reduces the noise level to the existing ambient level.

25.1409 Special Standards for Residential Development Near the Fairfield-Vacaville Train Station

Any proposed residential development located within ¼ mile from the Fairfield-Vacaville Train Station (located at the southeast corner of Vanden Road and Peabody Road) shall comply with the outdoor standards set forth in Table 25.1402 to the extent feasible. However, it is the intent of the City that residential development in this area have access and orientation to the train station. To this end, the exterior noise standard may be increased beyond the levels indicated in Table 25.1402 up to a maximum of 70 Ldn/CNEL at the discretion of the Planning Commission. Residential development must still comply with the interior standards set forth in Table 25.1402. Any residential property within ¼ mile of the train station shall include homebuyer/renter notification of the presence of the railroad and the associated noise, including the presence of train whistles.

25.1410 Special Standards for New Mixed Use Projects

Where a new development proposal includes a mix of residential and nonresidential uses within the same project, the exterior non-transportation daytime noise standard for the residential component of the project shall be increased by 5 decibels.

25.1411 Aircraft Noise

New land use proposals shall comply with the Travis AFB Land Use Compatibility Plan (LUCP) and the Travis Aero Club LUCP and with General Plan Policy HS 9.2 and General Plan Programs HS 9.2A, 9.2B, 9.2C, and 9.2D.

25.1412 Acoustical Analysis

When acoustical analysis is required for a new development project under the provisions of this ordinance, the analysis shall:

Be the responsibility of the applicant.

Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.

Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

Estimate existing and projected noise levels in terms of the standards included in Tables 25.1401 and 25.1402.

Recommend appropriate mitigation to achieve compliance with this ordinance. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.

- Estimate noise exposure after the prescribed mitigation measures have been implemented.
- Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

25.1413 Enforcement

This Ordinance shall be enforced under the provisions of Chapter 1, Article II (Administrative Citations) and Chapter 12 (Offenses) of the Fairfield City Code.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/31/2024
Case Description: Phase 1 Arch Coating

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/30/2024

Case Description: Phase 1 Asphalt Demolition and Debris Haul and Onsite Reprocessing

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	50.0	0.0
Excavator	No	40		80.7	50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	84.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/31/2024
Case Description: Phase 1 Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/03/2024
Case Description: Phase 1 Paving

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	81.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/30/2024
Case Description: Phase 1 Rough Grading and Soil Export

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Grader	No	40	85.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	84.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/03/2024

Case Description: Phase 1 Site Preparation and Soil Export

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/03/2024
Case Description: Phase 1 Utilities Trenching

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/05/2024
Case Description: Phase 2 Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/05/2024
Case Description: Phase 2 Building Construction

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/31/2024
Case Description: Phase 2 Building Demolition and Debris Haul and Onsite Reprocessing

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20		89.6	50.0	0.0
Excavator	No	40		80.7	50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	84.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/31/2024
Case Description: Phase 2 Finishing and Landscaping

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 06/05/2024
Case Description: Phase 2 Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	81.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/31/2024
Case Description: Phase 1 Utilities Trenching

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residences	Residential	65.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix D Traffic/Transportation Impact Analysis

Appendices

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TRAFFIC/TRANSPORTATION IMPACT ANALYSIS

FOR THE PROPOSED

GOLDEN WEST MIDDLE SCHOOL EXPANSION

TRAVIS UNIFIED SCHOOL DISTRICT - FAIRFIELD

Prepared for

TRAVIS UNIFIED SCHOOL DISTRICT
&
PLACEWORKS

Prepared by

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MAY 2024

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I.
INTRODUCTION AND STUDY METHODOLOGY

This report summarizes the results of a traffic/transportation impact analysis that was conducted for the Golden West Middle School expansion project proposed by Travis Unified School District at 2651 De Ronde Drive in Fairfield. The school site is located on the west side of De Ronde Drive north of Dobe Lane adjacent to Travis Air Force Base. The project location is shown on Figure 1 and the proposed site plan is shown on Figure 2.

The project would be implemented in two phases. Phase one includes the installation of 16 new classrooms to accommodate incoming 6th graders, a teacher workroom, restrooms, a staff parking lot, basketball courts, and tennis courts. The new parking lot would have 25 parking spaces. Phase two includes a new administration building and a multi-use building with a kitchen, a cafeteria, and a stage. Phase one is scheduled for completion in August 2025 and Phase two is scheduled for completion in August 2026. The school's current capacity is 900 students and the capacity with the expansion would be 1,300 students. According to District staff, the number of students attending the school would increase by 450 from its existing attendance of 744 students.

An analysis has been prepared to evaluate the traffic/transportation impacts of the proposed project. The methodology for the traffic study, in general, was to 1) establish the existing baseline traffic conditions on the streets that provide access to the school site, 2) project the future baseline traffic conditions for the first full year of operation for the expanded school (year 2027), 3) estimate the levels of additional traffic that would be generated by the expanded school, 4) conduct a comparative analysis of traffic conditions with and without the proposed project.

In addition to the traffic impact analysis, the study also addresses the transportation issue areas of the CEQA environmental checklist, which includes an evaluation of the project's impacts on 1) transit, roadway, bicycle, and pedestrian facilities, 2) vehicle miles traveled (VMT), 3) increased hazards or incompatible uses, and 4) emergency access.

The traffic impact analysis is based on morning peak hour traffic volumes on the streets and intersections in the project area because traffic that is generated by a school in the morning generally coincides with the morning commuter peak period. The afternoon peak period was not evaluated because the afternoon peak hour of traffic activity for a school does not typically coincide with the commuter peak hour on the roadway network. The afternoon commuter peak period generally occurs from approximately 4:30 to 5:30 p.m., while a school generally experiences its peak traffic activity between 2:30 and 3:30 p.m. when the background traffic volumes are relatively light (as compared to the peak hours).

The traffic analysis addresses the impacts at four intersections in the vicinity of the school site, which are shown on Figure 3. The study area intersections and the type of traffic control at each intersection are listed below in Table 1. All of the intersections are in the jurisdiction of the City of Fairfield.

