Draft Initial Study and Mitigated Negative Declaration for Fernandes Property Subdivision

June 2025



Prepared By:

4Creeks, Inc.
324 S Santa Fe, Suite A
Visalia, CA 93292

Prepared For:

City of Tulare
411 East Kern Ave
Tulare, CA 93230

Table of Contents

SECTION 1: CEQA Review Process 1-3

SECTION 2: Project Description 2-1

SECTION 3: Evaluation of Environmental Impacts 3-1

3.1 Purpose 3-1

3.2 Initial Study/Mitigated Negative Declaration 3-2

3.3 Evaluation Of Environmental Impacts 3-9

3.4 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED 3-10

3.5 Environmental Analysis 3-34

I. AESTHETICS 3-34
II. AGRICULTURE AND FOREST RESOURCES: 3-38
III. AIR QUALITY 3-46
IV. BIOLOGICAL RESOURCES 3-63
V. CULTURAL RESOURCES 3-70
VI. ENERGY 3-77
VII. GEOLOGY AND SOILS 3-85
VIII. GREENHOUSE GAS EMISSIONS 3-92
IX. HAZARDS AND HAZARDOUS MATERIALS 3-104
X. HYDROLOGY AND WATER QUALITY 3-110
XI. LAND USE AND PLANNING 3-118
XII. MINERAL RESOURCES 3-122
XIII. NOISE 3-124
XIV. POPULATION AND HOUSING 3-128
XV. PUBLIC SERVICES 3-130
XVI. RECREATION 3-134
XVII. TRANSPORTATION 3-137
XVIII. TRIBAL CULTURAL RESOURCES 3-142
XIX. UTILITIES AND SERVICE SYSTEMS 3-147
XX. WILDFIRE 3-152
XXI. MANDATORY FINDINGS OF SIGNIFICANCE 3-155

3.6 MITIGATION MONITORING AND REPORTING PROGRAM 3-157

3.7 Supporting Information and Sources 3-161

SECTION 4: List of Preparers 4-1

Table of Figures

Figure 2-1. Regional Location Map *2-2*
Figure 2-2. Vicinity Map *2-3*
Figure 3-1. Vicinity Map *3-7*
Figure 3-2: Site Plan *3-8*
Photo 1: North Side Boundary (Facing South) *3-35*
Figure 3-4: Important Farmlands Map *3-42*
Figure 3-5: Soils Map *3-87*
Figure 3-6: Distance to Schools and Airports *3-107*
Figure 3-7: General Plan Land Use Map *3-120*

Appendix List

Appendix A: Air Quality/GHG/Energy Assessment
Appendix B: Health Risk Assessment
Appendix C: Biological Habitat Assessment
Appendix D: Cultural Resources Technical Memorandum
Appendix E: Phase I Environmental Site Assessment Report
Appendix F: Phase II Limited Site Assessment
Appendix G: Traffic Impact Analysis Report
Appendix H: Tribal Consultation Letter

City of Tulare
411 E Kern Ave
Tulare, CA 93274

SECTION 1: CEQA Review Process
Project Title: Fernandes Property Subdivision

1.1. California Environmental Quality Act Guidelines

Section 15063 of the California Environmental Quality Act (CEQA) Guidelines requires that the Lead Agency prepare an Initial Study to determine whether a discretionary project will have a significant effect on the environment. All phases of the project planning, implementation, and operation must be considered in the Initial Study. The purposes of an Initial Study, as listed under Section 15063(c) of the CEQA Guidelines, include:

(1) Provide the lead agency with information to use as the basis for deciding whether to prepare an EIR or negative declaration;
(2) Enable an applicant or 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 the preparation of an EIR, if one is required, by:
  (a) Focusing the EIR on the effects determined to be significant,
  (b) Identifying the effects determined not to be significant,
  (c) Explaining the reasons for determining that potentially significant effects would not be significant, and
  (d) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.
(4) Facilitate environmental assessment early in the design of a project;
(5) Provide documentation of the factual basis for the finding in a negative declaration that a project will not have a significant effect on the environment
(6) Eliminate unnecessary EIRs;
(7) Determine whether a previously prepared EIR could be used with the project.

1.2. Initial Study

This document is the Initial Study/Mitigated Negative Declaration for the proposed subdivision of approximately 19.58 acres of undeveloped land for the construction and operation of 120 single-family residential dwelling units ("Project"). The City of Tulare ("City") will act as the Lead Agency for this Project under CEQA and the State CEQA Guidelines.

1.3. Environmental Checklist

The Lead Agency may use the CEQA Environmental Checklist Form (CEQA Guidelines, Section 15063(d)(3) and (f)) in preparation of an Initial Study to provide information for determination if there are significant effects of the project on the environment. A copy of the completed Environmental Checklist is set forth in **Section 3**.

1.4. Notice of Intent to Adopt a Negative Declaration

The Lead Agency shall provide a Notice of Intent to Adopt a Negative Declaration (CEQA Guidelines, Section 15072) to the public, responsible agencies, trustee agencies and the county clerk within which the project is located, sufficiently prior to adoption by the Lead Agency of the Negative Declaration to allow the public and agencies the review period. The public review period (CEQA Guidelines, Section 15105) shall not be less than 20 days, unless the Initial Study/Negative Declaration is submitted to the State Clearinghouse, in which case the review period shall not be less than 30 days unless a shorter period is approved by the State Clearinghouse (CEQA Guidelines, Section 15073(a)).

Prior to approving a project, the decision-making body of the Lead Agency shall consider the proposed Negative Declaration or Mitigated Negative Declaration together with any comments received during the public review process, and shall adopt the proposed Negative Declaration or Mitigated Negative Declaration only if it finds on the basis of the whole record before it (including the Initial Study and any comments received), that there is no substantial evidence that the project will have a significant effect on the environment and that the Negative Declaration reflects the Lead Agency's independent judgment and analysis (CEQA Guidelines, Section 15074(b)).

The written and oral comments received during the public review period will be considered by the City of Tulare prior to adopting the Negative Declaration. Regardless of the type of CEQA document that must be prepared, the overall purpose of the CEQA process is to:

1) Assure that the environment and public health and safety are protected in the face of discretionary projects initiated by public agencies or private concerns;
2) Provide for full disclosure of the project's environmental effects to the public, the agency decision-makers who will approve or deny the project, and the responsible trustee agencies charged with managing resources (e.g. wildlife, air quality) that may be affected by the project; and
3) Provide a forum for public participation in the decision-making process pertaining to potential environmental effects.

According to CEQA Guidelines Section 15070, a public agency shall prepare or have prepared a proposed negative declaration for a project subject to CEQA when:

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

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

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

The Environmental Checklist Discussion contained in Section Three of this document has determined that the environmental impacts of the Project are less than significant with mitigation measures and that a Mitigated Negative Declaration is adequate for adoption by the Lead Agency.

1.5. Negative Declaration or Mitigated Negative Declaration

The Lead Agency shall prepare or have prepared a proposed Negative Declaration or Mitigated Negative Declaration (CEQA Guidelines Section 15070) for a project subject to CEQA when the Initial Study shows that there is no substantial evidence, in light of the whole record before the agency, that the Project may have a significant effect on the environment. The proposed Negative Declaration or Mitigated Negative Declaration circulated for public review shall include the following:

(a) A brief description of the project, including a commonly used name for the project.
(b) The location of the project, preferably shown on a map.
(c) A proposed finding that the project will not have a significant effect on the environment.
(d) An attached copy of the Initial Study documenting reasons to support the finding.
(e) Mitigation measures, if any.

1.6. Intended Uses of Initial Study/Negative Declaration Documents

The Initial Study/Negative Declaration document is an informational document that is intended to inform decision-makers, other responsible or interested agencies, and the general public of potential environmental effects of the proposed Project. The environmental review process has been established to enable the public agencies to evaluate environmental consequences and to examine and implement methods of eliminating or reducing any adverse impacts. While CEQA requires that consideration be given to avoiding environmental damage, the Lead

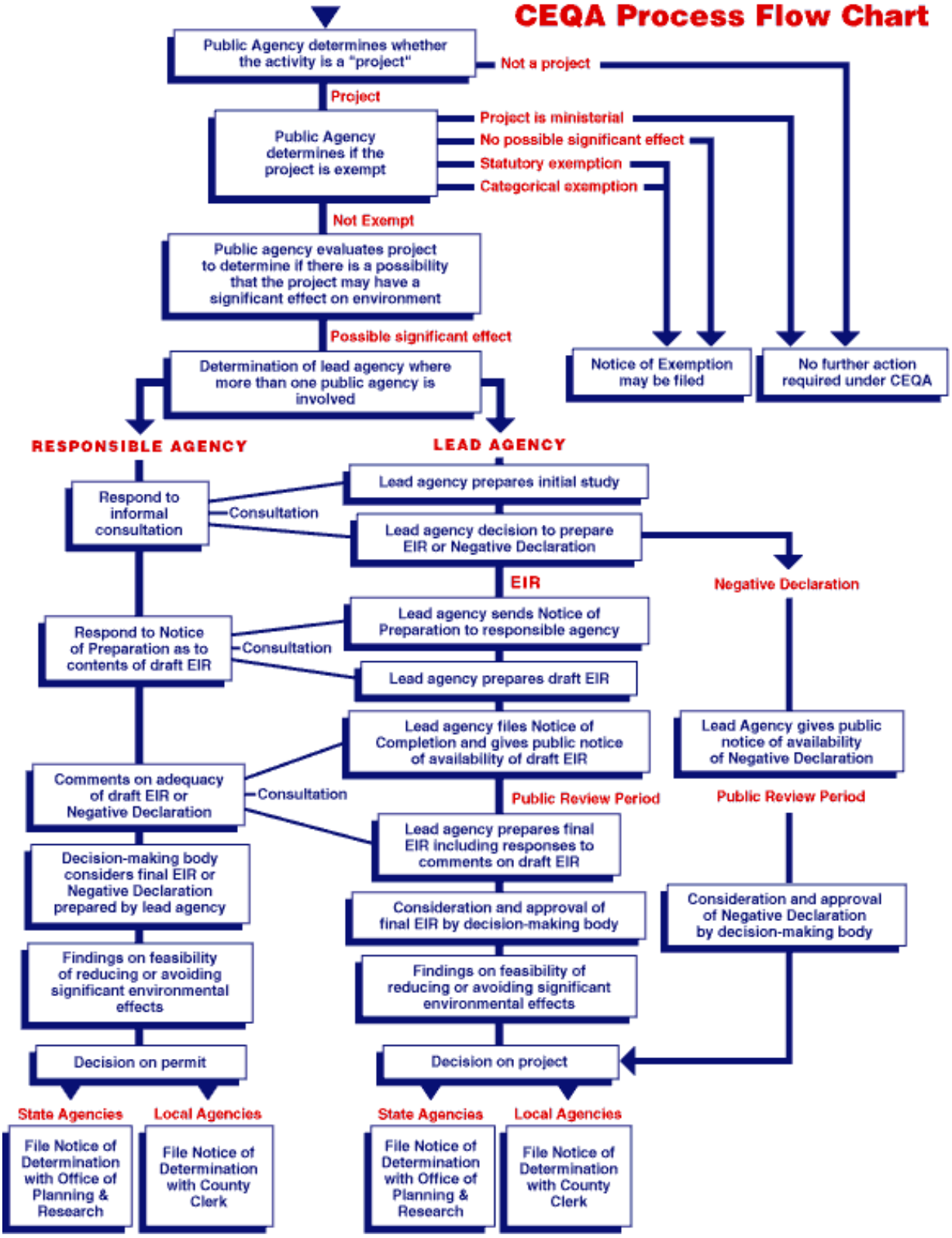
Agency must balance any potential environmental effects against other public objectives, including economic and social goals. The City of Tulare, as the Lead Agency, will make a determination, based on the environmental review for the Environmental Study, Initial Study and comments from the general public, if there are less than significant impacts from the proposed project and the requirements of CEQA can be met by adoption of a Mitigated Negative Declaration.

1.7. Notice of Determination (NOD)

The Lead Agency shall file a Notice of Determination within five working days after deciding to approve the Project. The Notice of Determination (CEQA Guidelines, Section 15075) shall include the following:

(1) An identification of the project including the project title as identified on the proposed negative declaration, its location, and the State Clearinghouse identification number for the proposed negative declaration if the notice of determination is filed with the State Clearinghouse.
(2) A brief description of the project.
(3) The agency's name and the date on which the agency approved the project.
(4) The determination of the agency that the project will not have a significant effect on the environment.
(5) A statement that a negative declaration or a mitigated negative declaration was adopted pursuant to the provisions of CEQA.
(6) A statement indicating whether mitigation measures were made a condition of the approval of the project, and whether a mitigation monitoring plan/program was adopted.
(7) The address where a copy of the negative declaration or mitigated negative declaration may be examined.
(8) The identity of the person undertaking a project which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies or the identity of the person receiving a lease, permit, license, certificate, or other entitlement for use from one or more public agencies.

1.8. CEQA Process Flow Chart



City of Tulare
411 E Kern Ave
Tulare, CA 93274

SECTION 2: Project Description
Project Title: Fernandes Subdivision

2.1. Project Description and Purpose

The Project proposes to subdivide the 19.58-acre site into a 120-lot single-family residential subdivision including a stormwater retention park/pond. Proposed infrastructure improvements also include extension of public streets and utilities for the proposed homes. The proposed residential development would complement and provide street interconnectivity with the planned residential development to the west. The Project would help address the need for housing within the City and region, and is located within an area of the City that is currently zoned and designated for residential land uses.

2.2. Project Location

The proposed Project consists of approximately 19.58 acres of land in the southern portion of the City encompassing one parcel (Assessor's Parcel Number 174-030-008) approximately 500 feet south east of the southern terminus of south 'E' Street near the intersection of Lemonwood Avenue ("Project Site"). The Project Site is currently an agricultural land use, containing pistachio trees as well as one existing residence and an accessory structure (barn). It is approximately 258 feet above mean sea level and gently slopes to the west southwest. Archival research of available historical topographic maps and aerial photographs identified the Project Site as being utilized for agricultural purposes for the past century. The Project Site is surrounded by agricultural land uses to the east, planned residential developments to the north and west, and vacant land to the south.

2.3. Other Permits and Approvals

- City of Tulare
    - Approval of the Tentative Subdivision Map
    - Other ministerial actions such as grading, building, and encroachment permits
- San Joaquin Valley Air Pollution Control District (SJVAPCD)
    - Approval of the Dust Control Plan
    - Compliance with Rule VIII, 3135, 4101, and 9510
- Central Valley Regional Water Quality Control Board
    - Approval of the Stormwater Pollution Prevention Plan

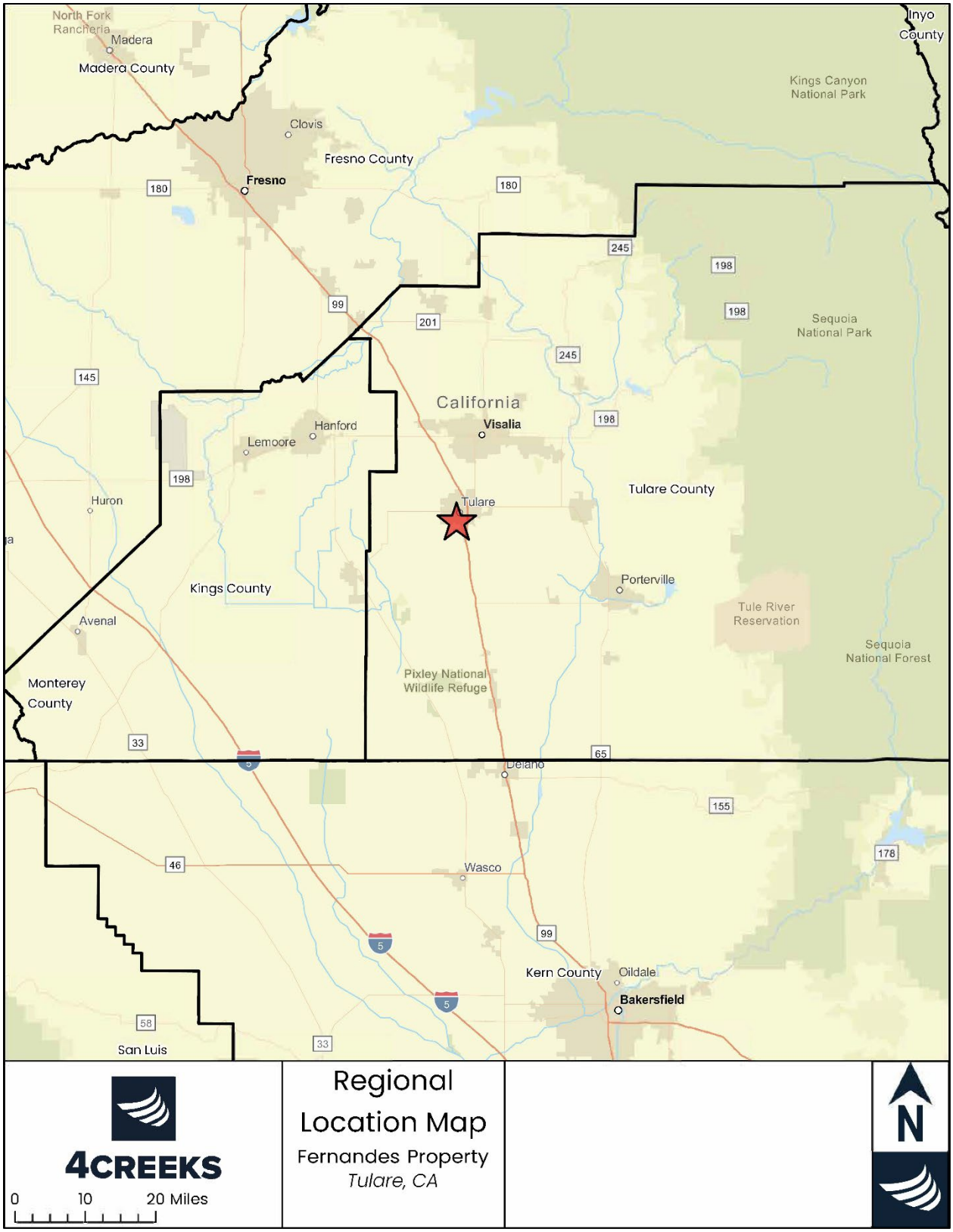


Figure 2-1. Regional Location Map



Figure 2-2. Vicinity Map

City of Tulare
411 E Kern Ave
Tulare, CA 93274

SECTION 3: Evaluation of Environmental Impacts
Project Title: Fernandes Property Subdivision

This document is the Initial Study/Mitigated Negative Declaration for the proposed subdivision of approximately 19.58 acres of undeveloped land for the construction and operation of 120 single-family residential dwelling units. The City is the Lead Agency for this Project under CEQA and the State CEQA Guidelines.

3.1 Purpose

This environmental document aims to implement CEQA. State CEQA Guidelines Section 15002(a) describes the basic purposes of CEQA:

(1) Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
(2) Identify the ways that environmental damage can be avoided or significantly reduced.
(3) Prevent significant, avoidable damage to the environment by requiring changes in Projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
(4) Disclose to the public the reasons why a governmental agency approved the Project in the manner the agency chose if significant environmental effects are involved.

This Initial Study of environmental impacts has been prepared to conform to the requirements of CEQA (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). According to State CEQA Guidelines Section 15070, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:

(1) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the Project may have a significant effect on the environment, or
(2) The initial study identifies potentially significant effects, but:
a.) Revisions in the Project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and;
b.) There is no substantial evidence, in light of the whole record before the agency, that the Project as revised may have a significant effect on the environment.

3.2 Initial Study/Mitigated Negative Declaration

1. **Project Title:** Fernandes Property Subdivision

2. **Lead Agency:** City of Tulare
411 E. Kern Avenue
Tulare, CA 93274
Contact Person: Steven Sopp, Principal Planner
Phone Number: (559) 684-4216

3. **Applicant:** Artemis Partners, LLC
324 S. Santa Fe Street, Suite A
Visalia, CA, 93292
(559) 737-3748

4. **Contact Person:** Matt Ainley
matta@artemispartners.io

5. **Project Location:** The Project Site consists of approximately 19.58 acres of land in the southern portion of the City encompassing one parcel (APN 174-030-008) approximately 500 feet southeast of the southern terminus of south 'E' Street near the intersection of Lemonwood Avenue. The Project Site is currently an agricultural land use, containing pistachio trees as well as one existing residence and an accessory structure (barn). It is approximately 258 feet above mean sea level and gently slopes to the west southwest. Archival research of available historical topographic maps and aerial photographs identified the Project Site as being utilized for agricultural purposes for the past century. The Project Site is surrounded by agricultural land uses to the north, east, and west as well as a vacant use to the south. However, two residential developments are planned to the north and west of the site.

6. **General Plan Designation:** Low Density Residential

7. **Zoning Designation:** R-1-4 (Single-Family Residential, minimum 4,000-square-foot-lot).

8. **Project Description:** The Project proposes to subdivide the 19.58-acre site into a 120-lot single-family residential subdivision including a stormwater retention park/pond. Proposed infrastructure improvements also include extension of public streets and utilities for the proposed homes.

   Parking and Access
   Each residential lot would include a private driveway and attached two-car garages for each home. Additional street parking will be provided for residents/visitors. Access to the Project Site is provided via Paige Avenue to the south with additional access ultimately

being provided to the north and west through the future construction of subdivisions that have recently been entitled but have not yet been built.

Open Space Recreation
The Project would include a 0.85-acre open grass area park/pond with a playground included. This park/pond will connect to the park/pond in the planned Valov Subdivision, that was recently approved by the Planning Commission, to the north of the site.

Utilities
Southern California Edison (SCE) would provide electricity to the Project Site. AT&T would provide telecommunications. Stormwater would be retained on-site, and the on-site pond will be located within the park in the northeast corner of the site. This park/pond is planned to connect to the basin located in the proposed subdivision to the north. The sewer for the Project would tie into an existing 27-inch diameter pipeline in Driftwood Avenue. The Project will tie-into water lines within the existing residential development, located approximately 500 feet northwest, along S E St, Lemonwood Ave, and Driftwood Ave, of the project site. Additionally, there is a future water pipeline (P-72) proposed along Paige Ave identified in the City's Water System Master Plan.

9. Surrounding Land Uses and Settings:

North:
- Existing Land Use: Agriculture Uses
- Zoning: R-1-5 (Single-Family Residential)
- General Plan Designation: Low Density Residential

South:
- Existing Land Use: Vacant
- Zoning: M-1 (Light Industrial)
- General Plan Designation: Light Industrial

East:
- Existing Land Use: Agricultural Uses
- Zoning: M-2 (Heavy Industrial)
- General Plan Designation: Heavy Industrial

West:
- Existing Land Use: Agriculture Uses
- Zoning: R-1-5 (Single-Family Residential)
- General Plan Designation: Low Density Residential

10. Required Approvals: The following discretionary approvals are required for the proposed Project. It should be noted that this list is not exhaustive and additional permits and approvals may also be required:

- City of Tulare
    - Approval of the Tentative Subdivision Map

    - Other ministerial actions such as grading, building, and encroachment permits
- San Joaquin Valley Air Pollution Control District (SJVAPCD)
    - Approval of the Dust Control Plan
    - Compliance with Rule VIII, 3135, 4101, and 9510
- Central Valley Regional Water Quality Control Board
    - Approval of the Stormwater Pollution Prevention Plan

11. **Native American Consultation:** AB 52 requires the lead agency to notify tribes that have previously indicated they are traditionally and culturally affiliated with that geographic area regarding their expertise concerning tribal cultural resources. As part of the process of identifying tribal cultural resources in or near the Project Site, the City sent a letter via certified mail on February 13, 2025, to the Santa Rosa Rancheria Tachi Yokut Tribe inviting the tribe to consult with the City regarding this Project. The 30-day response window closed on March 13, 2025. No response or request for consultation was received.

Acronyms

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
APCD	Air Pollution Control District
AQMD	Air Quality Management District
ARB	Air Resources Board
BMP	Best Management Practices
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CRHR	California Register of Historical Resources
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon Monoxide
DOC	California Department of Conservation
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
HCS	Hierarchical Cell Structure
HSC	Health and Safety Code
ISMND	Initial Study Mitigated Negative Declaration
LOS	Level of Service
MCL	Maximum Contaminant Level
MEIR	Master Environmental Impact Report
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NOI	Notice of Intent
NRHP	National Register of Historic Places
NPDES	National Pollutant Discharge Elimination System
OS	Open Space
O3	Ozone
PM10	Particulate Matter less than 10 microns
PM2.5	Particulate Matter less than 2.5 microns
PRC	Public Resources Code
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SB	Senate Bill

SJVAPCD San Joaquin Valley Air Pollution Control District
SWPPP Storm Water Pollution Prevention Plan
TAC Toxic Air Contaminant
TCR Tribal Cultural Resource
USGS United States Environmental Protection Agency
USEPA United States Geological Survey
USDOT United States Department of Transportation

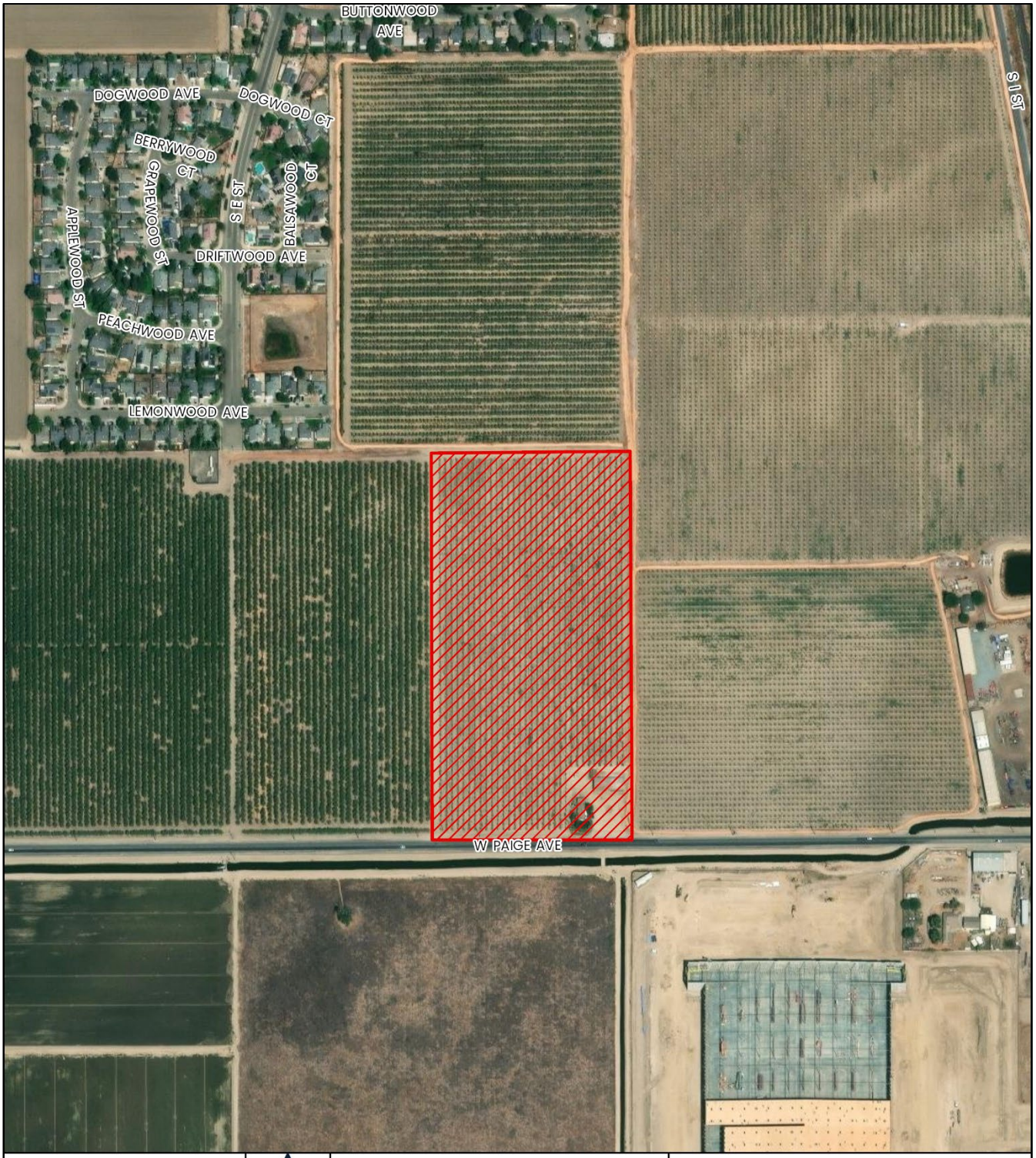


Figure 3-1. Vicinity Map



Figure 3-2: Site Plan

3.3 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 reference 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 will 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 impact.
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 if 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 (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
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:
    - Earlier Analysis Used. Identify and state where they are available for review.
    - Impacts 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.
    - Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated." Describe and 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.

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

DETERMINATION: (To be completed by the Lead Agency) Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

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. A Negative Declaration 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 requested.

SIGNATURE	DATE
Steven Sopp	City of Tulare
PRINTED NAME	LEAD AGENCY

3.5 Environmental Analysis

The following section evaluates the impact categories and questions in the checklist and identifies mitigation measures, if applicable.

I. AESTHETICS

Would the Project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highway?	☐	☐	☐	☑
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the Site and its surroundings? (Public views are those that are experienced from a 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?	☐	☐	☑	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

Environmental Setting

The following photos demonstrate the aesthetic character of the Project Site area. As shown, the proposed Site is on a relatively flat area with agriculture, surrounded by agriculture uses. The Sierra Nevada Mountains are generally slightly visible on an average day when facing east.



Photo 1: South Side Boundary (Facing North) Source: Google Maps June 2023

There are no aesthetic resources identified in the City of Tulare General Plan; however, the views of the Sierra Nevada Mountains are considered to be an important scenic vista in Tulare County.

Sierra Nevada Mountains: The Sierra Nevada Mountain range and its foothills stretch along the east area of the county and are a valuable aesthetic resource. Additionally, Sequoia National Park is located within the stretch of the Sierra Nevada Mountains located in Tulare County. Sequoia National Forest is a U.S. National Forest known for its mountain scenery and natural resources. Located directly north of Sequoia National Park is Kings Canyon National Park, a U.S. National Park also known for its towering sequoia trees and scenic vistas. The Sierra Nevada Mountains are approximately 20 miles east of the proposed Project Site and are generally visible on an average day when facing east.

Regulatory Setting

State Scenic Highways: The State Scenic Highway Program is implemented by the California Department of Transportation (Caltrans) and was developed to preserve the aesthetic quality of certain highway corridors. Highways included in this program are designated as scenic highways. A highway is designated as scenic based on how much of the natural landscape is visible to travelers, the quality of that landscape, and the extent to which development obstructs views of the landscape. There are no designated State Scenic Highways or highways that are eligible for designation within the City of Tulare.

City of Tulare General Plan: The City of Tulare General Plan includes the following aesthetic goals and policies that are intended to protect the City's aesthetic resources and are relevant to the proposed Project.

- LU-P13.14 Scenic Features and Views. The City shall preserve its scenic features and view corridors to the mountains.

- LU-P13.2 City Image. The City shall encourage a high level of design quality (architectural and landscape) for all new development in order to create a pleasant living environment, a source of community pride, and an improved overall City image.
- LU-P13.24 Minimize Lighting Impacts. The City shall ensure that lighting in residential areas and along roadways shall be designed to prevent artificial lighting from reflecting into adjacent natural or open space areas.
- LU-P13.25 Outdoor Lighting. The City shall ensure that future development includes provisions for the design of outdoor light fixtures to be directed/shielded downward and screened to avoid nighttime lighting spillover effects on adjacent land uses and nighttime sky conditions.

Discussion

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

Less Than Significant Impact: A scenic vista is defined as a viewpoint that provides expansive views of highly valued landscapes for the benefit of the general public. The Sierra Nevada Mountains are the primary scenic vista within this region, and the Land Use Element of the City's General Plan states that view corridors to the mountains should be preserved. These view corridors are typically found along major arterial streets in the City and on its periphery.

The Project Site is located in southern Tulare, approximately 20 miles west of the foothills of the Sierra Nevada Mountains. Due to the distance and intervening urban development, views of the mountains from the Site are limited. Additionally, poor air quality often obscures visibility of distant features like the Sierra Nevada Mountains. The Project involves developing a 19.58-acres of agricultural land into 120 single-family residential homes and a stormwater retention park/pond in the northeast corner of the project site.

Given the Project's distance from the Sierra Nevada Mountains and the existing surrounding development, the Project would not obstruct or degrade any designated scenic vistas. Therefore, the impact on scenic vistas is *less than significant.*

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

No Impact: There are no officially designated State Scenic Highways within the City of Tulare. The nearest eligible State Scenic Highway is Highway 198, located approximately 10 miles north of the Project Site. Both the distance and built environment between the Project Site and Highway 198 precludes visibility of the Project Site from Highway 198.

Additionally, the Project Site is currently agricultural land with no scenic resources such as significant trees, rock outcroppings, or historic buildings. Therefore, the Project would not damage any scenic resources within a state scenic highway corridor. *No impact* would occur.

c) In non-urbanized areas, would the Project substantially degrade the existing visual character or quality of the Site and its surroundings? (Public views are those that are experienced from a 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 Project Site is located within the City limits and is considered part of an urbanized area. The Project Site is zoned and designated for residential land uses. The development of single-family homes on the Project Site would also complement the existing residential neighborhoods to the north and west and future developments that could occur that are also consistent with the underlying zoning and General Plan land use designations.