Golden West Middle School

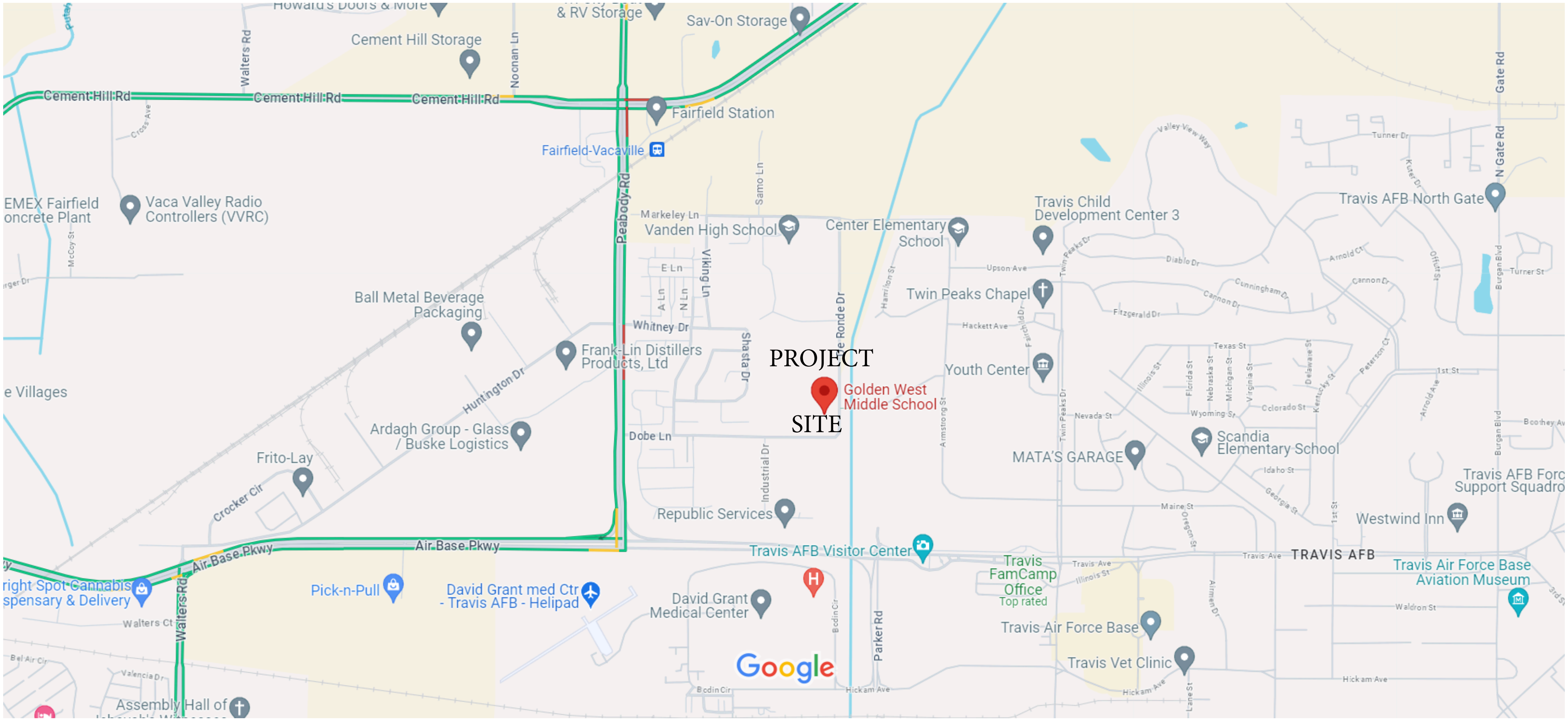

FIGURE 1
LOCATION MAP
GOLDEN WEST MIDDLE SCHOOL EXPANSION TRAVIS UNIFIED SCHOOL DISTRICT -
FAIRFIELD

FIGURE 2
SITE PLAN
GOLDEN WEST MIDDLE SCHOOL EXPANSION
TRAVIS UNIFIED SCHOOL DISTRICT - FAIRFIELD

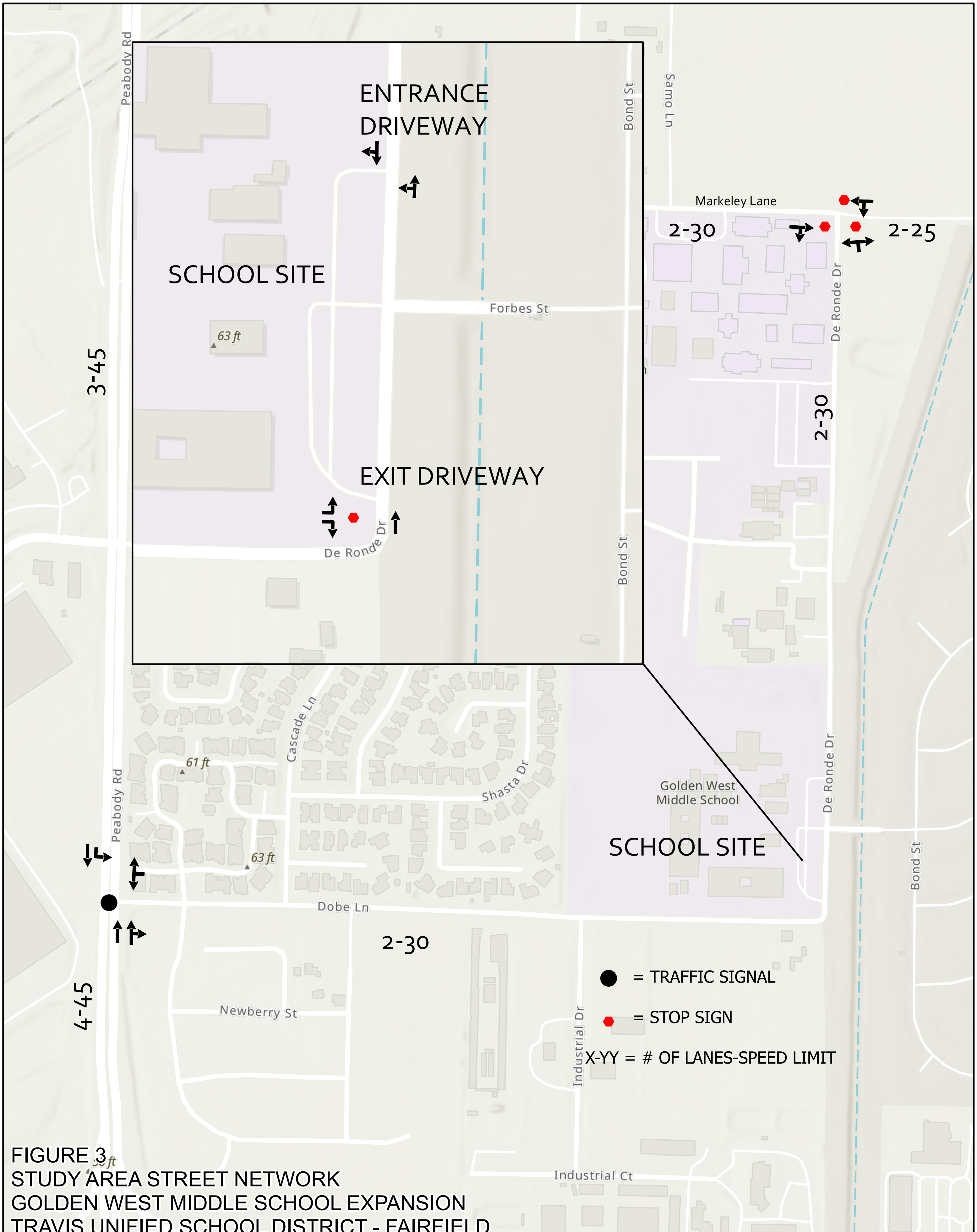

FIGURE 3
STUDY AREA STREET NETWORK
GOLDEN WEST MIDDLE SCHOOL EXPANSION
TRAVIS UNIFIED SCHOOL DISTRICT - FAIRFIELD

TABLE 1
STUDY AREA INTERSECTIONS

Intersection	**Traffic Control**
Dobe Lane/Peabody Road	Traffic Signal
De Ronde Drive/Markeley Lane	3-Way Stop Signs
De Ronde Drive/School Entrance Driveway	No Traffic Control
De Ronde Drive/School Exit Driveway	Stop Sign for Exit Driveway

The traffic impact analysis is based on an evaluation of the levels of service at the affected study area intersections. Level of service (LOS) is an industry standard by which the operating conditions of a roadway segment or an intersection are measured. LOS is defined on a scale of A through F with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS A is characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds, where traffic volumes are low and travel speeds are high. LOS F is characterized as having forced flow with many stoppages, delays, and low operating speeds.