The Project design is required to adhere to the City's zoning regulations and design guidelines, and no variance from such regulations and standards is proposed, thus the Project would align with the aesthetic character of the surrounding community. Landscaping, building materials, and architectural styles would likewise be consistent with City standards and the existing neighborhood. Therefore, the Project would not conflict with applicable zoning or regulations governing scenic quality and would result in a *less than significant impact.*

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

Less Than Significant Impact: The Project would introduce new lighting sources on the Project Site, including street lighting, exterior residential lighting, and interior lighting visible from windows at night. These lighting installations are typical for residential developments and are necessary for safety and functionality.

Project lighting would comply with the City's lighting standards and ordinances, which are designed to minimize light spillover, glare, and skyglow. Specifically, the Project would adhere to the City's General Plan Policies LU-P13.24 and LU-P13.25, which require that lighting be directed downward and shielded to prevent excessive glare and light trespass onto adjacent properties. Given these considerations, the new lighting would not adversely affect day or nighttime views in the area. While the Project would introduce new sources of light, the Project Site is adjacent to an existing single-family residential area and within urbanized City limits. Additionally, the Project would adhere to City standards that would ensure that impacts related to light and glare. Therefore, the Project would result in a *less than significant impact.*

II. AGRICULTURE AND FOREST RESOURCES:

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☑	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☑
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)?	☐	☐	☐	☑
d) Result in the loss of forestland or conversion of forest land to non-forest use?	☐	☐	☐	☑
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 forestland to non-forest use?	☐	☐	☑	☐

Environmental Setting

Agriculture is a vital component of the City's economy and is a significant source of the City's cultural identity. As such, preserving the productivity of agricultural lands is integral to maintaining the City's culture and economic viability.

The Project Site is not under a Williamson Act contract and is designated as Prime Farmland by the Department of Conservation's Farmland Mapping and Monitoring Program. The Project Site is currently used for agricultural operations.

Regulatory Setting

California Land Conservation Act of 1965: The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, allows local governments to enter into contracts with private landowners to restrict the activities on specific parcels of land to agricultural or open space uses. The landowners benefit from the contract by receiving greatly reduced property tax assessments. The California Land Conservation Act is overseen by the California Department of Conservation; however local governments are responsible for determining specific allowed uses and enforcing the contract. The City of Tulare General Plan states that the City encourages the use of Williamson Act contracts on parcels located outside the urban development boundary.

California Farmland Mapping and Monitoring Program (FMMP): The FMMP is implemented by the California Department of Conservation (DOC) to conserve and protect agricultural lands within the State. The land included in this program is based on soil type, annual crop yields, and other factors that influence the quality of farmland. The FMMP mapping categories for the most important statewide farmland are as follows, defined by the DOC:

- ***Prime Farmland*** has the ideal physical and chemical composition for crop production. It has been used for irrigated production four years before classification and can produce sustained yields.

- ***Farmland of Statewide Importance*** has been used for irrigated production four years before classification and is only slightly poorer quality than Prime Farmland.

- ***Unique Farmland*** has been cropped four years before classification and does not meet the Prime Farmland or Farmland of Statewide Importance criteria, but it has produced specific crops with high economic value.

- ***Farmland of Local Importance*** encompasses farmland that does not meet the criteria for the previous three categories. These may lack irrigation, produce major crops, be zoned as agricultural, and/or support dairy.

- ***Grazing Land*** has vegetation that is suitable for grazing livestock.

- ***Urban and Built-up Land*** is occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other

transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

City of Tulare General Plan: The Conservation and Open Space Element of the City's General Plan includes the following agricultural resource goals and policies that are potentially applicable to the proposed Project:

- COS-P3.1 Protect Interim Agricultural Activity. The City shall protect the viability of existing interim agricultural activity in the UDB to the extent possible.
- COS-P3.2 Agricultural Buffers. The City shall require that agricultural land uses designated for long-term protection (in a Williamson Act contract or under a conservation easement located outside the City's UDB) shall be buffered from urban land uses through the use of techniques including, but not limited to, spatial separations (e.g. greenbelts, open space setbacks, etc.), transitions in density, soundwalls, fencing, and/or berming.
- COS-P3.3 Agricultural Disclosures. The City shall require that developers of residential projects, which are within general proximity of agricultural operations in the city, to provide notification to new homeowners within their deeds of the City's right to farm ordinance.
- COS-P3.4 Discourage Leapfrog Development. The City shall discourage leapfrog development (defined as urban development more than 1/2 mile from existing urban development) and development of peninsulas extending into agricultural lands to avoid adverse effects on agricultural operations and contribute to premature conversion.
- COS-P3.9 Williamson Act Contracts. The City shall encourage the use of Williamson Act contracts on parcels located outside the UDB.
- COS-P3.10 Williamson Act Contracts near City Limits. The City shall protest the formation of new Williamson Act or Super Williamson Act contracts within the UDB.
- COS-P3.11 Williamson Act Non-Renewal in UDB. The City shall support non-renewal or cancellation processes for Williamson Act designated lands within the City of Tulare UDB.
- COS-P3.12 Mitigation for Agricultural Land Conversion. The City shall create and adopt a mitigation program to address the conversion of Prime Farmland & Farmland of Statewide Importance within the UDB and outside the city limits to non-agricultural uses. This mitigation program shall:
    - Require a 1:1 ratio of agricultural land preserved for every acre of land converted. o Require land to be preserved be equivalent to the land converted, e.g. Prime Farmland, and further require that the land to be preserved has adequate existing water supply to support agricultural use, is designated and zoned for agriculture, is located outside of a city UDB, and is within the southern San Joaquin Valley.

  - Require mitigation prior to or at time of impact. o Allow mitigation to be provided either by purchase of agricultural easements or by payment of agricultural mitigation fees, but state that purchase of conservation easements is the preferred form of mitigation. Both purchase of easements and payment of mitigation fees should cover not only the cost of an agricultural easement, but additional costs of transactional fees and administering, monitoring, and enforcing the easement.
  - Require easements to be held by and/or mitigation fees to be transferred to a qualifying entity, such as a local land trust with demonstrated experience administering, monitoring and enforcing agricultural easements.
  - Require the qualifying entity to submit annual status and monitoring reports to the City and to Tulare County.
  - Allow stacking of conservation and agricultural easements if habitat needs of species on conservation easement are compatible with agricultural activities/use on agricultural easement.
  - Allow exemptions for conversion of land to agricultural tourism uses, agricultural processing uses, agricultural buffers, public facilities, and roadways.
- COS-P3.13 Farmland Trust and Funding Sources. The City shall encourage the trust or other qualifying entity to pursue a variety of funding sources (grants, donations, taxes, or other funds) to fund further implementation of mitigation for agricultural land conversion.



Figure 3-4: Important Farmlands Map

Discussion

a) Would the Project 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?

Less Than Significant Impact: The Project Site is designated as Prime Farmland under DOC's FMMP. The Project Site is currently used for agricultural operations. However, the Project Site is located within the City's Urban Development Boundary (UDB) and within the City limits. The Project Site is zoned for single-family residential land use and designated by the General Plan for low-density residential consistent with the zoning. The Project would develop 120 single-family residential homes and a park/pond, which aligns with the planned land use for the area to accommodate anticipated urban growth.

The Project Site is already within the City limits, and therefore General Plan Policy COS-P3.12, requiring a farmland mitigation, does not apply to this Project. No farmland mitigation will be required for the Project. As the Project is within the City and its UDB and on land already designated for residential use, the Project supports the City's goals for orderly urban growth and efficient land use that was articulated in the General Plan's Environmental Impact Report. Therefore, given that the Project is consistent with the City's General Plan and zoning ordinances, the Project would result in a *less than significant impact.*

b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act Contract?

No Impact: The Project Site is not zoned for agricultural use nor is the Project Site under an active Williamson Act contract. The Project Site is zoned for residential, and the proposed Project is consistent with the existing underlying zoning. Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and *no impact* would occur.

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

No Impact: The Project Site is not zoned for forest land, timberland, or Timberland Production. There is no forest land located on the Project Site, and the Project does not involve any activities related to forestry resources. The Project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland. Therefore, *no impacts* would occur.

d) Would the Project result in the loss of forestland or conversion of forest land to non-forest use?

No Impact: The Project Site does not contain any forestland as defined under Public Resources Code section 12220(g) or Government Code. The Project Site is currently used for agricultural purposes and is zoned for residential development. Therefore, the Project would not result in the loss of forestland or the conversion of forest land to non-forest use, and *no impacts* would occur.

e) Would the Project 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 forestland to non-forest use?

Less Than Significant Impact: The Project would permanently convert approximately 19.58 acres of Prime Farmland from agricultural use to residential use. While this represents a direct conversion of Farmland, several factors mitigate the significance of this impact:

- Consistency with UDB: The Project Site is within the City's UDB and City limits, where urban development is anticipated and encouraged. This aligns with Policy COS-P3.4, which discourages leapfrog development and promotes contiguous urban growth to minimize adverse effects on agricultural operations. The Project would complement the existing single-family residential land uses to the immediate north and west of the Project Site.
- Zoning and General Plan Compliance: The Project Site is zoned for single-family residential development and designated by the General Plan for low-density residential, which is consistent with the zoning. The Project's proposed land use of single-family residential supports the City's objectives for housing and community development.
- Adjacent Land Uses: The Project is near existing low-density residential developments to the north and adjacent proposed residential developments to the north and west. The Project would complement the residential neighborhoods that are located to the north and west and improve community development cohesion.
- Agricultural Buffers and Disclosures: In accordance with Policies COS-P3.2 and COS-P3.3, the Project would implement measures such as spatial separations, fencing, or landscaping to buffer any nearby agricultural operations. Developers would provide notifications to new homeowners regarding the proximity of agricultural activities and the City's right-to-farm ordinance.
- No Impact on Adjacent Farmland: The Project is not expected to directly induce the conversion of adjacent Farmland to non-agricultural uses per se, since the Project is consistent with the City's anticipated and previously approved growth patterns, which includes the land surrounding as well as the Project Site. It should be noted that the current agricultural land use to the east is zoned for residential, and the current agricultural land use to the south is zoned for light industrial, and land to the west is

unincorporated county land within the City's UDB and designated by the City for open space/agriculture. Development of these agricultural areas, which includes designated Farmland, would be independent of the Project's approval and development.

While the Project involves the conversion of designated Farmland to a non-agricultural use, the impact is considered *less than significant* due to compliance with the City's planning policies, mitigation measures, and the promotion of orderly urban growth within the UDB.

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:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☑	☐	☐
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?	☐	☐	☑	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

The following analysis is based on the Air Quality, Greenhouse Gas, and Energy Assessment prepared for the Project in January 2025, which is available in Appendix A to this report; and the Health Risk Assessment prepared by Core Environmental Consulting in February 2025, which is available in Appendix B to this report.

Environmental Setting

San Joaquin Valley Air Basin

The Project lies in western Tulare County, within the San Joaquin Valley Air Basin. The San Joaquin Valley Air Basin is bordered by the Sierra Nevada Mountains to the east, Coastal Ranges to the west, and the Tehachapi Mountains to the south. These mountain ranges restrict air movement and prevent the dispersal of pollution in the Valley below.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is comprised of the San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare counties and the Valley portion of Kern County and has jurisdiction over most air quality matters in the San Joaquin Valley Air Basin (SJVAB). Due to topographic features and the prevalence of agriculture in the region, the San Joaquin Valley Air Basin has one of the most severe air pollution problems in the State of California and the nation. Air pollution is hazardous to health, reduces visibility, degrades or soils materials, and can damage native vegetation. State and national ambient air quality

standards were created to protect health and welfare, and to minimize other impacts. The ambient air quality standards are outlined in the Regulatory Setting section.

The SJVAPCD has developed a Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) to act as an advisory document for addressing air quality in environmental documents. The GAMAQI was used as a guide for addressing air quality impacts in this report.

Air Pollutants of Concern

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards for outdoor concentrations. The federal and state standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons such as children, pregnant women, and the elderly, from illness or discomfort. Criteria air pollutants include ozone (O3), nitrogen dioxide (NO2), carbon monoxide (CO), sulfur dioxide (SO2), particulate matter 2.5 microns or less in diameter (PM2.5), particulate matter ten microns or less in diameter (PM10), and lead (Pb). Note that reactive organic gases (ROGs), which are also known as reactive organic compounds (ROCs) or volatile organic compounds (VOCs), and nitrogen oxide (NOx) are not classified as criteria pollutants. However, ROGs and NOx are widely emitted from land development projects and participate in photochemical reactions in the atmosphere to form O3; therefore, NOx and ROGs are relevant to the proposed Project and are of concern in the air basin and are listed below along with the criteria pollutants. As shown in Table 3-1, the SJVAB is in nonattainment for several pollutant standards.

Ozone: Ozone is not emitted directly into the environment but is generated from complex chemical reactions between reactive organic gases (ROG), or non-methane hydrocarbons, and oxides of nitrogen (NOX) that occur in the presence of sunlight. ROG and NOX generators in Tulare County include motor vehicles, recreational boats, other transportation sources, and industrial processes.

PM10: PM10, or particulate matter, is a complex mixture of primary or directly emitted particles, and secondary particles or aerosol droplets formed in the atmosphere by precursor chemicals.

Carbon Monoxide: Carbon Monoxide (CO) is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks. The primary source of carbon monoxide is automobile use.

Nitrogen Dioxide: Nitrogen Dioxide (NO2) is a brownish, highly reactive gas that is present in all urban atmospheres. NO2 can irritate the lungs, cause bronchitis and pneumonia, and lower

resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O3) and acid rain and may affect both terrestrial and aquatic ecosystems.

The major mechanism for the formation of NO2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO). NO2 plays a key role, together with VOCs, in the atmospheric reactions that produce O3. NO2 forms when fuel is burned at hot temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur Dioxide: Sulfur Dioxide (SO2) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children, and the elderly. SO2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings, and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp, and paper mills and from nonferrous smelters.

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone – Eight hour	Nonattainment/Extreme[e]	Nonattainment
PM 10	Attainment[c]	Nonattainment
PM 2.5	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

[a] See 40 CFR Part 81
[b] See CCR Title 17 Sections 60200-60210
[c] On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.
[d] The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).
[e] Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
[f] Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Table 3-1: San Joaquin Valley Attainment Status. Source: SJVAPCD

Ambient Air Quality

Ambient air quality in Tulare can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. Existing levels of ambient air quality and

historical trends and projections in the vicinity of Tulare are documented by measurements made by the SJVAPCD, which also maintains air quality monitoring stations which process ambient air quality measurements.

The purpose of the monitoring station is to measure ambient concentrations of pollutants and determine whether ambient air quality meets the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). Ozone and particulate matter (PM10 and PM2.5) are pollutants of particular concern in the SJVAB. The monitoring station located closest to the proposed Project site and most representative of air quality near the proposed Project site is the Visalia – W. Ashland Ave station, located at 2005 West Ashland Avenue, Suite G, which is approximately 8.56 miles north of the Project site. Ambient emission concentrations vary due to localized variations in emissions sources and climate and should be considered "generally" representative of ambient concentrations near the Project site. Air monitoring data was retrieved from both the W. Ashland Avenue location and the N. Church Street stations to provide data from the years 2021 to 2023. Both air monitoring stations in Tulare monitor ozone and particulate matter (PM 2.5 & PM 10), but the W. Ashland Avenue location also monitors nitrogen dioxide and PM 2.5 speciation in addition to the other pollutants previously mentioned. Refer to Table 3-2, Tulare – W. Ashland Ave Air Monitoring Station Data for more information.

*Data from Tulare air monitoring stations not available, San Joaquin Air Basin measurements used.

Pollutant	Averaging Time	Item	Standard	2021	2022	2023
Ozone	1 Hour	Max 1 Hour (ppm)	0.09 ppm	0.119	0.114	0.100
		Days > State Standard (0.09 ppm)	--	14	8	3
	8 Hour	Max 8 Hour (ppm)	0.070 ppm	0.099	0.099	0.087
		Days > State Standard (0.070 ppm)	--	52	64	30
		Days > National Standard (0.070 ppm)	--	51	62	27
		Days > National Standard (0.075 ppm)	--	35	26	8
PM 2.5	24-Hour	Max 24 Hour Average Concentration (µg/m^3)	--	129.2	48.3	42.9
		Days > National 24-Hour Standard	--	46.6	18.5	6.1
	Annual	Annual average Concentration (µg/m^3)	12 µg/m^3	16.6	16.1	13.5
PM 10	24-Hour	Max 24 Hour Average Concentration (µg/m^3)	50 µg/m^3	302.1	125.2	107.5
		Days > State 24-Hour Standard	--	151.7*	171.2*	108.5
		Days > National 24-Hour Standard	--	4.7	3.8*	0
	Annual	Annual Average Concentration (µg/m^3)	20 µg/m^3	52.8	54.9	39.1

Table 3-2. W. Ashland Avenue & N. Church Street Air Monitoring Stations Data ***Source:*** *California Air Resources Board Air Quality Statistics – iADAM tool*

California and National Air Quality Standards has been included in Table 3-3 below, California and National Ambient Air Quality Standards.

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration[3]	Primary	Secondary
Ozone (03)	1 Hour	0.09 ppm (180 µg/m³)	--	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m³)	0.075 ppm (147 µg/m³)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m3	--	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	--	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	--
	8 Hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	--
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)	--	--
Nitrogen Dioxide (NO_2) [8]	1 Hour	0.18 ppm (339 µg/m³)	100 ppb (188 µg/m³)	--
	Arithmetic Mean	0.030 ppm (57 µg/m³)	53 ppb (100 µg/m³)	Same as Primary Standard
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m³)	75 ppb (196 µg/m³)	--
	3 Hour	--	--	0.5 ppm (1300 µg/m³)
	24 Hour	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)	--
	Annual Arithmetic Mean	--	0.030 ppm (for certain areas)	--
Lead[10,11]	30 Day Average	1.5 µg/m³	--	--
	Calendar Quarter	--	1.5 µg/m3 (for certain areas)	Same as Primary Standard
	Rolling 3-Month Average	--	0.15 µg/m³	
Visibility Reducing Particles[12]	8 Hour	See Footnote 1	No National Standards	
Sulfates	24 Hour	25 µg/m³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)		
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m³)		

Table 3-3. Ambient Air Quality Standards; Source: California Air Resources Board (CARB). 2016.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the

pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

To date, CARB has designated 244 compounds as TACs. 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 a relatively few compounds. CARB identified diesel particulate matter (DPM) as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particulates and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, lightheadedness, and nausea. DPM poses the greatest health risk among the 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.

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 cardiovascular diseases. Residential areas are considered sensitive receptors to air pollutions 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. Children are considered more susceptible to health effects of air pollution due to their immature immune systems and developing organs. As such, schools are also considered sensitive receptors, as children are present for extended

durations and engage in regular outdoor activities. 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.

Regulatory Setting

Regional Attainment Status

The state and federal standards for the criteria pollutants are presented in Section 8.4 of The San Joaquin Valley Unified Air Pollution Control District's 2015 "Guidance for Assessing and Mitigating Air Quality Impacts". These standards are designed to protect public health and welfare. The "primary" standards have been established to protect public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soils, water, visibility, materials, vegetation, and other aspects of general welfare. The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005, and the annual PM_{10} standard on September 21, 2006, when a new $PM_{2.5}$ 24-hour standard was established.

CEQA requires lead agencies to determine if each Project of a certain threshold has an impact on the air quality of the area. The Air Quality standards and Greenhouse Gas guidance measures are used to establish levels of air quality impact of a Project. The following regulatory background represents global, federal, state, and local standards and guidance that have been reviewed in this study.

Federal Clean Air Act: The 1977 Federal Clean Air Act (CAA) authorized the establishment of the National Ambient Air Quality Standards (NAAQS) and set deadlines for their attainment. The Clean Air Act identifies specific emission reduction goals, requires both a demonstration of reasonable further progress and an attainment demonstration, and incorporates more stringent sanctions for failure to meet interim milestones. The U.S. EPA is the federal agency charged with administering the Act and other air quality-related legislation. EPA's principal functions include setting NAAQS; establishing minimum national emission limits for major sources of pollution; and promulgating regulations. Under CAA, the NCCAB is identified as an attainment area for all pollutants.

California Clean Air Act: California Air Resources Board coordinates and oversees both state and federal air pollution control programs in California. As part of this responsibility, the California Air Resources Board monitors existing air quality, establishes California Ambient Air Quality Standards, and limits allowable emissions from vehicular sources. Regulatory authority within established air basins is provided by air pollution control and management districts, which control stationary-source and most categories of area-source emissions and develop regional air quality plans. The Project is located within the jurisdiction of the San Joaquin Valley Air Pollution Control District.

San Joaquin Valley Air Pollution Control District: The SJVAPCD is responsible for enforcing air quality standards in the Project area. The following SJVAPCD rules and regulations may apply to the proposed Project:

- **Rule 2010:** Permits Required. The purpose of this rule is to require any person constructing, altering, replacing, or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate. This rule also explains the posting requirements for a Permit to Operate and the illegality of a person willfully altering, defacing, forging, counterfeiting, or falsifying any Permit to Operate.
- **Rule 3135:** Dust Control Plan Fee. All Projects which include construction, demolition, excavation, extraction, and/or other earth moving activities as defined by Regulation VIII (Described below) are required to submit a Dust Control Plan and required fees to mitigate impacts related to dust.
- **Rule 4002:** National Emission Standards for Hazardous Air Pollutants. This rule incorporates the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR) and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR).
- **Rule 4101:** Visible Emissions. District Rule 4101 prohibits visible emissions of air contaminants that are dark in color and/or have the potential to obstruct visibility.
- **Rule 4102:** Nuisance. The purpose of this rule is to protect the health and safety of the public.
- **Rule 4601:** Architectural Coatings. The purpose of this rule is to limit VOC emissions from architectural coatings. This rule specifies architectural coatings storage, cleanup, and labeling requirements.
- **Rule 4641:** Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.
- **Rule 4662:** District Rule 4662 was developed to help reduce emissions of volatile organic compounds (VOC) and hazardous air pollutants produced from degreasing operations, in which an enclosure or device is used for removing dirt, oil, grease and other contaminants.
- **Rule 4663:** District Rule 4663 was developed to limit the emissions of volatile organic compounds (VOCs) from organic solvent cleaning and from the storage and disposal of solvents and waste solvent materials.
- **Rule 9510:** Indirect Source Review (ISR). This rule reduces the impact PM10 and NOX emissions from growth on the SJVB. This rule places application and emission

reduction requirements on applicable development Projects in order to reduce emissions through onsite mitigation, offsite SJVAPCD administered Projects, or a combination of the two. This Project will submit an Air Impact Assessment (AIA) application in accordance with Rule 9510's requirements.

- **Regulation VIII:** Fugitive PM10 Prohibitions. Regulation VIII is composed of eight rules which together aim to limit PM10 emissions by reducing fugitive dust. These rules contain required management practices to limit PM10 emissions during construction, demolition, excavation, extraction, and/or other earth moving activities.

Tulare County Regional Bicycle Transportation Plan: Tulare County Association of Governments' (TCAG) Tulare County Regional Bicycle Transportation Plan from 2010 has influence on internal and access streets to the Project site. In this Bike Plan there is a proposed Class II bike lane that connects the residential neighborhood to the north, to the Project site along South E Street, and ultimately to a separate Class I bike path along the Project's southern edge on West Paige Avenue. The following objectives and corresponding policies relating to this project are as follows:

- **Objective A:** Implement the Bicycle Transportation Plan, which identifies existing and future needs, and provides specific recommendations for facilities and programs over the next four (4) years and beyond.

  A.2. Establish and maintain uniform standards so major developments are required to make bicycle improvements as development happens.

  A.6. Encourage Plan adoption by all local jurisdictions within Tulare County.
- **Objective B:** Complete a network of bikeways that is feasible, fundable over the life of the Plan, and that serve bicyclists' needs, especially for travel to employment centers, schools, commercial districts, transit terminals and recreational destinations.

  B.1. Encourage jurisdictions to develop a bicycle network that connects neighborhoods, cities and communities.

  B.4. Coordinate with local jurisdictions and developers in Tulare County to ensure appropriate opportunities for bicycle connections are planned, constructed, and maintained.
- **Objective E:** Increase Bicycle Ridership in Tulare County

  E.2. Include bicycle facilities as an integral part of future developments across Tulare County and connect to other existing and proposed bicycle facilities.

  E.4. Provide convenient bicycle access and bicycle parking at schools, parks, neighborhoods, shopping centers, government buildings, and local businesses.

Discussion

Thresholds of Significance

The impact analysis provided in the discussion below is based on the application of the following CEQA Guidelines Appendix G, which indicates that a project would have a significant impact on air quality if it would:

1. *Conflict with or obstruct implementation of any applicable air quality plan.*
2. *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.*
3. *Expose sensitive receptors to substantial pollutant concentrations.*
4. *Results in other emissions (such as those leading to odors) adversely affecting a substantial number of people.*

The significance criteria established by the applicable air quality management or air pollution control district (i.e., SJVAPCD for the Project) may be relied upon to make the above determinations. According to the SJVAPCD, an air quality impact is considered significant if the proposed Project would violate any ambient air quality thresholds, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SJVAPCD has established thresholds of significance for air quality for construction and operational activities of land use development projects, which is shown in Table 3-4. – SJVAPCD Thresholds of Significance for Criteria Pollutants.

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Table 3-4. Regional Thresholds for Construction and Operational Emissions; Source: SJVAPCD 2015. Guidance for Assessing and Mitigating Air Quality Impacts.

SJVAPCD has also established the following thresholds of significance for risk exposure to toxic air contaminants to nearby sensitive receptors to the Project site, shown below in Table 3-5.

Carcinogens	Maximally Exposed Individual risk equals or exceeds 20 in one million
Non-Carcinogens	Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Table 3-5. Thresholds of Significance for Toxic Air Contaminants (TAC's); Source: SJVAPCD

CO Hotspot Analysis

In addition to the daily thresholds listed above, the proposed Project area would also be subject to the ambient air quality standards, through an analysis of localized CO impacts. The California 1-hour and 8-hour CO standards are:

- 1-hour = 20 parts per million (ppm)
- 8-hour = 9 parts per million (ppm)

The significance of localized impacts depends on whether ambient CO levels in the vicinity of the Project site are above state and federal standards for carbon monoxide. Carbon monoxide concentrations in the San Joaquin Air Basin currently meets the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO).

Methodology

Air pollution emissions can be estimated by using emission factors and examining the level of activity occurring. Emission factors are the emission rate of a pollutant given the activity over time; for example, grams of NOx per horsepower hour. The ARB has published emission factors for on-road equipment and vehicles in the OFFROAD emission model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator (CalEEMod), Version 2022.1.1, is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutants and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use Projects. The model quantifies direct emissions from construction and operations, including vehicle use, as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The model incorporates Pavley standards and Low Carbon Fuel standards into the mobile source

emission factors. Further, the model identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user. The CalEEMod model was run based off of the following land use assumption:

- Single Family Housing: 120 dwelling units (D.U.s), 19.58 Acres
- City Park: 0.85 acres, 5.37 acres landscaped

CalEEMod default values were used to estimate construction trips, trip lengths, emission factors for construction equipment, trips and VMT, architectural coatings, area sources, water and wastewater, and solid waste generation. In order to account for recent changes to new residential building standards (2022 update to Title 24, Part 6 of the California Code of Regulations), no natural gas usage is expected for the proposed Project. This update mandates that new homes constructed from 2023 onward must be equipped with electric systems capable of supporting all-electric appliances, which assisted the transition for developers. Therefore, all default natural gas emission factors were set to zero. Electricity to the Project Site would be provided by Southern California Edison. Other non-defaults included locational context, Project-specific construction equipment and schedule, the exclusion of gas, propane, and electric fireplaces, and wood stoves, and the use of the SJVAPCD district-accepted operational fleet mix for residential projects.

The full CalEEMod Report for the Project can be found in Appendix A.

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact: The SJVAPCD drafted a series of State Implementation Plans (SIP) for the criteria pollutants that are of concern for the San Joaquin Valley Air Basin. The integration of multiple SIPs for each criteria pollutant collectively forms the air quality plan for the San Joaquin Valley Air Basin. The most recent SIP is the "2024 Plan for the 2012 PM 2.5 Standard", which focuses on meeting the annual PM 2.5 standard of 12 micrograms/cubic meters originally set in 2012. This SIP includes measures to reduce fine particulate matter emissions and improve air quality by the year 2030. The SJVAPCD has established thresholds in the adopted SIPs and other air quality plans prepared by the Air District. These thresholds are depicted in Tables 3-6 and 3-7 for construction and operation. Criteria for determining consistency with the established standards are whether or not the Project's estimated emissions exceed those thresholds established by the Air District. As long as the Project construction and operational emissions do not exceed the thresholds, the Project would not result in new air violations, delay the timely attainment of air quality standards, or result in increased severity of an existing air quality violation.

Short-Term Emissions

Project construction would generate pollutant emissions from the following construction activities: site preparation, grading, building construction, application of architectural coatings, and paving. The short-term emissions from these activities were calculated using CalEEMod Version 2022.1.1. The full CalEEMod Report can be found in Appendix A, respectively. As shown in Table 3-6 below, Project construction related emissions do not exceed the thresholds for criteria pollutants established by the SJVAPCD.

Construction Phase Modeling Parameters

Construction schedule assumptions and lot sizes were based on the approved site plan for the Project and the standards set forth in the City of Tulare Municipal Code and General Plan. Default values provided in CalEEMod were used where detailed Project information was not available. The construction phases for the Project included site preparation, grading, building construction, paving and architectural coating. Total construction is expected to occur over the span of a year (2026-2027). Project-specific values were used for off-road equipment estimations and construction schedule. Default values were used for construction vehicle trips/VMT, VOC content of architectural coatings, and electricity emission factors.

Construction Emissions

Implementation of the Project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind and the direct disturbance and movement of soil, leading to PM10 and PM2.5 emissions. The Project would implement various dust control strategies and would be required to comply with SJVAPCD Regulation VIII to control dust emissions generated during grading activities. Proposed construction practices to reduce fugitive dust emissions include watering active sites and unpaved roads two times per day, depending on weather conditions.

Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of ROGs, NOx, CO, PM10, and PM2.5. The Health Risk Assessment (HRA) conducted by Core Environmental Consulting determined that the diesel particulate matter (DPM) emissions generated during construction would not exceed SJVAPCD thresholds of significance without requiring additional mitigation. Compliance with applicable regulatory requirements, including SJVAPCD Regulation VIII and best management practices, would ensure that health risks associated with DPM emissions remain *less than significant.*

The application of architectural coatings, such as exterior application/interior paint and other finishes, and of asphalt pavement would also produce ROG emissions. Pursuant to Regulation VIII, Rule 8021, Section 6.3, the Project would be required to develop, prepare,

submit, obtain approval of, and implement a dust control plan, which would reduce fugitive dust impacts to less than significant for Project construction.

Table 3-6 presents the estimated emissions generated during construction of the Project. The full CalEEMod estimates can be found in Appendix A of this report.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	NOx (tpy)	PM10 (tpy)	PM2.5 (tpy)
Emissions Generated from Project Construction	1.62	0.05	<0.005	0.34	0.11	0.4
SJVAPCD Thresholds of Significance	100	10	27	10	15	15
*Threshold established by SJVAPCD for SOx, however emissions are reported as SO2 by CalEEMod.						

Table 3-6. Projected Construction Emissions Compared to SJVAPCD Thresholds of Significance Sources: CalEEMod Outputs; SJVAPCD

Long-Term Emissions

Implementation of the proposed Project would result in long-term emissions associated with mobile, energy, and area sources. Operational emissions from these factors were calculated using CalEEMod. The full CalEEMod Report can be found in Appendix A of this report.

Operational Phase Modeling Parameters

CalEEMod default vehicle trips were used to model residential vehicle trip rates and lengths during the operational phase. For area sources of emissions under the operational phase, default values were used for all inputs except for the "Hearths", "Energy", "Fleet Mix" sections. Under the "Hearths" section, all values for woodstoves, gas powered fireplaces, electric fireplaces, propane-powered fireplaces, wood-powered fireplaces were set to zero. The proposed Project will not be connected to any natural gas source. As a result, electricity consumption was adjusted to account for the energy that would have been provided by natural gas by converting the natural gas energy use to kilowatt-hours and adding it to the projected electricity consumption provided by CalEEMod. For the "Fleet Mix", the values used were derived from the SJVAPCD District Accepted Fleet Mix for Residential Projects. For the remaining sections, including Water, Waste, Refrigerants, operational Off-Road Equipment, and Stationary Sources, default values were used, or the section(s) were set to zero.

Operational Emissions

The Project would involve the construction of 120 low-density residential homes. Operation of the Project would generate ROG, NOx, CO, SOx, PM10, and PM2.5 emissions from mobile sources, including vehicle trips from passenger vehicles; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance

equipment; and energy sources, including the use of electric-powered space and water heating. As discussed previously, pollutant emissions associated with long-term operations were quantified using CalEEMod for area, energy, and mobile sources, and were primarily based on CalEEMod default values. Project-generated mobile source emissions were based on the default trip rates provided by CalEEMod. Details of the emissions estimates are provided in Appendix A.

As shown in Table 3-7 below, the Project's operational emissions do not exceed the thresholds established by the SJVAPCD.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	NOx (tpy)	PM10 (tpy)	PM2.5 (tpy)
CalEEMod Mitigation Measures Not Included						
Emissions Generated from Project Operation	6.23	1.64	0.01	0.68	1.24	0.32
SJVAPCD Thresholds of Significance	100	10	27	10	15	15
*Threshold established by SJVAPCD for SOx, however, emissions are reported as SO2 by CalEEMod.						