According to the City of Fairfield General Plan Circulation Element, LOS A through D represents acceptable conditions on arterial streets, LOS A through C represents acceptable conditions on collector streets, and LOS A and B represents acceptable conditions on local streets. The levels of service at the study area intersections were determined by using the Highway Capacity Manual methodology, which is consistent with the City of Fairfield guidelines for transportation studies.

The levels of service for the intersections in the vicinity of the school were analyzed for the following scenarios:

- Existing conditions
- Existing conditions plus project generated traffic
- Future baseline conditions without the proposed project for the target year of 2027
- Future conditions with the proposed project.

The year 2027 was used for the future target year as that is anticipated to be the first full year of operation for the expanded school.

II.
BASELINE TRAFFIC CONDITIONS

The roadway network in the vicinity of the project site, the existing and future baseline traffic volumes, and the levels of service at the affected study area intersections are described below.

Street Network

The streets that provide access to the proposed project area include De Ronde Drive, Dobe Lane, Markeley Lane, and Peabody Road. The following paragraphs provide a brief description of the characteristics of these streets. Figure 3 shows the study area street network and the roadway characteristics such as number of lanes, speed limits, and types of traffic control.

De Ronde Drive

De Ronde Drive is a two lane north-south street that abuts the east side of the school campus. It has parking on the west side of the street along the frontage of the Golden West Middle School site and the Travis Unified School District offices. Parking is prohibited, however, on the east side of the street and on the west side of the street north of the District offices to Markeley Lane. A sidewalk is in place on the west side of the street and there is no sidewalk on the east side along the Travis Air Force Base frontage.

There are three driveways on the west side of De Ronde Drive that provide access to school's parking lot; an entry driveway at the north end of the lot, an exit driveway at the center of the lot that aligns with a gated access road to the Air Force base, and an exit driveway at the south end of the parking lot. The center driveway is typically closed during the peak drop-off/pick-up times at the school. The speed limit on De Ronde Drive is 30 miles per hour (mph), but with a reduced school speed limit of 25 mph when children are present.

Dobe Lane

Dobe Lane is a two lane east-west street that abuts the south end of the school campus. It has bike lanes and sidewalks on both sides of the street on the western portion of the street segment between Peabody Road and De Ronde Drive (i.e., west of Sugar Pine Street), but only a sidewalk on the north side of the street on the eastern portion of the street (with no sidewalk on the south side and no bike lanes). The speed limit on Dobe Lane is 30 mph.

Markeley Lane

Markeley Lane is a two lane east-west street that intersects with De Ronde Drive approximately one-third of a mile north of the school site. East of De Ronde Drive, it has a sidewalk on the south side of the street and bike lanes on both sides. West of De Ronde Drive it has a sidewalk on the south side of the street and there are no bike lanes. Parking is prohibited on Markeley Lane. The speed limit east of De Ronde Drive is 25 mph and the speed limit west of De Ronde Drive is 30 mph, but with a reduced school speed limit of 25 mph when children are present.

Peabody Road

Peabody Road is a three to four lane north-south street that intersects with Dobe Lane approximately one-third of a mile west of the school site. It has four lanes south of Dobe Lane and three lanes (two northbound and one southbound) north of Dobe Lane. Bike lanes are in place on both sides of Peabody Road and a sidewalk is located on the east side of Peabody Road north of Dobe Lane. There are no sidewalks on Peabody Road south of Dobe Lane. Parking is prohibited on Peabody Road and the speed limit is 45 mph.

Existing Traffic Volumes

Manual traffic counts were taken at the study area intersections in February 2024 during the morning peak period. Figure 4 shows the existing peak hour traffic volumes and turning movements at each intersection. The traffic counts were taken from 7:00 to 9:15 a.m. and the highest one-hour period of traffic flow was determined for each intersection. The morning peak hour generally occurs between 7:30 and 8:30 a.m., but it occurred from 8:15 to 9:15 at the school's driveways because of the 9:04 starting time at the school. The afternoon peak period was not addressed in the traffic impact analysis because the peak period of traffic activity for a school typically occurs from 2:30 to 3:30 p.m., which does not coincide with the late afternoon commuter peak hour, which occurs generally from 4:30 to 5:30 p.m.

Existing Intersection Levels of Service

To quantify the existing baseline traffic conditions, the four study area intersections were analyzed to determine their operating conditions during the morning peak hour. The operating conditions are identified based on the levels of service (LOS) that were calculated for each intersection.

The LOS values are based on the average vehicle delay values that were calculated for each intersection using the Highway Capacity Software. The relationship between the average delay values and levels of service is shown in Table 2.

TABLE 2
RELATIONSHIP BETWEEN DELAY VALUES & LEVELS OF SERVICE

Level of Service	***Delay Value (seconds) Signalized Intersections***	***Delay Value (seconds) Unsignalized Intersections***
A	0.0 to 10.0	0.0 to 10.0
B	> 10.0 to 20.0	> 10.0 to 15.0
C	> 20.0 to 35.0	> 15.0 to 25.0
D	> 35.0 to 55.0	> 25.0 to 35.0
E	> 55.0 to 80.0	> 35.0 to 50.0
F	> 80.0	> 50.0

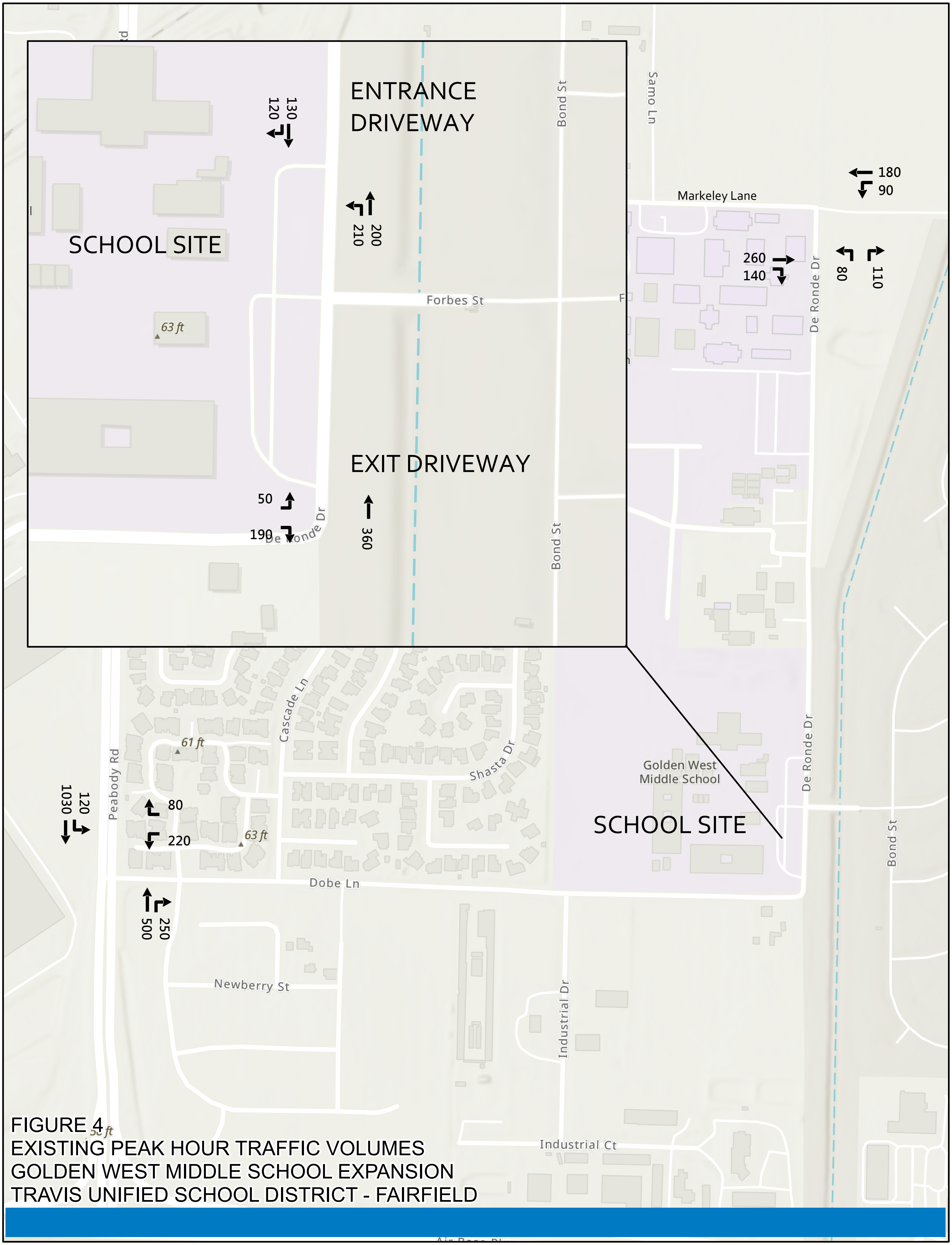

FIGURE 4
EXISTING PEAK HOUR TRAFFIC VOLUMES
GOLDEN WEST MIDDLE SCHOOL EXPANSION
TRAVIS UNIFIED SCHOOL DISTRICT - FAIRFIELD

Based on the hourly traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the average vehicle delay values and corresponding levels of service have been determined for each intersection, as summarized in Table 3.

TABLE 3
EXISTING AND FUTURE INTERSECTION LEVELS OF SERVICE

	Delay Value (seconds/vehicle) & Level of Service AM Peak Hour	
Intersection	***Existing Conditions***	***2027 Without Project***
Dobe Lane/Peabody Road	12.6 – B	16.2 – B
De Ronde Drive/Markeley Lane	12.5 – B	13.6 – B
De Ronde Drive/School Entrance Driveway	5.1 – A	5.1 – A
De Ronde Drive/School Exit Driveway	10.7 – B	10.9 – B

As shown in Table 3, all four of the study area intersections currently operate at acceptable levels of service (LOS A through D on the arterial street, Peabody Road, and LOS A through C on the collector street, De Ronde Drive) during the morning peak hour. One intersection operates at LOS A and three intersections operate at LOS B. It should be noted that the delay and LOS values for the intersections with traffic signals and 3-way stop signs represent the average for the entire intersection while the delay and LOS values for the intersections with a stop sign on the side street or no traffic control represent the delays at the stop sign or the turning movements.

Future Baseline Traffic Conditions

As the proposed project is expected to be completed in the year 2026, the first full year of operation for the expanded school would be 2027. The existing (2024) traffic volumes were expanded by a growth factor of 6.1 percent to account for general regional growth and the cumulative impacts of traffic associated with other development projects in the area. This growth factor represents a two percent annual growth rate for three years, compounded annually. The growth factor was not applied to the school's driveway volumes. The projected traffic volumes for the year 2027 without the proposed project are shown on Figure 5.

Based on the projected peak hour traffic volumes, the turning movement counts, and the existing lane configuration, the future baseline levels of service were calculated for each study area intersection, as summarized in Table 3.

For the target year of 2027, all four of the study area intersections are projected to operate at acceptable levels of service. One intersection would operate at LOS A and three intersections would operate at LOS B during the morning peak hour.

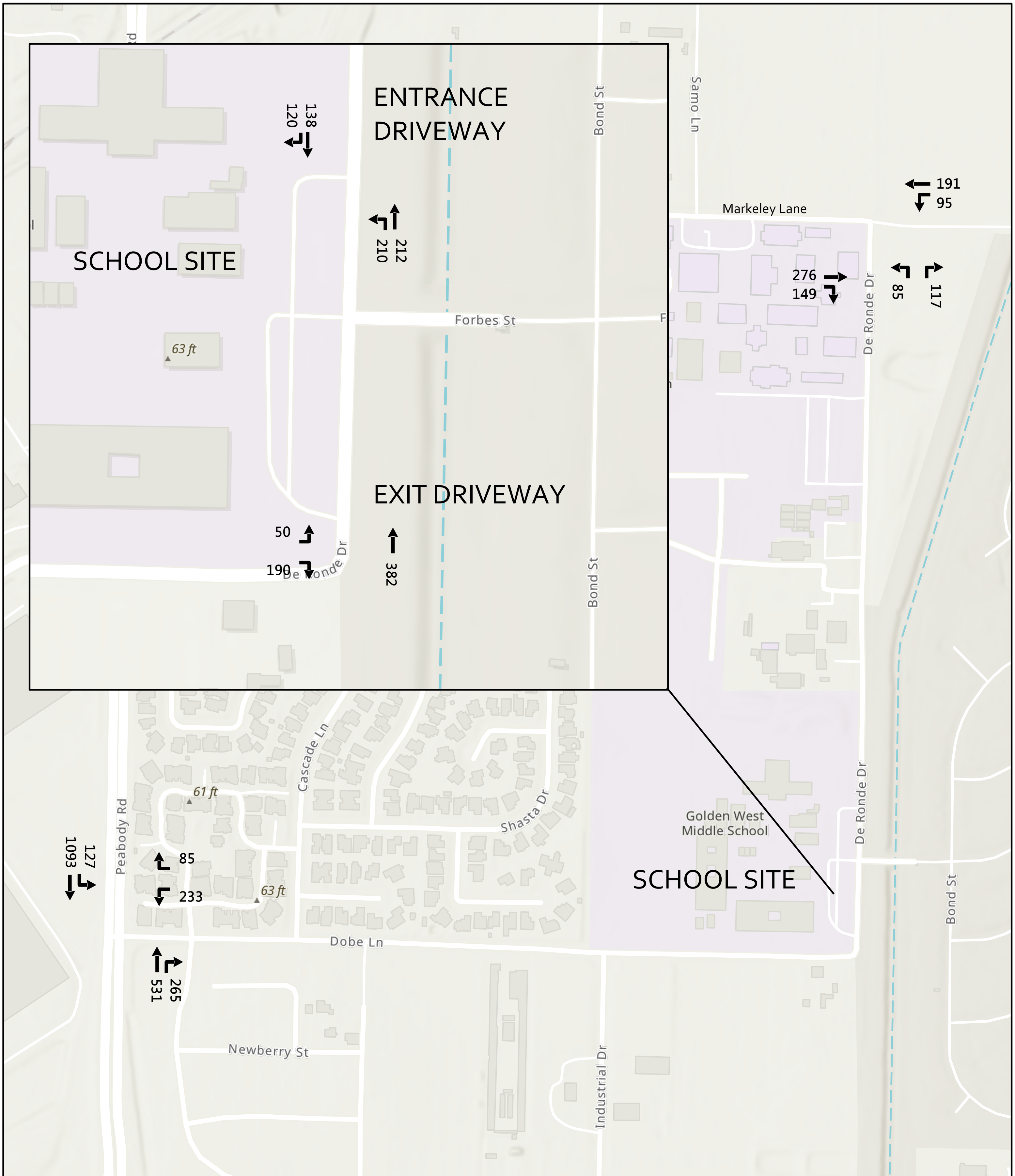

FIGURE 5
2027 PEAK HOUR TRAFFIC VOLUMES WITHOUT PROJECT
GOLDEN WEST MIDDLE SCHOOL EXPANSION
TRAVIS UNIFIED SCHOOL DISTRICT - FAIRFIELD