Table 3-7. Projected Operational Emissions Compared to SJVAPCD Thresholds of Significance; Sources: SJVAPCD, CalEEMod Analysis (Appendix A)

As shown in Tables 3-6 and 3-7, Project construction and operational emissions would not exceed the SJVAPCD thresholds of significance. Since the Project is not anticipated to exceed any SJVAPCD thresholds of significance, the Project will not conflict with or delay the implementation of the SJVAPCD attainment/implementation plans for criteria pollutants. The impacts resulting from CEQA Thresholds a and b would remain *less than significant.*

b) Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or state ambient air quality standard?

Less Than Significant Impact: The SJVAPCD is responsible for bringing air quality in the Tulare Planning Area into compliance with federal and state air quality standards. The significance thresholds and rules developed by the SJVAPCD are designed to prevent Projects from violating air quality standards or significantly contributing to existing air quality violations. As discussed above, neither construction-related emissions nor operation-related emissions will exceed thresholds established by the SJVAPCD. The Project will comply with all applicable SJVAPCD rules and regulations, which will further reduce the potential for any significant impacts related to air quality as a result of Project implementation. Because these thresholds and regulations are designed to achieve and/or maintain federal and state air quality standards, and the Project is compliant with these

thresholds and regulations, the Project will not violate an air quality standard or significantly contribute to an existing air quality violation. The impact is *less than significant.*

c) Would the Project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact: This discussion is partially based on the Health Risk Assessment (HRA) prepared by Core Environmental Consulting, which can be found in Appendix B.

Potential to Impact Sensitive Receptors

Construction Phase. Sensitive receptors are those populations more vulnerable to air pollution, including children, the elderly, and individuals with pre-existing health conditions. The nearest sensitive receptors to the Fernandes Subdivision Project are single-family residences located approximately 120 meters northwest of the project site. Core Environmental Consulting identified 131 residential and worker receptors in proximity to the site.

During construction, diesel particulate matter (DPM), a toxic air contaminant, will be generated by heavy-duty equipment and vehicles. However, the length of exposure is a key factor in determining potential health impacts. Core Environmental Consulting conducted an HRA using CalEEMod, the EPA's American Meteorological Society/EPA Regulatory Model (AERMOD) for air dispersion modeling, and the CARB Hotspots Analysis and Reporting Program (HARP2) Air Dispersion Modeling and Risk Tool (ADMRT) to estimate health risks. The results are shown in Table 3-8 below.

Risk	Carcinogen (max risk in one million)	Chronic Hazard Index
Construction	2.39	0.0014
SJVAPCD Thresholds of Significance	20	1
*Calculation based on mitigated emissions. See Appendix B.		

Table 3-8. HRA Results Compared to SJVAPCD Thresholds of Significance

As shown in Table 3-8, the health risks from construction activities do not exceed the SJVAPCD thresholds of significance for carcinogenic or non-carcinogenic risk. Therefore, the Fernandes Subdivision Project would not expose sensitive receptors to substantial pollutant concentrations, and impacts are considered less than significant under CEQA. No additional mitigation measures are required beyond those incorporated into the project's air quality analysis.

Operational Phase. Once constructed, the subdivision will not generate substantial sources of toxic air contaminants, including diesel particulate matter. While residential activities may involve emissions from household cleaners, paints, landscaping equipment, and vehicle use, these sources are localized, intermittent, and regulated by existing federal, state, and local laws. Compliance with these regulations ensures that operational impacts remain less than significant.

The Fernandes Subdivision Project will generate emissions during construction, but modeled exposure levels are below SJVAPCD thresholds of significance. With no additional mitigation required, the project would not expose sensitive receptors to substantial pollutant concentrations, 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: Some typical construction-related odors would be generated during Project construction. As mentioned in Threshold C, the Project is near sensitive receptors to the northwest, which may be temporarily affected by such odors. The eastern and southern portions of the Project site is separated by large parcels of agricultural and vacant land, with a few industrial facilities located throughout. Due to this, odors will likely not impact a substantial number of people. Additionally, the proposed Project would not include any odor sources identified in Table 6 of the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) and no health risks associated with such odors were identified in the HRA done by Core Environmental.

The Project may create objectionable odors, but the odors would be temporary and would not affect a substantial number of people during construction. The operational phase is solely residential development, so there are no objectionable odors that would result from this phase of the Project. The impact is *less than significant.*

IV. BIOLOGICAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish & Game or U.S. fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☑
c) Have a substantial adverse effect on state or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through director removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
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?	☐	☑	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
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 following analysis is based on the Biological Evaluation prepared for the Project by Soar Environmental Consulting in February 2025. The Site was surveyed on January 27, 2025, for its biotic habitats, the plants and animals occurring in those habitats, and significant habitat values that may be protected by state and federal law. The Biological Evaluation is available in Appendix C to this report.

Environmental Setting

The Project Site's topography is relatively flat, with elevations around 260 feet National Geodetic Vertical Datum (NGVD). The site comprises Nord fine sandy loam and Colpien loam with 0 to 2 percent slopes which are classified as well-drained and non-hydric, indicating it is not prone to ponding water or forming vernal pools. The soils have been altered over decades of agricultural use, so their native characteristics are not fully present.

During site surveys, the predominant land use observed was a pistachio orchard, with ruderal weeds and grasses dominating the edges of the property and center rows within the orchard. Historical imagery analysis reveals that the site has been used for agricultural purposes since at least 1946.

Regulatory Setting

Federal Endangered Species Act (FESA): The Federal ESA protects plants and animals listed as endangered or threatened by USFWS and 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, this statute governs "removing, possessing, maliciously damaging, or destroying any listed plant on Federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-Federal land in knowing violation of state law" (16 U.S. Code [USC] 1538). Under Section 7 of ESA, Federal agencies are required to consult with USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its Critical Habitat (see definition of Critical Habitat below). Through consultation and the issuance of a biological opinion (BO), the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided the activity would not jeopardize the continued existence of the species. Section 10 of ESA provides for issuance of incidental take permits where no other Federal actions are necessary provided a habitat conservation plan (HCP) is developed.

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712): 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. As authorized by the MBTA, the USFWS issues permits to qualified applicants for

the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in §§ 3800, 3513, and 3503.5 of the California Fish and Game Code.

Birds of Prey (CA Fish and Game Code Section 3503.5): Sections 3800, 3513, and 3503 of the California Fish and Game Code specifically protect birds of prey. Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California, that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the commission or a mitigation plan approved by CDFW for mining operations. Section 3513 explicitly prohibits taking or possessing any migratory nongame bird as designated in the MBTA. Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Additionally, Subsection 3503.5 prohibits taking, possessing, or destroying any birds and their nests in the orders Strigiformes (owls) or Falconiformes (hawks and eagles). These provisions, along with the Federal MBTA, serve to protect nesting raptors.

Clean Water Act: Section 404 of the Clean Water Act of (1972) is to maintain, restore, and enhance the physical, chemical, and biological integrity of the nation's waters. Under Section 404 of the Clean Water Act, the US Army Corps of Engineers (USACE) regulates discharges of dredged and filled materials into "waters of the United States" (jurisdictional waters). Waters of the US, including navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries.

California Endangered Species Act (CESA): The California ESA (California Fish and Game Code §§ 2050- 2116) generally parallels the main provisions of 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 Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." the California ESA allows for take incidental to otherwise lawful development Projects. State lead agencies are required to consult with CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened, or candidate species or result in the destruction or adverse modification of essential habitat.

Discussion

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

Less Than Significant Impact with Mitigation Incorporated: The following analysis is based on the Biological Evaluation prepared for the Project by Soar Environmental Consulting in February 2025 (see Appendix C). On January 27, 2025, the Project Site was surveyed to assess its biotic habitats, the plants and animals present, and any significant habitat values that may be protected under state and federal law.

Special Status Species Assessment

According to the Biological Evaluation, of the 12 special status animal species documented in the vicinity, 10 are considered either absent or unlikely to occur on the Project Site due to the lack of suitable habitat. This is attributed to the Site's agricultural use, surrounding urban areas, and its location outside the typical distribution range of these species. Among these 12 species are the Swainson's hawk and the San Joaquin Kit Fox.

Additionally, 2 special-status plant species are known to occur in the region. However, none are expected on the Project Site due to decades of extensive agricultural disturbance and current land use.

Potentially Present Species

The two special-status animal species that may occur on the Project Site are:

- Swainson's hawk (*Buteo swainsoni*): During the field survey, no signs of Swainson's hawk were observed in the Project footprint or surrounding areas. The Project Site lacks suitable nesting and foraging habitat for Swainson's hawk, so the species is not expected to occur on-site. However, they have the potential to nest in the immediate vicinity. Potentially suitable habitat features, such as eucalyptus trees on the eastern boundary of the Project footprint and the electrical towers crossing the Project footprint, may support nesting. Swainson's hawks are well-documented in the area, with 30 CNDDB nesting occurrences within 10 miles—the closest being just 1 mile to the southeast—and over 50 eBird sightings in the same area
- San Joaquin Kit Fox (*Vulpes macrotis mutica)*: There were no signs of San Joaquin kit fox during the Habitat Assessment survey. Suitable habitat for this species is poor within the vicinity of the Project Site. A search of CNDDB records indicates the nearest and most recent occurrence of kit fox is a non-specific area mapped within the city of Tulare from

1992, where a population of kit fox was documented (EONDX 70631). The Project site is located within the nonspecific area mapped for this occurrence record. Due to agriculture and urbanization of the surrounding area, lack of suitable habitat, a lack of burrows that could represent denning habitat observed onsite and the distance of other known occurrences from the site, the occurrence of San Joaquin kit fox within the vicinity of the proposed Project is unlikely. The proposed Project has a low potential to adversely impact populations of this species.

Impact Analysis

- Mammals (San Joaquin kit fox): Due to agriculture and urbanization of the surrounding area, a lack of suitable habitat, and a lack of burrows that could represent denning habitat observed onsite, the occurrence of the San Joaquin kit fox within the vicinity of the proposed Project is unlikely.
- Birds (Swainson's Hawk): The Biological Evaluation concluded that these species are not expected to be adversely affected by the Project-related loss of habitat. Swainson's Hawks are unlikely to utilize the Site due to the absence of suitable nesting and foraging habitat. Therefore, the Project-related habitat loss for these species is considered less than significant under the California Environmental Quality Act CEQA.
- Migratory Birds: Although unlikely, the Site could be used for foraging by several native avian species protected under the Migratory Bird Treaty Act and related state laws. If construction occurs during the nesting season (before February 15 or after September 15), nesting birds on or adjacent to the Site could face injury, mortality, or nest abandonment due to construction activities or disturbances.

Mitigation Measures

To ensure significant impacts do not occur, the Project will incorporate the following mitigation measures (detailed as Mitigation Measures BIO-1 through BIO-3 at the end of this subsection):

- Construction Timing: Schedule construction activities outside the nesting season when feasible to minimize disturbances.
- Preconstruction Surveys: Conduct surveys prior to construction to identify any active nests on or near the Site.
- Avoidance of Active Nests: Establish buffer zones around active nests to prevent disturbance until the young have fledged.

Implementing these measures would reduce potential impacts to nesting birds and raptors, including the Loggerhead Shrike and Swainson's Hawk, to a less-than-significant level under CEQA. This approach ensures compliance with state and federal laws protecting these species. Therefore, with mitigation incorporated, the impacts are considered *less than significant.*

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

No Impact: No riparian habitats, or other sensitive natural communities were found on the Project Site. The Project Site consists of a pistachio orchard and associated infrastructure, with no presence of riparian zones or communities classified as sensitive by local, regional, state, or federal regulations. As a result, the development of the proposed Project would not adversely affect any riparian habitat or sensitive natural community as identified by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS). Therefore, *no impact* is anticipated.

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

No Impact: The Project Site does not contain sensitive natural communities or state- and federally-protected wetlands. Additionally, there are no jurisdictional water features on the site. Therefore, the Project would not impact any state or federally protected wetlands, and *no impact* would occur.

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 with Mitigation Incorporated: Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, rivers and creeks supporting riparian vegetation, and ridgelines. Wildlife movement corridors are absent from the Project Site. The surrounding area includes a residential neighborhood to the north and west. Consequently, the Project would not significantly interfere with the movement of any resident or migratory fish or wildlife species, nor would it impact established wildlife corridors or impede the use of wildlife nursery sites.

Although unlikely, the Project Site could be utilized for foraging by several native avian species protected under the Migratory Bird Treaty Act and related state laws. If construction activities occur during the nesting season (February 15–September 15), birds nesting on-site or adjacent to it could face injury or mortality from construction activities or disturbances that might lead to nest abandonment. Therefore, the Project would incorporate mitigation measures to ensure significant impacts do not occur. Specifically, mitigation measures regarding construction timing, preconstruction surveys, and the avoidance of active nests as Mitigation Measure BIO-1 through BIO-3, respectively, as detailed at the end of this subsection. Implementation of these

measures would reduce potential project impacts to nesting birds and raptors, including loggerhead shrike and Swainson's hawk, to a less than significant level under CEQA and facilitate compliance with state and federal laws protecting these species. Therefore, impacts would be *less than significant with mitigation incorporated.*

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

No Impact: The City of Tulare General Plan includes policies for the preservation and maintenance of Oak (Quercus sp.) species and their habitats, along with regulations for the maintenance of street trees along city roads. No protected tree species are present on the Project Site. Therefore, *no impact* would occur.

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

No Impact: The Project Site is not located within the boundaries of any adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, *no impact* would occur.

Mitigation Measures for impacts to Biological Resources:

Mitigation Measure BIO-1 (Construction Timing). If feasible, future construction activities shall take place entirely outside of the avian nesting season, defined as February 1 to August 31.

Mitigation Measure BIO-2 (Preconstruction Surveys). If construction must occur between February 1 and August 31, a qualified biologist shall conduct surveys for active bird nests within 7 days prior to the start of work during this period. The survey area shall encompass the Project Site and accessible surrounding lands within a quarter mile for nesting Swainson's hawks, 500 feet for other nesting raptors, and 250 feet for nesting birds.

Mitigation Measure BIO-3 (Avoidance of Active Nests). Should any active nests be discovered in or near proposed construction zones, the biologist shall identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

V. CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☑	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☑	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☑	☐	☐

The following analysis is based on the Cultural Resources Technical Memorandum prepared for the Project by Taylored Archaeology in February 2024. The Technical Memorandum is available in Appendix D of this report.

Environmental Setting

The history of European settlement in the Tulare County area focused primarily on farming and ranching. European settlement did not occur until the arrival into southern California of land-based expeditions originating from Spanish Mexico starting in the 1760s. European-American settlement of this region began in 1851 with the building of Fort Miller on the San Joaquin River. Unfortunately, hostility grew between American settlers and Native inhabitants, which initially prevented widespread settlement of the area. By the 1860s, the arrival of waves of additional European-American settlers subjugated and removed the Native inhabitants, and the European-American settlers began to inhabit more regions.

In April 1852, Tulare County was created, with the county seat initially located at Woodsville. In 1853 the county seat was removed to Fort Visalia, located in the area bounded by Oak, Center, Garden and Bridge streets. In 1872, the Southern Pacific Railroad founded the City of Tulare by beginning construction of the railroad within Tulare County, connecting the San Joaquin Valley with markets in the north and east. During this time, valley residents constructed a series of water conveyance systems (canals, dams, and ditches) across the valley. Ample water supplies and assured rail transport were particularly important for the new colonies making their living off fruit, grain, and dairy farming.

A Cultural Resources Records Search was conducted by Taylored Archaeology in February 2025 for the Fernandes Subdivision Project in Tulare County, California. The search included a

half-mile radius around the Project area. Two previous cultural resources reports were identified within the Project area, neither of which overlapped with the Project boundary. Additionally, seven reports were identified within a half-mile radius, with 5 resulting in positive findings that identified historic-period resources, of these, 4 were located over 0.25 miles outside the Project boundary with one being 80 feet south of the project (Segment of Tulare Irrigation Canal).

The search found no previously recorded cultural resources within the Project site itself. Furthermore, a Sacred Lands File search conducted by the Native American Heritage Commission revealed negative results for sensitive or sacred tribal cultural resources in the project area. A full account of the records search findings can be found in Appendix D. As part of the process of identifying tribal cultural resources in or near the Project Site, the City sent a letter via certified mail on February 13th, 2025, to the Santa Rosa Rancheria Tachi Yokut Tribe inviting the tribe to consult with the City regarding this Project. The 30-day response window closed on March 13th, 2025. No response or request for consultation was received.

Regulatory Setting

This report defines "cultural resources" as prehistoric or historical archaeological Sites and historical objects, buildings, or structures. Following 36 Code of Federal Regulations (CFR) §60.4, "historical" in this report applies to cultural resources at least 50 years old. The significance or importance of a cultural resource is dependent upon whether the resource qualifies for inclusion at the local level in a local register of historical resources, at the state level in the California Register of Historical Resources (CRHR), or the Federal level in the National Register of Historic Places (NRHP). Cultural resources that are determined to be eligible for inclusion in the CRHR are called "historical resources" (California Code of Regulations [CCR] 15064.5[a]). Under this statute, the determination of eligibility is partially based on the consideration of the criteria of significance as defined in 14 CCR 15064.5(a)(3). Cultural resources eligible for the NRHP are deemed "historic properties."