III.
TRAFFIC IMPACT ANALYSIS

This section summarizes the analysis of the proposed project's impacts on study area traffic/transportation conditions. First is a discussion of the significance standards followed by a discussion of project generated traffic volumes. This is followed by an analysis of the impacts of the proposed project on traffic volumes and intersection levels of service. Then the impacts associated with non-motorized transportation (pedestrians and bicycles), public transit, vehicle miles traveled (VMT), safety, and emergency access are presented.

Standards of Significance

According to the City of Fairfield standards, levels of service A through D on an arterial street (Peabody Road) are considered acceptable while LOS E and F are considered to represent unacceptable traffic conditions. For a collector street, levels of service A through C are considered acceptable while LOS D, E, and F are considered to represent unacceptable conditions.

With regard to the CEQA thresholds of significance, Appendix G of the CEQA Guidelines states that a project would normally have a significant effect on the environment if the project could:

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

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT),

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

d) Result in inadequate emergency access.

Project Generated Traffic

The volumes of traffic that would be generated by the existing and proposed school were determined in order to estimate the impacts of the proposed project on the study area streets and intersections. The trip generation rates and the anticipated volumes of traffic that would be generated by the expanded school are shown in Table 4.

The trip generation rates shown in Table 4 are from the Institute of Transportation Engineers *Trip Generation Manual* for the middle school land use category. Although the trip generation rates and traffic volumes shown in Table 4 for the school are based on the number of students, the data represent the total number of vehicle trips generated by the school, including staff/faculty vehicles, drop-off/pick-up activities, visitors, and deliveries.

TABLE 4 PROJECT GENERATED TRAFFIC				
Facility	**AM Peak Hour**			**Daily Traffic**
	Total	**Inbound**	**Outbound**	
TRIP GENERATION RATES				
Middle School (vehicle trips per student)	0.74	55%	45%	2.10
GENERATED TRAFFIC VOLUMES				
Existing School (744 students)	551	303	248	1,560
Proposed School (1,194 students)	884	486	398	2,510
Net Increase (450 students)	333	183	150	950

Table 4 indicates that the project would generate a net increase of 333 vehicle trips during the morning peak hour (183 inbound and 150 outbound) and 950 trips per day.

It should be noted that the traffic volumes shown in Table 4 do not necessarily introduce new traffic to the overall roadway network but instead represent the traffic that would be re-directed to this school site from other existing schools where the 6th grade students currently attend, because the number of students attending school in the district is a function of the school-age population and the demand for educational facilities. Most of the school-related traffic would be traveling on the roadway network regardless of the status of the proposed project. It has been assumed for the traffic analysis, however, that the additional site-generated traffic would be new traffic on the roadway network.

Projected Traffic Volumes

To quantify the increase in traffic volumes at each intersection resulting from the proposed project, the project generated traffic volumes shown in Table 4 were geographically distributed onto the street network using the directional percentages shown on Figure 6. The distribution assumptions are based on the layout of the street network, the existing traffic patterns, and the anticipated geographical distribution of the students who would attend the school based on the District's attendance boundaries. The volumes of project generated traffic that would be added to each study area intersection are shown on Figure 6.

The traffic impact analysis considers two scenarios. One is the project's impact on existing conditions (2024) and the other is the project's impact on the projected year 2027 conditions. To quantify the impacts on existing conditions, the project generated traffic volumes shown on Figure 6 were added to the existing traffic volumes. The resulting "existing plus project" traffic volumes are shown on Figure 7.

The total volumes of traffic projected for the year 2027 scenario were determined by adding the project generated traffic to the future baseline traffic volumes. The projected traffic volumes for the "with project" scenario are shown on Figure 8.

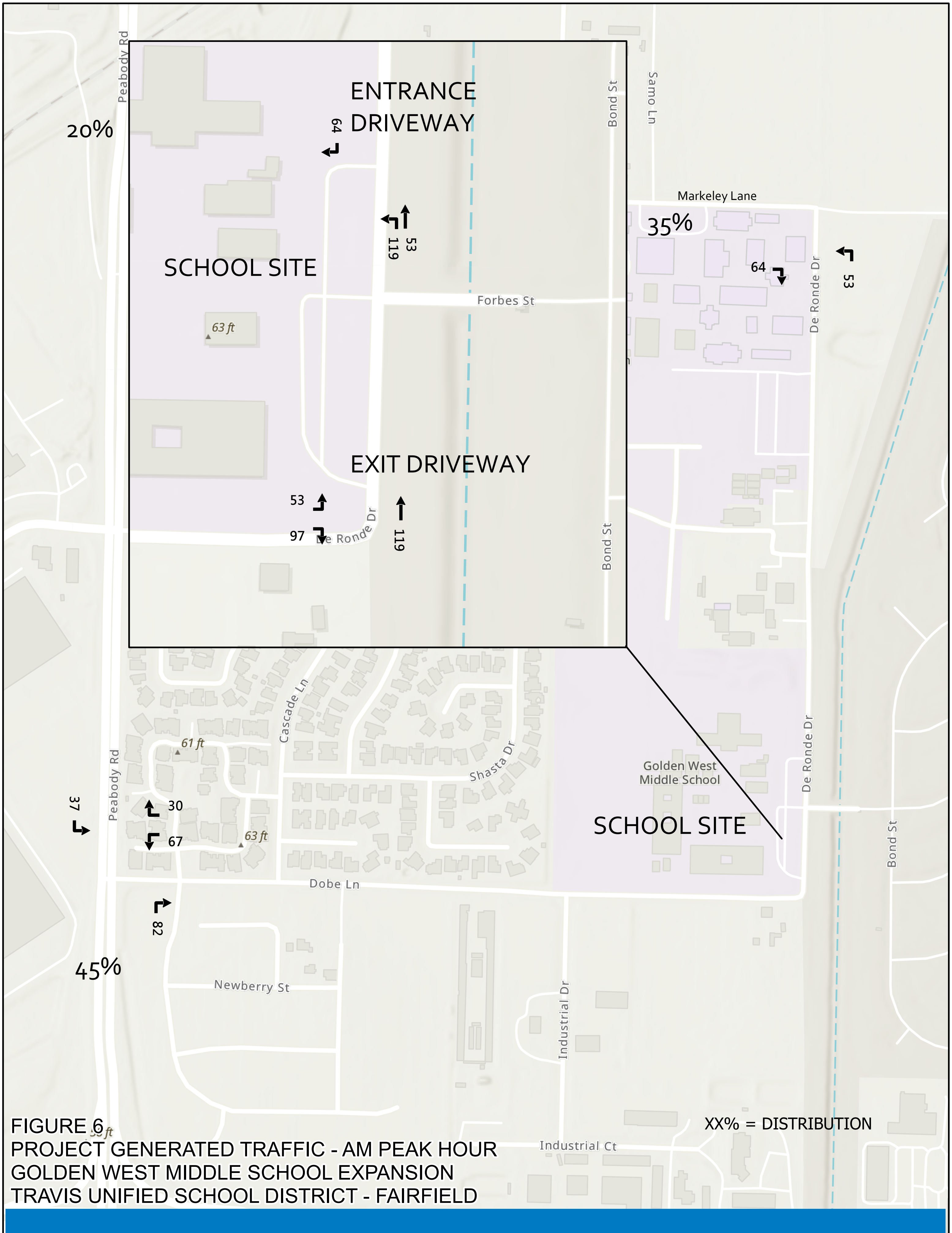

FIGURE 6
PROJECT GENERATED TRAFFIC - AM PEAK HOUR
GOLDEN WEST MIDDLE SCHOOL EXPANSION
TRAVIS UNIFIED SCHOOL DISTRICT - FAIRFIELD

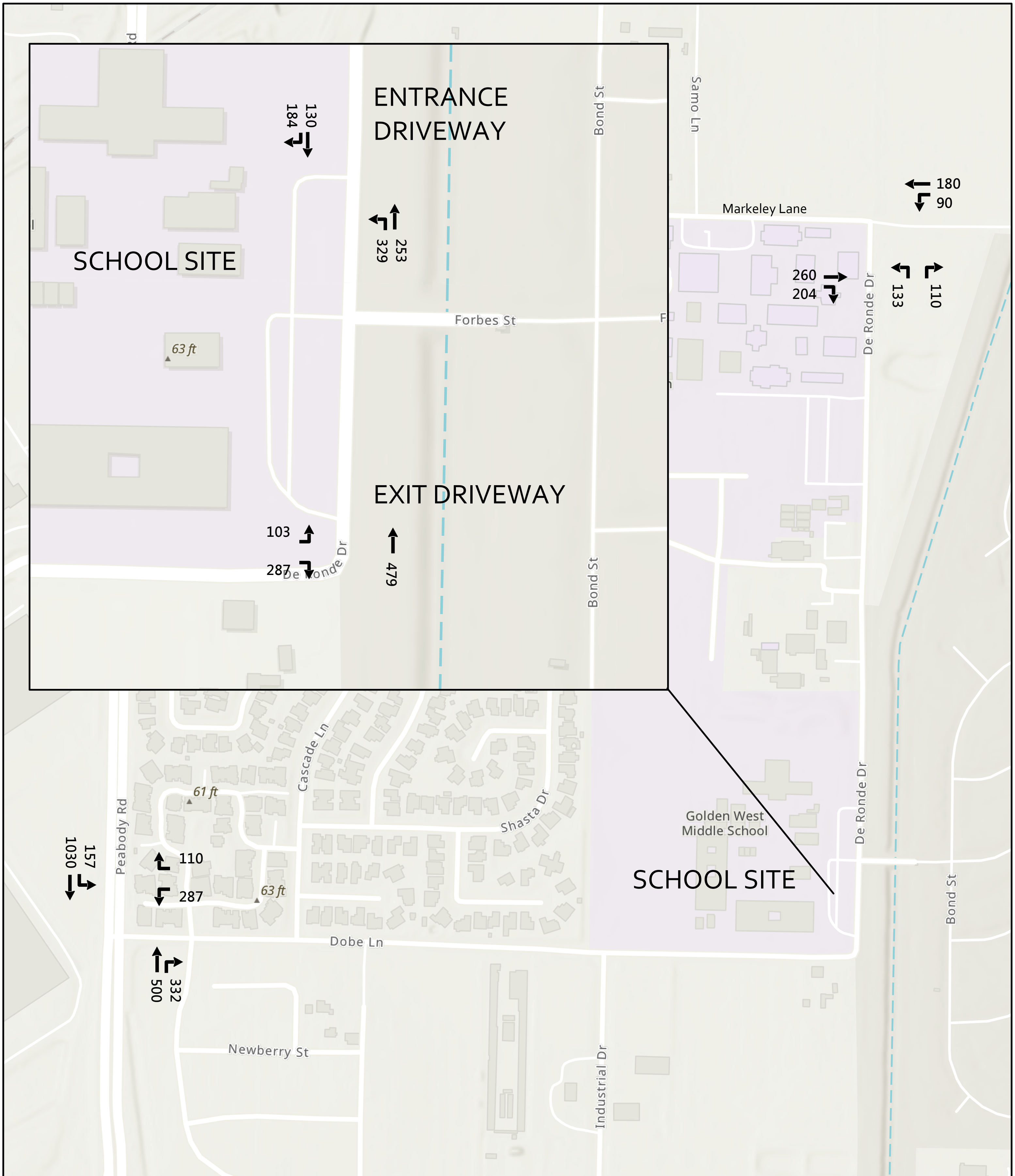

FIGURE 7
EXISTING PLUS PROJECT TRAFFIC VOLUMES
GOLDEN WEST MIDDLE SCHOOL EXPANSION
TRAVIS UNIFIED SCHOOL DISTRICT - FAIRFIELD