National Historic Preservation Act

The National Historic Preservation Act was adopted in 1966 to preserve historical and archeological Sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Environmental Quality Act

Under CEQA, a historical resource is a resource listed in, or determined to be eligible for listing in, the CRHR. Historical resources may include, but are not limited to, "any object, building, structure, Site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC §5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted per the state guidelines is also considered a historic resource under California Public Resources Code (PRC) Section 5020.1.

CEQA details appropriate measures for the evaluation and protection of cultural resources in §15064.5 of the CEQA Guidelines. According to CEQA guidelines §15064.5 (a)(3), the criteria for listing on the CRHR includes the following:

1. *Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.*
2. *Is associated with the lives of persons important in our past.*
3. *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.*
4. *Has yielded, or may be likely to yield, information important in prehistory or history.*

According to CEQA guidelines §21074 (a)(1), criteria for tribal cultural resources includes the following:

Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

1. *Included or determined to be eligible for inclusion in the California Register of Historical Resources.*
2. *Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.*

Protection of cultural resources within California is additionally regulated by PRC §5097.5, which prohibits the destruction, defacing, or removal of any historic or prehistoric cultural features on land under the jurisdiction of State or local authorities.

Health and Safety Code, Section 7050.5

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC). CEQA Guidelines (Public Resources Code Section 5097) specify the procedures to be followed when discovering human remains on non-Federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

City of Tulare General Plan

The General Plan includes the following goals, objectives, and policies that are potentially applicable to the proposed Project:

- LU-P13.15 Architectural Heritage. The City shall encourage expressions of its cultural and historic heritage in key central area architectural and other physical design elements (such as murals and/or community art), as well as through encouragement of related cultural events and celebrations.

Goal COS-5 To manage and protect sites of cultural and archaeological importance for the benefit of present and future generations.

- COS-P5.1 Archaeological Resources. The City shall support efforts to protect and/or recover archaeological resources.
- COS-P5.2 Evaluation of Historic Resources. The City shall use appropriate State and Federal standards in evaluating the significance of historical resources that are identified in the city.
- COS-P5.3 Historic Preservation. The City shall encourage the preservation of historic residences and neighborhoods wherever appropriate.
- COS-P5.4 Historic Buildings. The City shall encourage the preservation and adaptive use of historic buildings, particularly in the downtown.
- COS-P5.5 Historic Structures and Sites. The City shall support public and private efforts to preserve, rehabilitate, and continue the use of historic structures, sites, and districts. Where applicable, preservation efforts shall conform to the current Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Building.
- COS-P5.6 Protection of Resources with Potential State or Federal Designations. The City shall encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values.
- COS-P5.7 State Historic Building Code. The City shall utilize the State Historic Building Code for designated properties.
- COS-P5.8 Design Compatibility with Historic Structures. The City shall ensure design compatibility of new development within close proximity to designated historic structures and neighborhoods.
- COS-P5.9 Discovery of Archaeological Resources. In the event that archaeological/ paleontological resources are discovered during site excavation, grading, or construction, the City shall require that work on the site be suspended within 100 feet of the resource until the significance of the features can be determined by a qualified archaeologist/ paleontologist. If significant resources are determined to exist, an archaeologist shall make recommendations for protection or recovery of the resource. City staff shall consider such recommendations and implement them where they are feasible in light of project design as previously approved by the City.
- COS-P5.10 Discovery of Human Remains. Consistent with Section 7050.5 of the California Health and Safety Code and CEQA Guidelines (Section 15064.5), if human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). If any human remains are discovered or recognized in any location on

the project site, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- The Tulare County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required; an
- If the remains are of Native American origin,
  - The descendants of the deceased Native Americans have made a timely recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98.
  - The Native American Heritage Commission was unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified by the commission, or
  - The landowner or his or her authorized representative rejects any timely recommendations of the descendent, and mediation conducted by the Native American Heritage Commission has failed to provide measures acceptable to the landowner.

- COS-P5.11 Impact Mitigation. If preservation of cultural/historical resources is not feasible, the City shall make every effort to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.
- COS-P5.12 Mitigation Monitoring for Historical Resources. The City shall develop standards for monitoring mitigation measures established for the protection of historical resources prior to development.
- COS-P5.13 Alteration of Sites with Identified Cultural Resources. When planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. The City shall permit development in these areas only after a site-specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource.
- COS-P5.14 Education Program Support. The City shall support local, state, and national education programs on cultural and archaeological resources.
- COS-P5.15 Solicit Input from Local Native Americans. The City shall solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance.
- COS-P5.16 Confidentiality of Archaeological Sites. The City shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect resources that are determined to exist. An archaeologist/paleontologist shall make recommendations for protection or recovery of the resource. City staff shall consider such recommendations and implement them where they are feasible in light of project design as previously approved by the City.

- COS-P5.17 Cooperation of Property Owners. The City shall encourage the cooperation of property owners to treat cultural resources as assets rather than liabilities, and encourage public support for the preservation of these resources.
- COS-P5.18 Archaeological Resource Surveys. Prior to project approval, the City shall require project applicant to have a qualified archaeologist conduct the following activities: (1) conduct a record search at the Regional Archaeological Information Center located at California State University Bakersfield and other appropriate historical repositories, (2) conduct field surveys where appropriate, and (3) prepare technical reports, where appropriate, meeting California Office of Historic Preservation Standards (Archaeological Resource Management Reports).

Discussion

a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Less Than Significant Impact: A Cultural Resources Records Search was conducted by Taylored Archaeology in February 2025 for the Fernandes Subdivision Project. The search revealed two reports within the Project area: Report #TU-00041, which was an archaeological literature review for a proposed pipeline corridor along State Route 99, and Report #TU-01190, a historical narrative book unrelated to the Project area. Additionally, seven studies were identified within a 0.5-mile radius of the Project boundary, including archaeological surveys and historical architectural field studies. However, none of these studies overlapped the Project Site.

No cultural resources were recorded within the Project boundary. However, five historic-era resources were identified within a 0.5-mile radius of the Project Site. These include a segment of Highway 99 (P-54-005297), which is eligible for listing in the NRHP and CRHR, and a segment of the Tulare Irrigation Canal (P-54-005296), which is eligible for listing in the CRHR. The remaining three resources were either not evaluated or determined ineligible. None of these resources are adjacent to or overlap with the Project Site, and the Project will not impact them.

No historical resources were identified within the Project Site, and the implementation of the Project would not impact historical resources. Therefore, impacts regarding historical resources would be less than significant.

b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant Impact with Mitigation Incorporated: There are no known archaeological resources located within the Project Site area. While past agricultural activities may have potentially destroyed or obscured ground surface evidence of archaeological

resources within the Project boundary, intact archaeological resources related to prior occupation of the area may potentially exist below the ground surface. As such, there exists the potential, albeit unlikely, for inadvertent discovery of a previously unknown archaeological resource at the Project Site during construction activities. Mitigation Measure CUL-1 is required to ensure inadvertent discovery of a resource does not result in a significant impact. Therefore, impacts would be *less than significant with mitigation incorporated.*

c) Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact with Mitigation Incorporated: There are no known human remains buried in the Project vicinity, nor has the Project Site been used as a cemetery. However, albeit unlikely, if human remains are unearthed during development, Mitigation Measure CUL-2 is required to ensure impacts are not significant. Therefore, impacts would be *less than significant with mitigation incorporated*.

Mitigation Measures for Impacts on Cultural Resources

Mitigation Measure CUL-1: If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (NPS 1983) shall be contacted immediately to evaluate the find. If the discovery proves to be an important resource under CEQA, additional work such as data recovery excavation and Native American consultation shall be completed to mitigate any adverse effects.

Mitigation Measure CUL-2: If human remains are uncovered during construction, the Tulare County Coroner shall be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 5097.98 require that the coroner notify the Native American Heritage Commission within 24 hours of discovery. The Native American Heritage Commission will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the treatment and disposition of the remains. The Most Likely Descendent shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

VI. ENERGY

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

The following analysis is based on the Air Quality, Greenhouse Gas, and Energy Assessment available in Appendix A to this report.

Environmental Setting

Electricity

According to the U.S. Energy Information Administration, California used approximately 255,224 gigawatt hours of electricity in 2018 (EIA 2024a). By sector in 2017, commercial uses utilized 46% of the state's electricity, followed by 35% for residential uses and 19% for industrial uses (EIA 2024a). Electricity usage in California for different land uses varies substantially by the types of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA 2024b).

Southern California Edison (SCE) provides electricity to the Project. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across central and Southern California. SCE receives electric power from a variety of sources. According to the 2022 SCE Power Content Label, renewable energy accounts for 33.2% of the overall energy resources, with geothermal resources at 5.7%, wind power at 9.8%, eligible hydroelectric sources at 0.5% and solar energy at 17% (SCE 2022).

Natural Gas

According to the U.S. Energy Information Administration, California used approximately 2,154,030 million cubic feet of natural gas in 2019 (EIA 2024a). Natural gas is used for cooking, space heating, generating electricity, and as an alternative transportation fuel. The majority of

California's natural gas customers are residential and small commercial customers (core customers), which accounted for approximately 35% of the natural gas delivered by California utilities in 2018 (CPUC n.d.). Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 65% of the natural gas delivered by California utilities (CPUC n.d.). The CPUC regulates California natural gas rates and natural gas services, including in-state transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. Biogas (e.g., from wastewater treatment facilities or dairy farms) is just beginning to be delivered into the gas utility pipeline systems, and the state has been encouraging its development (CPUC n.d.). In 2019, PG&E delivered approximately 4.9 billion therms of natural gas to the region, with 3 billion therms for non-residential use and 1.9 billion therms for residential use (CEC 2020a, 2020b). No natural gas usage is proposed during the operational phase of the Fernandes Subdivision development.

Petroleum

According to the U.S. Energy Information Administration, California used approximately 681 million barrels of petroleum in 2018, with the majority (584 million barrels) used for the transportation sector (EIA 2024b). This total annual consumption equates to a daily use of approximately 1.9 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 78.4 million gallons of petroleum per day, adding up to an annual consumption of 28.7 billion gallons of petroleum. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described below. As such, the CEC anticipates an overall decrease of gasoline demand in the state over the next decade (CEC 2018).

Regulatory Setting

Federal

Federal Energy Policy and Conservation Act: In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). In 2020, the Trump Administration sought to lower CAFE standards issued by the Obama Administration to require, for example, a fleet average of 40 mpg by 2026 instead of 55 mpg by 2025. On April 1, 2022, the Department of Transportation updated CAFE standard back up near Obama Administration levels, with a new fleet average of 49 mpg by 2026. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Energy Independence and Security Act of 2007: On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased corporate average fuel economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and lighting efficiency standards (Sections 301–325)
- Building energy efficiency (Sections 411–441)

The RFS requires ever-increasing levels of renewable fuels to replace petroleum (EPA 2024). The U.S. Environmental Protection Agency (EPA) is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the Energy Policy Act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several keyways that laid the foundation for achieving significant reductions of greenhouse gas (GHG) emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of our nation's renewable fuels sector. The updated program (RFS2) includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel and set separate volume requirements for each one.
- EISA required the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

State

Warren–Alquist Act: The California Legislature passed the Warren–Alquist Act in 1974, which created the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan: The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure the provision of adequate, reliable, and reasonably priced electrical power and natural gas supplies; it also identified cost-effective and environmentally sound energy policies, strategies, and actions for California's consumers and taxpayers. In 2005, the CEC and CPUC adopted a second Energy Action Plan to reflect various policy changes and actions of the prior 2 years. At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an "update" that examines the state's ongoing actions in the context of global climate change.

Assembly Bill 32 (2006) and Senate Bill 32 (2016): In 2006, the State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted Senate Bill (SB) 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, the California Air Resources Board (CARB) prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focus on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources.

California Building Standards: Part 6 of Title 24 of the California Code of Regulations (CCR) was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and nonresidential buildings

constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The current Title 24, Part 6 standards, referred to as the 2019 Title 24 Building Energy Efficiency Standards, became effective on January 1, 2020. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards use approximately 53% less energy than those under the 2016 standards (CEC 2019). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2019). Title 24 also includes Part 11, the California Green Building Standards (CALGreen). CALGreen establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, electric vehicle charging stations, shade trees, water conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, and excavated soil and land clearing debris (24 CCR Part 11).

Local

City of Tulare General Plan: The 2030 General Plan includes the following policies related to energy use and efficiency in the Air Quality and Greenhouse Gases Element and the Circulation Element:

- T-P-41 - Integrate the bicycle transportation system into new development and infill redevelopment. Development shall provide short term bicycle parking and long-term bicycle storage facilities, such as bicycle racks, stocks, and rental bicycle lockers. Development also shall provide safe and convenient bicycle and pedestrian access to high activity land uses such as schools, parks, shopping, employment, and entertainment centers.
- T-P-53 - Develop flexible parking requirements in the zoning ordinance for development proposals based on “best practices” and the proven potential to reduce parking demand.
- AQ-P-12 - Support the implementation of Voluntary Emissions Reduction Agreements (VERA) with the San Joaquin Valley Air Pollution Control District (the District) for individual development projects that may exceed District significance thresholds.
- AQ-P-16 - Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of

transportation, require energy conservation in new construction, and energy management in public buildings, in compliance with AB 32.

Thresholds and Methodology

The impact analysis provided in this section is based on the application of the following California Environmental Quality Act (CEQA) Guidelines Appendix G, which indicates that a Project would have a significant impact on energy use if it would:

1. *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?*

2. *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The methodology applied to assess the Project's potential impacts involved the use of the California Emissions Estimator Model (CalEEMod) Version 2022.1.1 (CAPCOA 2022) that can be found in Appendix A. For the construction phase, energy use would be attributed to worker trips and operation of construction equipment. Diesel and gasoline would be utilized to fuel on and off-road construction equipment during this phase of the Project. Energy use associated with the operational phase would result from residential vehicle trips (mobile sources) and activities in homes that consume energy in the form of electricity. No natural gas will be utilized by the proposed residential buildings, so all building activities would utilize electricity. To account for this, emissions were calculated by factoring in the increased demand for electricity because of no natural gas being utilized. Although electricity generation produces criteria pollutants and GHGs, these are emitted offsite at fossil fuel power plants and these pollutants are not attributed to individual buildings or electricity users. The power plants responsible for electricity generation are existing stationary sources permitted by air districts and/or the USEPA, criteria pollutant emissions are generally associated with the power plants themselves. These criteria pollutant emissions are subject to local, state and federal control measures. (CAPCOA 2022)

Unlike criteria pollutants, GHG emissions at these offsite power plants are not subject to the same stationary source permitting requirements and it is difficult to mitigate GHG emissions associated with them. Therefore, the most effective way to control GHGs from power plants is to reduce electricity demand by electricity users, which can be mitigated through building efficiency measures. As a result, the CalEEMod program calculates GHG emissions (not criteria pollutant emissions) from regional power plants associated with building electricity use. To reduce GHG emissions and energy usage, the Project would comply with the provisions of Part 6 of the Title 24 California Code of Regulations, which is the Building Energy Efficiency Standards (Energy Code). The California Energy Commission implements Title 24, Part 6 to increase the energy efficiency of newly constructed residential buildings. The latest Energy Code is for 2023, which was the 2022 Energy Code (CAPCOA 2022).

When calculating energy use associated with mobile sources and residential buildings, CalEEMod defaults were used for vehicle trips lengths, vehicle trip counts, and electricity consumption. Natural gas emission factors were set to zero to account for the absence of direct natural gas consumption on the Project site. In order to calculate energy consumption from mobile sources in MBTUs, 2023 gasoline/diesel miles per gallon (MPG) factors provided by the EMFAC2017 Emissions Inventory were used. To simplify the estimation process for the construction phase, it was assumed that all worker vehicles used gasoline as fuel source and all vendor vehicles used diesel as a fuel source. Project-specific construction equipment was entered using data modeled from previous, completed construction projects. Energy Calculations for both construction and operational phases are provided in Appendix A.

Discussion

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 proposed Project includes the construction and operation of 120 units of single-family residential housing and a park with a stormwater retention basin. During Project construction, there would be an increase in energy consumption related to worker trips and the operation of construction equipment. This increase in energy use would be temporary and limited to the greatest extent feasible through compliance with local, state, and federal regulations. Vehicle fuel consumption during Project construction was estimated based on the assumed construction schedule, vehicle trip lengths, and the number of workers per construction phase as provided by CalEEMod Version 2022.1.1, and Year 2024 gasoline/diesel MPG factors provided by EMFAC2017. Detailed energy calculations are provided in Appendix A. To simplify the estimation process, it was assumed that all worker vehicles used gasoline as a fuel source and all off-road equipment, hauling vehicles, and vendor vehicles used diesel as a fuel source. Table 3-9, below, provides gasoline and diesel fuel used by off-road and on-road vehicles/construction equipment during each phase of Project construction.