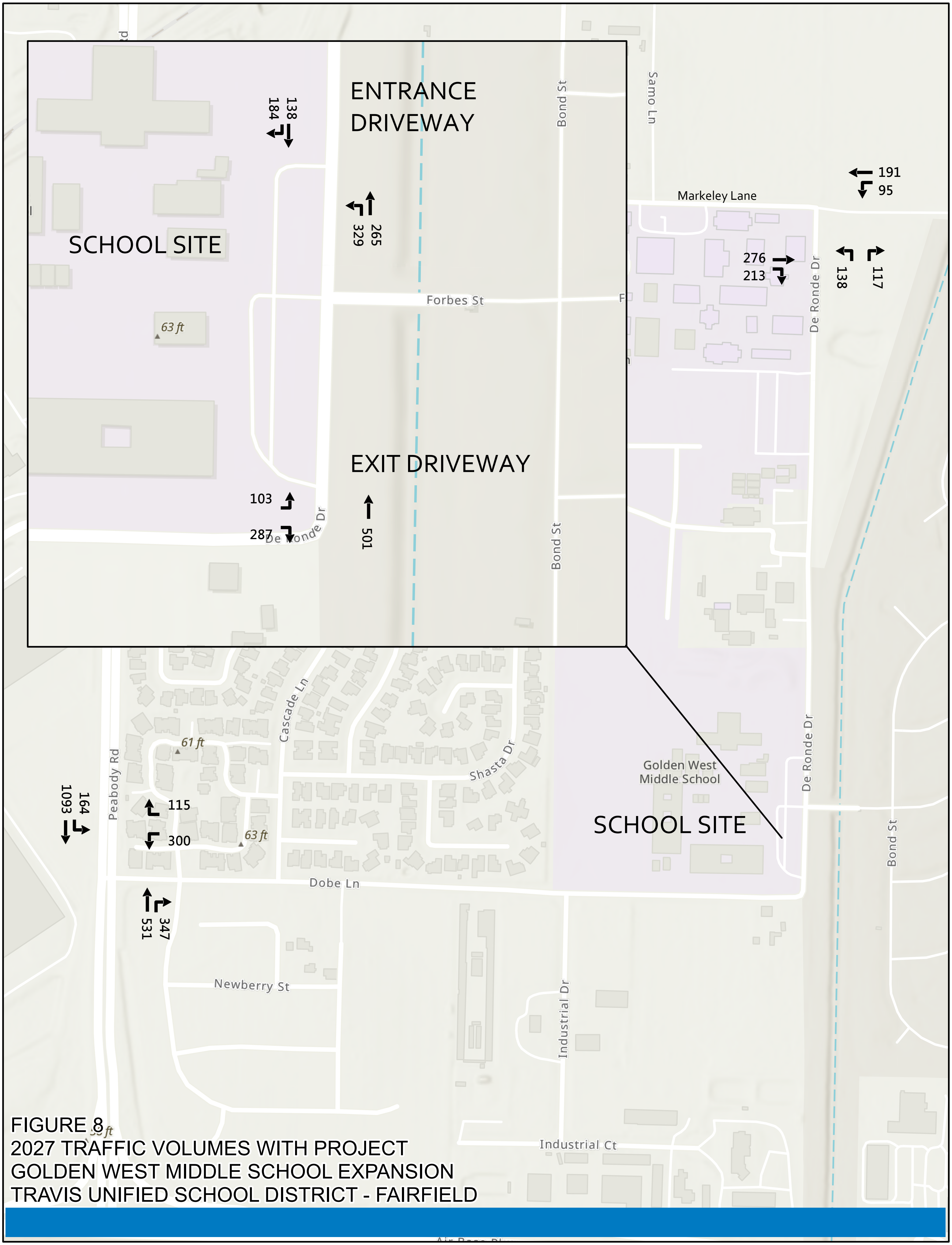

FIGURE 8
2027 TRAFFIC VOLUMES WITH PROJECT
GOLDEN WEST MIDDLE SCHOOL EXPANSION
TRAVIS UNIFIED SCHOOL DISTRICT - FAIRFIELD

Intersection Impact Analysis

The impact analysis for the four study area intersections was conducted by comparing the delay values and levels of service (LOS) for the "without project" and "with project" scenarios. For the existing conditions scenario, the analysis compares the existing conditions to the conditions with the proposed project. Similarly, for the year 2027 scenario, the analysis compares the year 2027 baseline conditions without the proposed project to the year 2027 scenario with the proposed project.

The year 2027 was used as the target year for future conditions as that is anticipated to be the first full year that the proposed project would be operational. The peak hour for the analysis represents the time period during which the school would generate the heaviest volumes of traffic, which is the AM peak hour.

The comparative levels of service at the study area intersections for the existing conditions scenario are summarized in Table 5. The table shows the before and after delay values and the levels of service at each study area intersection. Also shown are the increases in the delay values that would occur as a result of the proposed project. The last column in Table 5 indicates if the intersections would be significantly impacted by the project generated traffic.

TABLE 5
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
EXISTING CONDITIONS AS BASELINE

Intersection	Delay Value & Level of Service		Increase In Delay Value (seconds)	Significant Impact
	Existing Conditions	Existing plus Project		
Dobe Lane/Peabody Road	12.6 – B	20.7 – C	8.1	No
De Ronde Drive/Markeley Lane	12.5 – B	15.5 – C	3.0	No
De Ronde Drive/School Entrance Driveway	5.1 – A	6.6 – A	1.5	No
De Ronde Drive/School Exit Driveway	10.7 – B	12.5 – B	1.8	No

The intersection of Dobe Lane and Peabody Road, for example, operates with an average delay value of 12.6 seconds per vehicle and LOS B for the existing conditions scenario and with an average delay value of 20.7 seconds and LOS C for the existing plus project scenario, which represents an increase in average delay of 8.1 seconds per vehicle. This impact would be less than significant according to the criteria outlined above because the intersection would continue to operate at an acceptable LOS C.

Table 5 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed project for the existing conditions baseline scenario because all of the intersections would continue to operate at an acceptable level of service (LOS A through C).

The before-and-after delay values and levels of service at each of the study area intersections are summarized in Table 6 for the year 2027 baseline scenario. The table shows the projected 2027 traffic conditions without the project, the 2027 traffic conditions with the project, and the change in the delay values associated with the project. The last column in Table 6 indicates if the intersection would be significantly impacted by the project traffic. Table 6 indicates that none of the study area intersections would be significantly impacted by the traffic that would be generated by the proposed project for the year 2027 baseline scenario.

TABLE 6
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
YEAR 2027 AS BASELINE

	Delay Value & Level of Service			
Intersection	***2027 Without Project***	***2027 With Project***	***Increase In Delay Value (seconds)***	***Significant Impact***
Dobe Lane/Peabody Road	16.2 – B	30.7 – C	14.5	No
De Ronde Drive/Markeley Lane	13.6 – B	17.4 – C	3.8	No
De Ronde Drive/School Entrance Driveway	5.1 – A	6.6 – A	1.5	No
De Ronde Drive/School Exit Driveway	10.9 – B	12.8 – B	1.9	No

Tables 5 and 6 indicate that the proposed project would not have a significant impact at any of the study area intersections during the morning peak hour based on the significance criteria presented previously because the intersections would continue to operate at LOS C or better. As there would be no significant impacts, no capacity-related mitigation measures would be required.

Impacts on Daily Traffic Volumes

The impacts of the project on daily traffic volumes are shown on Table 7 for the study area streets. The existing conditions scenario and the year 2027 scenario are shown. The daily traffic volume on De Ronde Drive north of the school site, for example, would increase from 1,400 vehicles per day (vpd) to 1,730 vpd for the existing conditions scenario.

TABLE 7
PROJECT IMPACT ON DAILY TRAFFIC VOLUMES

Street/Location	***Without Project***	***Project Traffic***	***With Project***
EXISTING CONDITIONS AS BASELINE			
De Ronde Drive – North of School Site	1,400	330	1,730
Dobe Lane – West of De Ronde Drive	3,900	620	4,520
Markeley Lane – West of De Ronde Drive	2,000	330	2,330
Peabody Road – North of Dobe Lane	16,800	190	16,990
Peabody Road – South of Dobe Lane	16,800	430	17,230
YEAR 2027 AS BASELINE			
De Ronde Drive – North of School Site	1,490	330	1,820
Dobe Lane – West of De Ronde Drive	4,140	620	4,760
Markeley Lane – West of De Ronde Drive	2,120	330	2,450

Peabody Road – North of Dobe Lane	17,820	190	18,010
Peabody Road – South of Dobe Lane	17,820	430	18,250

Non-Motorized Transportation and Transit

The proposed project would generate a minor increase in demand for non-motorized travel as some students and employees may elect to travel to and from the school site as pedestrians or on bicycles. De Ronde Drive and Dobe Lane have sidewalks on the side of the street that abuts the school site and the other two study area streets have sidewalks on one side of the street, except that there are no sidewalks on Peabody Road south of Dobe Lane. At the school's middle driveway on De Ronde Drive, which aligns with a gated access road to Travis Air Force Base, there are yellow school crosswalks on all four sides of the intersection as well as flashing beacons activated by push buttons to warn motorists when pedestrians are crossing the street. This crossing is currently used by students walking from the base to the school and will be used by some of the new 6th grade students, which will increase the number of pedestrian crossings.

Bike lanes are provided on Peabody Road, on the western half of Dobe Lane, and on Markeley Lane east of De Ronde Drive. In addition, bike racks are provided on the school campus.