Off-Road Equipment Fuel (Diesel)		On-Road Vehicle Fuel				Total MMBTU
		Diesel		Gasoline		
Gallons	MMBTU	Gallons	MMBTU	Gallons	MMBTU	
25,861	3,595	3,437	478	5,481	636	4,709
					Total Construction Energy Use	4,709
					Average Annual Construction Energy Use	1,471

Table 3-9. On & Off-Road Mobile Fuel Use Generated by Construction Activities, Sources: CalEEMod (v.2022.1.1); EMFAC2017 (See Appendix A)

Construction of the proposed Project would result in additional energy consumption. The Project would be entirely reliant on electricity, rather than natural gas for all operational components (in-home appliances). The California Energy Commission is responsible for the

development and enforcement of specific strategies to create energy efficient buildings for new residential development. These strategies are implemented through Title 24, Part 6 of the California Building Code, which requires developers to include certain measures (including solar panels on all new residential buildings) to achieve required building efficiency standards.

Mobile Fuel Use	**Gal/Year**		**MMBTU**
	Gasoline	112,785	13,566
	Diesel	13,122	1,803
Electricity Use	**kWh/Year**		**Total MMBTU**
	1,386,288		4,730
Total Annual Operational Energy Use			**Total MMBTU**
			20,099

Table 3-10. On-Road Mobile Fuel Use and Electricity Use Generated by Operational Activities; Sources: CalEEMod (v. 2022.1.1); EMFAC2021 (See Appendix A)

As shown in Table 3-10, annual energy use associated with Project operations would total approximately 20,099 MMBTUs per year. Annual energy use is expected to decrease over time as a result of improvements in vehicle fuel efficiency standards. The proposed Project would be subject to energy conservation requirements in the California Energy Code (24 CCR Part 6, California's Energy Efficiency Standards for Residential and Nonresidential Buildings) and the California Green Building Standards Code (CALGreen) (24 CCR Part 11). Adherence to Title 24 requirements would ensure that the Project would not result in wasteful or inefficient use of energy resources due to building operation or vehicle trips. Additionally, the operational component of the Project will not utilize natural gas directly and will rely entirely on electricity.

Because construction-related energy use would be temporary and limited to the greatest extent feasible through consistency with Federal, State, and local policies related to energy conservation, and operation of the Project would comply with all energy efficiency standards required under Title 24, Part 6, and these standards were specifically developed to achieve net zero energy for residential Projects, it can be presumed that the Project would not result in inefficient, unnecessary, or wasteful energy use. The impact is *less than significant.*

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

No Impact: The proposed Project would not conflict with or obstruct any state or local plans for renewable energy or energy efficiency. The construction and operation of the Project would comply with applicable energy efficiency regulations included in CALGreen, Title 24, CARB, and the Tulare General Plan. The proposed Project would comply with all state and local policies related to energy efficiency and therefore, *no impact* would occur.

VII. GEOLOGY AND SOILS

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

Environmental Setting

Geologic Stability and Seismic Activity

- **Seismicity:** Tulare County is a low to moderate earthquake hazard area. The San Andreas Fault is the longest and most significant fault zone in California and is approximately 40 miles west of the Tulare County Boundary. Owens Valley fault zone is the only active fault located within Tulare County. Section 5 of the 2017 Tulare Multi-Jurisdictional Local Hazard Mitigation Plan identifies the Project Site as likely to experience low to moderate shaking from earthquakes and may experience higher levels if an earthquake were to occur in or near the County. Ground shaking can result in other geological impacts, including liquefaction, landslides, lateral spreading, subsidence, or collapse.
- **Liquefaction**: Liquefaction is a phenomenon whereby unconsolidated and/or near-saturated soils lose cohesion and are converted to a fluid state because of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil, which can result in landslides and lateral spreading. No specific countywide assessment of liquefaction has been performed; however, the 2017 Tulare Multi-Jurisdictional Local Hazard Mitigation Plan identifies the risk of liquefaction within the County as low because the soil types in the area either too coarse or too high in clay content to be suitable for liquefaction.
- **Landslides**: Landslides refer to a wide variety of processes that result in the downward and outward movement of soil, rock, and vegetation under gravitational influence. Landslides can be caused by both natural and human-induced changes in slope stability and often accompany other natural hazard events, such as floods, wildfire, or earthquake. Eastern portions of the County are at a higher risk of landslides where steep slopes are present. However, most of the County, including the proposed Project Site, is at low risk of landslides and mudslides because of its flat topography. The 2017 Tulare Multi-Jurisdictional Local Hazard Mitigation Plan states that occurrence of landslide events within populated areas of Tulare County is unlikely.
- **Subsidence**: Land Subsidence refers to the vertical sinking of land as a result of either manmade or natural underground voids. Subsidence has occurred throughout the Central Valley at differing rates since the 1920's as a result of groundwater, oil, and gas withdrawal. During drought years, Tulare County is prone to accelerated subsidence, with some areas sinking up to 28 feet. Although western portions of the County show signs of deep and shallow subsidence, the majority of the County, including the proposed project site, is not considered to be at risk of subsidence related hazards.

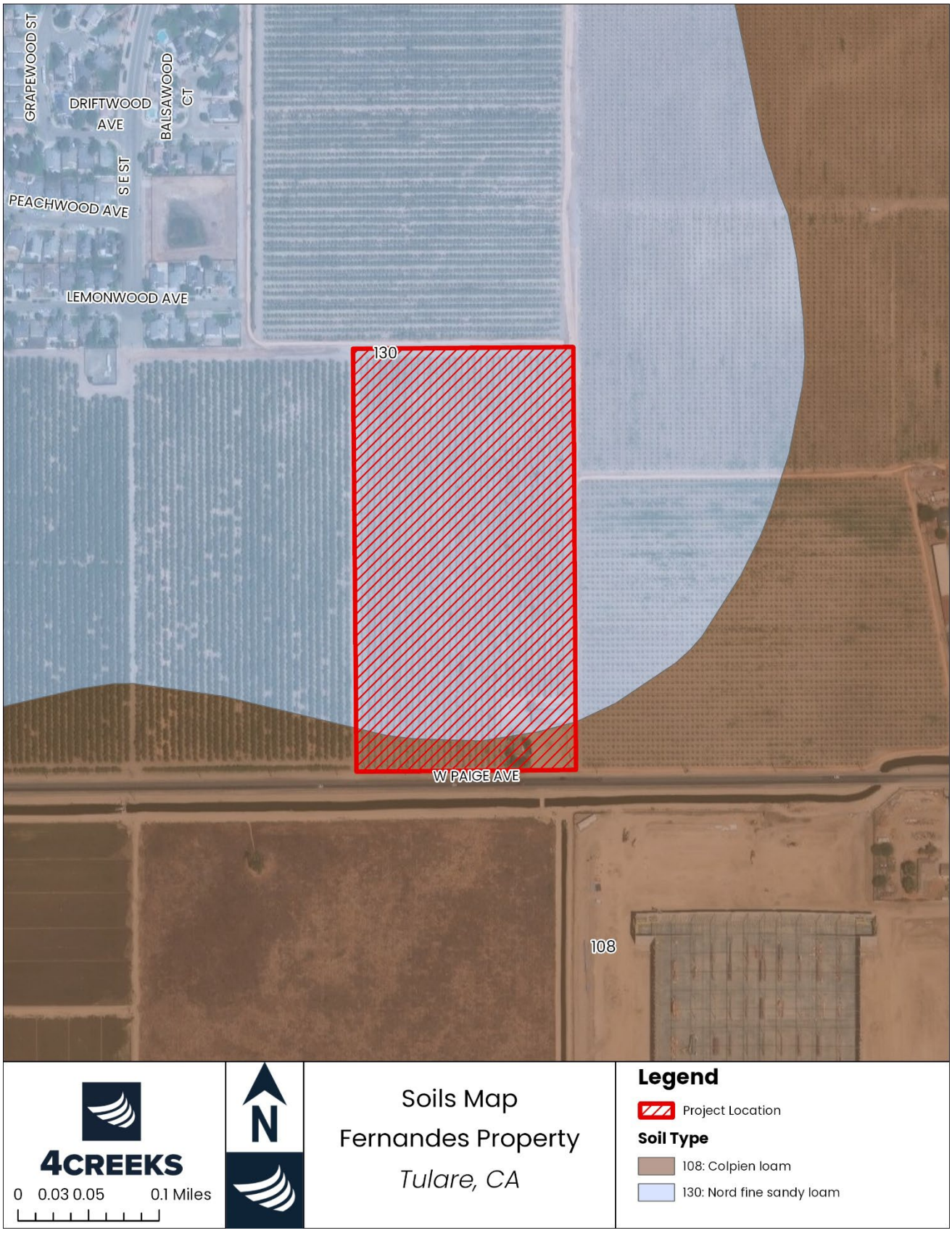


Figure 3-5: Soils Map

Soils Involved in the Project: The proposed Project Site contains two soil types, according to the US Department of Agriculture (USDA) Web Soil Survey. The properties of the soil are described briefly below, as defined by the USDA:

- **Nord fine sandy loam, 0 to 2 percent slopes:** The Nord series consists of very deep, well drained soils formed primarily from granitic and sedimentary rocks. The Nord series is a member of a coarse-loamy, mixed, superactive, thermic cumulic Haploxerolls taxonomic class and are found in flood plains and alluvial fans.
- **Colpien loam, 0 to 2 percent slopes:** The Colpien series consists of very deep, well-drained soils that are formed from mixed alluvium derived primarily from granitic and sedimentary rock sources. The Colpien series belongs to the fine-loamy, mixed, superactive, thermic Typic Haploxerolls taxonomic class and is typically found on alluvial plains and low terraces.

Regulatory Setting

California Building Code: The California Building Code contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. CBC provisions provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures and certain equipment.

City of Tulare General Plan: The Safety Element of the City of Tulare General Plan includes the following goals and policies regarding soils and geology.

- SAF-P1.4 Building and Codes. Except as otherwise allowed by State law, the City shall ensure that all new buildings intended for human habitation are designed in compliance with the latest edition of the California Building Code, California Fire Code, and other adopted standards based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault).
- SAF-P1.7 Site Investigations. The City shall require applicants to conduct site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, and/or flooding.

Goal SAF-4 To protect people and property from seismic and geotechnical hazards.

- SAF-P4.4 Alquist-Priolo Act Compliance. The City shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones (pursuant to and as determined by the Alquist-Priolo Earthquake Fault Zoning Act; Public Resources Code, Chapter 7.5) unless the specific provisions of the Act and Title 14 of the California Code of Regulations have been satisfied.
- SAF-P4.5 Subsidence. The City shall confirm that development is not located in any known areas of active subsidence. If urban development may be located in such an area, a special safety study will be prepared and needed safety measures implemented.

Discussion

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

No Impact: According to the Tulare County Multi-Hazard Mitigation Plan, no active faults underlay the Project Site. Although the Project is in an area of relatively low seismic activity, the Project could be affected by ground shaking from nearby faults. The potential for strong seismic ground shaking on the Project Site is not a significant environmental concern due to the infrequent seismic activity of the area and distance to the faults. The Project has no potential to cause the rupture of an earthquake fault indirectly or directly. Therefore, *no impact* would occur.

ii.Strong seismic ground shaking?

Less Than Significant Impact: According to the Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan, the Project Site is in an area of relatively low seismic activity. The proposed Project does not include any activities or components which could feasibly cause strong seismic ground shaking, either directly or indirectly. Therefore, the impacts would be *less than significant.*

iii.Seismic-related ground failure, including liquefaction?

Less Than Significant Impact: No specific countywide assessment of liquefaction has been performed; however, the Tulare County Multi-Hazard Mitigation Plan identifies the risk of liquefaction within the county as low because the soil type on the Project Site is unsuitable for liquefaction. According to state soils maps, the Project Site consists mostly of Nord fine Sandy Loam and Colpien loam which do not contain soils suitable for liquefaction. Therefore, the impacts would be *less than significant.*

iv.Landslides?

No Impact: The proposed Project Site is generally flat and there are no hill slopes in the area. As a result, there is no potential for landslides. No geologic landforms exist on or near the Project Site that could result in a landslide event. Therefore, *no impact* would occur.

b) Would the Project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact: Because the Project Site is relatively flat, the potential for erosion is low. However, construction-related activities and increased impermeable surfaces can increase the probability for erosion to occur. Construction-related impacts related to erosion would be temporary and subject to best management practices (BMPs) required by the Stormwater Pollution Prevention Plan (SWPPP), which are developed to prevent significant impacts related to erosion from construction. The Project would direct its stormwater runoff into the proposed on-site basin. Because impacts related to erosion would be temporary and limited to construction, and given the required SWPPP BMPs would prevent significant impacts related to erosion, the impact would be *less than significant.*

c) Would the Project 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 addressed in response to questions a) and b) above, the Project Site is not situated in an area susceptible to landslides, liquefaction, or other geological hazards. Lateral spreading, induced by liquefaction, occurs when seismic ground shaking causes slopes with saturated soils to liquefy and flow toward the open slope face. However, the Project Site is predominantly flat and lacks significant slopes, negating this concern. Ground subsidence generally occurs when overdrafts from a groundwater basin diminish the upward hydraulic pressure that supports the land surface above, leading to the consolidation or settlement of the underlying soils. Extensive areas of the San Joaquin Valley, including the Project Site, have undergone subsidence due to groundwater usage. The Tulare General Plan indicates minimal risk of liquefaction and subsidence within the county. Additionally, geological hazards would be accounted for through the implementation of seismic standards outlined by the California Building Code. Therefore, the impacts would be *less than significant*.

d) Would the Project 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?

No Impact: The Project Site is not in an area with expansive soils, as expansive soils occur only in the county's western and southern portions. Because the soils associated with the Project do not exhibit shrink-swell behavior, implementation of the Project would not pose a risk to life or property caused by expansive soils. Therefore, *no impact* would occur.

e) Would the Project 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 does not propose to use septic tanks or alternative wastewater disposal systems. The Project would connect to the City's existing wastewater conveyance network. Therefore, *no impact* would occur.

f) Would the Project directly or indirectly destroy a unique paleontological resource or Site or unique geologic feature?

Less Than Significant Impact with Mitigation Incorporated: No unique geologic features or known paleontological resources are located within the Project area. However, Mitigation Measure GEO-1 is required in the event of inadvertent discovery of a paleontological resource ensure potential impacts are not significant. Therefore, impacts would be *less than significant with mitigation incorporated*.

Mitigation Measure for Impacts on Geology and Soils

Mitigation Measure GEO-1: If a suspected unique paleontological resource were to be discovered during construction of the Project, the following protocol shall be implemented:

- The City of Tulare shall be notified of the discovery. Work shall cease around the find until a qualified paleontologist meeting the Society of Vertebrate Paleontology standards has evaluated the find in accordance with federal, state, and local guidelines. The applicant shall choose a qualified paleontologist subject to the approval of the City. If the find is determined to be a unique resource, such measures may include avoidance, preservation in place, data recovery and associated documentation, or other appropriate measures. Construction activity may continue unimpeded in other portions of the Project Site. The City shall determine the appropriate and feasible measure(s) that will be necessary to mitigate impacts, in consideration of the measure(s) recommended by the paleontologist. Construction in the affected area shall re-commence with the approval of the City.

VIII. GREENHOUSE GAS EMISSIONS

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	☐	☐	☑	☐
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

The following analysis is based on the Air Quality, Greenhouse Gas, and Energy Assessment available in Appendix A to this report.

Environmental Setting

Climate Change is a change in the average weather of the earth that may be measured by alterations in wind patterns, storms, precipitation, and temperatures. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level a statistical significance, specifically focusing on temperature records from the last 150 years, the Industrial Age, which differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHG needed to stabilize global temperatures and climate change impacts. The IPCC predicted that global mean temperatures change from 1990 to 2100, given six scenarios, could range from 1.1 degree Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007). In California, climate change may result in consequences such as the following form (CCCC 2006 and Moser et al. 2009).

1. A reduction in the quality and supply of water to the State from the Sierra snowpack.
2. Increased risk of large wildfires.
3. Reduction in the quality and quantity of certain agriculture products.
4. Exacerbation of air quality problems.
5. A rise in sea levels resulting in the displacement of coastal businesses and residences.
6. Damage to marine ecosystems and their natural environment.
7. An increase in infections, disease, asthma, and other health-related problems.

8. A decrease in the health and productivity of California's forest. (CCCC 2006 and Moser et al. 2009)

Greenhouse Gases (GHG) are gases that trap heat in the atmosphere and the presence of GHGs in the atmosphere affects the earth's temperature. The effect is equivalent to the way a greenhouse retains heat. Natural processes and human activities emit greenhouse gases. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons, hydro chlorofluorocarbons, hydro fluorocarbons, per fluorocarbons, sulfur, and hexafluoride. Human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. Some greenhouse gases can remain in the atmosphere for over hundreds of years. Some GHGs have a greater impact on climate change than others. In order to accurately compare GHG emissions, a Global Warming Potential (GWP) has been calculated for each greenhouse gas based on how long it remains in the atmosphere, on average, and how strongly it absorbs energy. Gases with a higher GWP absorb more energy, per pound, than gases with a lower GWP, and thus contribute more to global warming. For example, one pound of methane is equivalent to twenty-one pounds of carbon dioxide.