With regard to public transit, FAST Transit operates several bus routes in and around Fairfield. However, there are no bus routes in the immediate vicinity of the school site. The nearest bus routes are approximately 3.5 miles west of the school. There would, therefore, be no use of public transit associated with the school expansion project.

Findings Relative to CEQA Transportation Issues

The proposed project involves the expansion of the existing Golden West Middle School to increase the number of students from 744 existing students to 1,194 students with the expansion, which is an increase of 450 students. For the transportation analysis, Appendix G of the CEQA Guidelines states that a proposed project could have a significant effect on the environment if the project would:

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

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT),

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

d) Result in inadequate emergency access.

The findings regarding each of these issues are presented in the following sections.

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

CEQA Finding: No Impact

The Circulation Element of the City of Fairfield General Plan includes various objectives, policies, and programs that outline the overall goal to "create and maintain an efficient, safe, and coordinated multi-modal circulation system that reduces environmental and social impacts of transportation systems, serves the needs of a variety of users and meets the social, economic development, and urban design needs of the community." The list of objectives in the Circulation Element addresses traffic congestion, levels of service, transit, bicyclists, pedestrians, and safety. The proposed school expansion project is consistent with the goals presented in the Circulation Element. The project would not conflict with any objectives, policies, or programs of the General Plan and it would not adversely affect the performance of any roadway, transit, or non-motorized (pedestrian and bicycle) transportation facilities.

Based on the LOS analysis, the discussion of non-motorized transportation and transit, and a review of the Circulation Element of the City's General Plan, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Issue: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT).

CEQA Finding: Less Than Significant Impact

Vehicle delays and levels of service (LOS) have historically been used as the basis for determining the significance of traffic impacts as standard practice in California Environmental Quality Act (CEQA) documents. On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analyses as part of CEQA compliance. SB 743 eliminated auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. As part of the current CEQA Guidelines, the criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). Pursuant to SB 743, the California Natural Resources Agency adopted revisions to the CEQA Guidelines on December 28, 2018, to implement SB 743. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. Under the Guidelines, metrics related to "vehicle miles traveled" (VMT) were required beginning July 1, 2020, to evaluate the significance of transportation impacts under CEQA for development projects, land use plans, and transportation infrastructure projects. State courts ruled that under the Public Resources Code Section 21099, subdivision (b)(2), "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment" under CEQA, except for roadway capacity projects.

As stated in the "Technical Advisory on Evaluating Transportation Impacts in CEQA" (California Office of Planning and Research, December 2018) and the "Vehicle Miles Traveled – Focused Transportation Impact Study Guide" (Caltrans, May 20, 2020), projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact and can be screened from a CEQA VMT analysis because they fall into the small project category. Although the proposed project would generate an estimated 950 vehicle trips per day, as shown on Table 4, most or all of these vehicle trips would already be traveling on the area's roadway network because the 450 new students that would be attending Golden West Middle School would have been attending a school in the District regardless of the status of the proposed project. The site-generated traffic shown in the table does not represent an overall increase in vehicle trips in the area. It instead represents trips that would be re-directed to this school site as opposed to another school in the District. There would, therefore, be little or no increase in vehicle miles traveled associated with the project.

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

CEQA Finding: Less Than Significant Impact

The proposed project would not provide any on- or off-site access or circulation features that would create or increase any design hazards or incompatible uses. Access to the school site would continue to be provided by the existing driveways on the west side of De Ronde Drive. The driveway at the north end of the parking lot would continue to be an entry-only driveway and the driveway at the south end of the parking lot would continue to be an exit-only driveway. In addition, two new driveways would be provided on De Ronde Drive to provide access to a new staff parking lot that will be constructed at the north end of the school site.

The increased levels of traffic, the increased number of pedestrians, and the increased number of vehicular turning movements that would occur at the driveways and at the nearby intersections would result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring. These impacts would not be significant, however, because the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity. These streets and intersections have historically been accommodating school-related traffic on a daily basis for the existing school. The proposed project would add more vehicles to the roadway network, but the additional vehicles would be compatible with the design and use of the affected roadways. The proposed project would not result in any major safety or operational issues relative to access and circulation.

As the existing roadway network could readily accommodate the anticipated increase in vehicular, pedestrian, and bicycle activity, the proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses.

Issue: Result in inadequate emergency access.

CEQA Finding: No Impact

The existing access and circulation features at the school, including the driveways, on-site roadways, parking lots, and fire lanes, would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. In addition to the existing access features, two new driveways and a parking lot would be provided at the north end of the campus. These facilities would provide access to the school grounds, the buildings, and all other areas of the project site, including the playfields and hard courts. The design and any modifications to the access features are subject to and must satisfy the District's requirements and would be subject to approval by the Fire Department and the California Division of the State Architect. The proposed project would not, therefore, result in inadequate emergency access.

IV.
SUMMARY OF IMPACTS AND CONCLUSIONS

The key findings of the traffic impact analysis are presented below.

- The proposed school expansion project would generate a net increase of 333 vehicle trips during the morning peak hour (183 inbound and 150 outbound) and 950 trips per day.
- An analysis of four intersections in the vicinity of the project site (including the two primary site access driveways) indicates that the additional traffic generated by the proposed project would not result in a significant impact at any of the intersections based on the projected levels of service according to the City of Fairfield criteria.
- All four of the study area intersections are projected to operate at acceptable levels of service during the morning peak hour based on calculations of average vehicle delays. The afternoon peak hour was not addressed because the school-generated traffic does not coincide with the afternoon commuter peak period.
- CEQA threshold of significance “a” asks if the proposed project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The analysis indicates that there would be no impact because:

  - The proposed project would not adversely affect the performance or safety of any roadway, transit, or non-motorized transportation facilities (pedestrians and bicycles) and would not conflict with any adopted plans, policies, or programs relative to these transportation modes.

  - The Circulation Element of the City of Fairfield General Plan includes various objectives, policies, and programs that outline the goal of establishing and maintaining a balanced, multi-modal mobility network including transit, bicyclists, pedestrians, and motor vehicles. The proposed project is consistent with the goals presented in the Circulation Element and would not conflict with any objectives, policies, or programs of the General Plan.
- CEQA threshold of significance “b” asks if the proposed project would conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT). The analysis indicates that the VMT impact would not be significant because the proposed project is a local serving public use that would not result in a measurable increase in VMT because the 6^{th} grade students that would attend Golden West Middle School would be attending a school in the District area and would be traveling to and from a school site regardless of the status of the proposed project. The project can be screened from any further VMT analysis as it would not have a significant impact relative to VMT.
- CEQA threshold of significance “c” asks if the proposed project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The analysis indicates that the streets, intersections, and driveways are designed to accommodate the anticipated levels of vehicular and pedestrian activity and that the streets have historically been accommodating the traffic generated by the existing school. The expanded school would be compatible with the neighborhood and would

not result in any major hazards for vehicular traffic, pedestrians, or bicyclists. The proposed project would not, therefore, substantially increase hazards due to a geometric design feature or incompatible uses and the impacts would be less than significant.

- CEQA threshold of significance "d" asks if the proposed project would result in inadequate emergency access. The existing and proposed access and circulation features at the school, including the driveways, on-site roadways, parking lots, and fire lanes, would readily accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. Emergency vehicles would be able to access the school grounds, the buildings, and all other areas of the school, including the play fields, via on-site travel corridors. The proposed project would not result in inadequate emergency access and there would be no impact.