In regard to the quantity of these gases in the atmosphere, we first must establish the amount of particular gas in the air, known as Concentration, or abundance, which are measured in parts per million, parts per billion and even parts per trillion. To put this measurement in more relatable terms, one part per million is equivalent to one drop of water diluted into about thirteen gallons of water, roughly a full tank of gas in a compact car. Therefore, it can be assumed larger emission of greenhouse gases lead to a higher concentration in the atmosphere. GHGs as defined by AB 32 include the following gases: carbon dioxide, methane, nitrous oxide, hydrocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs as defined by AB 32 and sources are summarized in Table 3-11.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Methane (CH4)	Is a flammable gas and is the main component of natural gas	12 years	21	Emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Carbon dioxide (CO_2)	An odorless, colorless, natural greenhouse gas.	30-95 years	1	Enters the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
Chloro-fluorocarbons	Gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are non-toxic nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).	55-140 years	3,800 to 8,100	Were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone.
Hydrofluoro-carbons	A man-made greenhouse gas. It was developed to replace ozone-depleting gases found in a variety of appliances. Composed of a group of greenhouse gases containing carbon, chlorine an at least one hydrogen atom.	14 years	140 to 11,700	Powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Nitrous oxide (N2O)	Commonly known as laughing gas, is a chemical compound with the formula N2O. It is an oxide of nitrogen. At room temperature, it is a colorless, non-flammable gas, with a slightly sweet odor and taste. It is used in surgery and dentistry for its anesthetic and analgesic effects.	120 years	310	Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
Pre-fluorocarbons	Has a stable molecular structure and only breaks down by ultraviolet rays about 60 kilometers above Earth's surface.	50,000 years	6,500 to 9,200	Two main sources of pre-fluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	An inorganic, odorless, colorless, and nontoxic nonflammable gas.	3,200 years	23,900	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing and as a tracer gas.

Table 3-11. Greenhouse Gases; Source: EPA, Intergovernmental Panel on Climate Change

Each of the designated gases described above can reside in the atmosphere for different amounts of time, ranging from a few years to thousands of years. All of these gases remain in the atmosphere long enough to become well mixed, meaning that the amount that is measured in the atmosphere is roughly the same all over the world regardless of the source of the emission.

Regulatory Setting

Climate changes is a global, national, state, and local issue involving greenhouse gas emissions from all around the world; therefore, countries around the world, including the United States, have established regulations to assist in the emissions of GHGs. Tables 3-12 through 3-14 give a brief explanation of international, national, state, and local regulations.

Regulation	Adopted	Protocol
Intergovernmental Panel on Climate Change	1998	The United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economical information relevant to understanding the scientific basis of risk of human-induced climate change and its potential impacts.

Regulation	Adopted	Protocol
United Nations Framework Convention on Climate Change	March 21, 1994	Governments gather and share information on GHG emissions, national polices and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts.
Kyoto Protocol	Adopted: December 1, 1997 Entered into Force: February 16, 2005	Sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at an average of 5% against 1990 levels over the five-year period of 2008-2012
Paris Climate Agreement	Adopted: December 12, 2015 Entered into Force: November 4 2016	The Paris Climate Agreement is an agreement within the United UNFCCC to limit global temperature rise to 2 degrees Celsius above preindustrial levels. Under the agreement, each country determines, plans, and regularly reports its own contribution to mitigate global warming. The agreement is voluntary and is not legally binding.

Table 3-12. International Greenhouse Gas Regulations

Regulation	Adopted	Protocol
Greenhouse Gas Endangerment	December 7, 2009	The EPA Administrator signed two distinct findings regarding GHG emissions under section 2029(a) of the Clean Air Act. 1. Endangerment Finding: The Administrator finds that the current and Projected concentrations of the six key well-mixed greenhouse gases — carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) 2. Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.
Corporate Average Fuel Economy (CAFE)	Adopted: 1975 Revised: July 29, 2011	An agreement between thirteen large automakers (accounting for 90% of all vehicles sold in the United States), the United Auto Workers, and the State of California to increase fuel economy to 54.5 miles per gallon for cars and light-duty trucks by model year 2025.
Greenhouse Gas Reporting Program	September 22, 2009	Requires reporting of GHG emissions from large sources and suppliers in the United States. Any facility that emits 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.
New Source Review	May 13, 2013	Tailors the requirements of the Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits.
Standards of Performance for	March 27, 2012	The EPA proposed new performance standards for emissions of carbon dioxide for new affected fossil fuel-fired

Regulation	Adopted	Protocol
GHG Emissions for New Stationary Sources: Electrical Utility Generating Units		electrical utility generated units. New sources greater than 25 megawatts would be required to meet an output-based standard of 1,000 pound of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology
Western Climate Initiative Partner	Yet to be formally adopted	Jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Its cap-and-trade program is estimated to be fully implemented by 2012

Table 3-13. Federal Greenhouse Gas Regulations

Regulation	Adopted	Protocol
Title 24	Adopted: 1978 2008 Standards Effective: January 1, 2010	California's Energy Efficiency Standards for Residential and Non-Residential Buildings. Their standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods
California Green Building Standards	January 12, 2010	A comprehensive and uniform regulatory code for all residential, commercial and K-14 school buildings.
Pavley Regulations, AB 1493	July 22, 2002	Reduce GHG emissions in new passenger vehicles from 2009 through 2016. These amendments are part of California's commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. ARB's September amendments will cement California's enforcement of the Pavley rule starting in 2009 while providing vehicle manufacturers with new compliance flexibility.
Low Carbon Fuel Standard-Executive Order S-01-07	January 18, 2007	Calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. It instructed the California Environmental Protection Agency to develop and propose a draft compliance schedule to meet the 2020 target.
SB 1368	2006	The law limits long-term investments in base load generation by the state's utilities to power plants that meet an emissions performance standard (EPS).
SB 97	February 16, 2010	The Natural Resources Agency adopted Amendments to the CEQA Guidelines for greenhouse gas emissions.
AB 32	2006	Set the 2020 greenhouse gas emissions reduction goal into law. It directed the California Air Resources Board to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011.

Regulation	Adopted	Protocol
SB 375	August 30, 2008	Enhances California's ability to reach its AB 32 goals by promoting good planning with the goal of more sustainable communities. Sustainable Communities requires ARB to develop regional greenhouse gas emission reduction targets for passenger vehicles. ARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations
Executive Order S-13-08	2009	A comprehensive "Climate Adaptation Strategy" that would identify the state's vulnerabilities and plan accordingly. State agencies will take this report into account, due in December 2010, when planning new infrastructure such as roads, bridges, and water treatment facilities. The executive order noted that the country's longest continuously operating sea level gauge, San Francisco Bay's Fort Point, recorded a seven-inch rise in sea level over the 20th century.
SB 1078, SB 107, and Executive Order S-14-08	September 12, 2002	Requires California to generate 20% of its electricity from renewable energy by 2017. SB 107 then changes the 2017 deadline to 2010. Executive Order S-14-08 required that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020.
CEQA Guidelines Update	Adopted: April 13, 2009 Updated: May 2011	These Thresholds are designed to establish the level at which the District believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on the Air District's website and included in the Air District's updated CEQA Guidelines
Executive Order B-30-15	April 20, 2015	Establishes a California GHG reduction target of 40 percent below 1990 levels by 2030.
AB 398	July 17, 2017	Extended the California Cap and Trade program through 2030.

Table 3-14. State Greenhouse Gas Regulations

Regulation	Adopted	Protocol
San Joaquin Valley Air Pollution Control District		The San Joaquin Valley Air Pollution Control District is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern. The Valley Air District is governed by a Governing Board consisting of representatives from the Board of Supervisors of all eight counties, one Health and Science member, one Physician, and five Valley city representatives.
SJVAPCD CEQA Greenhouse Gas Guidance	December 2009	The SJVAPCD approach is intended to streamline the process of determining if Project specific GHG emissions would have a significant effect. Best Performance Standards would be established according to performance-based determinations.

Regulation	Adopted	Protocol
San Joaquin Valley Carbon Exchange	November 2008	Intended to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley
Rule 2301	January 19, 2012	Emission Reduction Credit Banking. Provided an administrative mechanism for sources to bank GHG emissions, mechanism for sources to transfer GHG reductions to other users and defines eligibility standards, quantitative and procedures.

Table 3-15. Regional Greenhouse Gas Regulations

3.4 Thresholds and Methodology

The impact analysis provided in this section is based on the application of the following California Environmental Quality Act (CEQA) Guidelines Appendix G, which indicates that a project would have a significant impact on greenhouse gas emissions if it would:

1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.*
2. *Conflict with an applicable plan, policy or regulations adopted for the purpose of reducing the emissions of greenhouse gas emissions.*

GHG emissions and climate change were evaluated in accordance with Appendix G of the 2024 CEQA Guidelines. CEQA Guidelines Section 15064.4 states that, when making a determination with respect to the significance of a project's GHG emissions, a lead agency shall have discretion to determine whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use; and/or (2) Rely on a qualitative analysis or performance-based standards. Section 15064.4 also states that a lead agency should consider the following factors when assessing the significance of the impact of GHG emissions on the environment: (1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting; (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

GHG emissions were calculated in the same CalEEMod model used to determine the proposed project's criteria air pollutant emissions. Consistent with SJVAPCD recommendations, construction emissions were amortized over a thirty-year period and added to the annual operational emissions to determine the proposed Project's annual GHG emissions. Consistent with CEQA Guidelines Section 15064(h)(3), project significance was determined based on the proposed Project's consistency with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the proposed Project. CARB's 2017 Scoping Plan applies to the proposed Project and are intended to reduce GHG emissions to meet the statewide targets set in Senate

Bill (SB) 32. The project efficiency threshold of 6.7 MT CO2e.yr/capita was derived from the CARB Scoping Plan and used to determine the Project's potential impact on greenhouse gas emissions. Thus, the proposed Project would not have a significant effect on the environment if it were found to be consistent with CARB's 2017 Scoping Plan efficiency metric.

a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact:

Construction. Greenhouse gases would be generated during construction from activities including site preparation, grading, building construction, application of architectural coatings, and paving. The CalEEMod Emissions report predicts that this Project will create a maximum of 288 MT of CO2e emissions per year during construction. Because the SJVAPCD does not have numeric thresholds for assessing the significance of construction related GHG emissions, predicted emissions from Project construction were compared to SJVAPCD thresholds for construction related GHG emissions. The SJVAPCD currently has a threshold of 10,000 metric tons of CO2e per year for construction emissions amortized over a 30-year Project lifetime. Because Project construction would generate less GHG emissions than this threshold, impacts related to GHG emissions during Project construction would be less than significant.

Operation. The proposed Project would have the following operational greenhouse gas emissions:

- CO2: 1,330 metric tons per year
- CH4: 1.32 metric tons per year
- N2O: 0.07 metric tons per year
- CO2e: 1,385 metric tons per year (combined CO2, CH4, and N2O emissions w/ some margin of error due to rounding differences and addition of Global Warming Potential)

The SJVAPCD has not formally provided guidance on how to analyze GHG emissions impacts for projects within their San Joaquin Valley Air Basin (SJVAB). Until such time as SJVAPCD provides formal guidance, the following alternative metrics used by air districts in California to assess GHG emissions impacts have been identified:

Bright-Line Numeric Threshold: The bright-line significance threshold is a numeric, mass emissions threshold. In general, the bright-line threshold identifies the point at which additional analysis of project-related GHG emissions impacts is necessary. Projects below the established bright-line significance criteria have a de minimis contribution to the local, regional, and/or statewide GHG emissions inventory and have less than significant

impacts. Projects above this threshold may result in a substantial increase in GHG emissions.

The bright-line threshold is based on the methodology identified in the 2016 AEP white paper (Walter et al., 2016). It is a market capture approach, reflecting the number of emissions that 90 percent of development projects surveyed in four cities within California would generate. CAPCOA identified that a bright-line threshold set at 900 metric tons of CO2e per year would capture 90 percent of projects. In general, 900 metric tons of CO2e per year corresponds to (1) a residential development of 50 dwelling units; (2) 35,000 square feet of office space; (3) 11,000 square feet of retail space; and (4) 6,300 square feet of supermarket space. The 900 metric tons of CO2e per year is used as it is the most conservative bright line threshold. Exceeding the bright-line significance criterion does not necessarily indicate that the project generates a significant unavoidable impact. Consistent with how the bright-line threshold is applied in other air districts, this analysis utilizes the bright-line thresholds as a screening criterion to identify whether a full analysis of GHG emissions is warranted. If the project exceeds the screening threshold, the second level of analysis will compare the project to the efficiency metric discussed below.

Efficiency-Based Threshold for Residential Projects: The efficiency metric identified by some air districts in California in the absence of a county-wide GHG reduction plan is derived from CARB's Scoping Plan. Residential projects that are over the bright line threshold would not be considered significant if their overall GHG efficiency is less than 6.7 MT CO2e/yr/capita. However, it is noted that this threshold is based, in part, on the GHG reducing target established for the year 2020 under AB 32, but the Project would be implemented after the year 2020. Statewide goals for GHG reductions in the years beyond 2020 were codified into state law with the passage of SB 32, which as described previously mandates that California achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. This equates to 40 percent below the statewide GHG reduction target for the year 2020. Therefore, a 40% reduction would be: 6.7 MT CO2e/yr/capita x 60% = 4.02 MT CO2e/yr/capita.

For this Project: The average household size in the City of Tulare is 3.32 persons (US Census Bureau 2024). The Project consists of up to 120 units, leading to an estimated population of:

120 units × 3.32 persons/household = 399 people

Using the efficiency-based threshold, the allowable emissions for this residential Project would be:

399 people × 4.02 MT CO2.yr/capita = 1604 metric tons of CO2e per year.

The total operational GHG emissions amount to 1,385 metric tons of CO2e per year. Since the Project's emissions are below the efficiency-based threshold for residential projects (1,604 metric tons of CO2e per year), the Project's operational GHG emissions are considered *less than significant.*

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

Less than Significant Impact: The Project will be consistent with all applicable plans, policies, and regulations, particularly the Climate Action Plan, which is included as part of the City of Tulare General Plan. Table 3-16 below demonstrates the consistency of the Project with all the applicable policies and goals of the City of Tulare General Plan & Climate Action Plan.

CAP Policies	Project Consistency
Energy Systems	
Energy Efficiency in New Development: Increase energy efficiency in new commercial and residential development and require new residential and commercial development to achieve enhanced energy efficiency and exceed California Energy Code requirements by 15%.	Consistent. The proposed Project will not utilize natural gas during its operational phase. Additionally, this Project plans to adhere to all energy conservation codes by implementing passive heating and cooling opportunities in subdivision design.
Renewable Energy For Residents: Increase reliance on local renewable energy sources through provision of a minimum of 15% of baseline residential energy needs from on-site renewable energy sources by 2030.	Consistent. The Project buildings would be designed with solar panels and would be compliant with Title 24 requirements for building efficiency.
Waste & Resource Conservation	
Reduce Water Usage and Energy consumed for groundwater pumping: Amend the City's Building Code and other codes appropriate to require water efficiency standards in new residential and nonresidential development as established by mandatory and Tier 1 CALGreen measures.	Consistent. The proposed low-density residential development will comply with the Water Conservation Ordinance of the City of Tulare as to not waste water and conserve energy used to pump groundwater for community use. Additionally, landscaping on the site will comply with the City of Tulare's Water Efficient Landscape Ordinance (CHAPTER 10.196: LANDSCAPING).

Table 3-16. Consistency Analysis with the Tulare Climate Action Plan

The Project would not generate a cumulatively considerable GHG impact, nor would it conflict with any applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions. The impact is *less than significant.*

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☑	☐
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?	☐	☐	☑	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
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 or excessive noise to the public or the environment?	☐	☐	☐	☑
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?	☐	☐	☑	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g) Expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☑

The following analysis is partially based on the findings of the Phase I Environmental Site Assessment prepared for the Project by Paul Humphrey, EP, dated February 2025, which is available in Appendix E to this report; and the findings of the Phase II Limited Site Assessment

prepared for the Project by Krazan & Associates, dated March 2025, which is available in Appendix F to this report.

Environmental Setting

The proposed Project Site is approximately 0.74 miles southeast of the nearest school, Countryside High School. It is approximately 2 miles northwest of the nearest public airport, Mefford Field Airport. The nearest private airport, SCE San Joaquin Heliport, is located .87 miles to the east.

The Department of Toxic Substances Control's (DTSC's) EnviroStor was used to identify any sites associated with the release of hazardous materials or wastes within the Project area. This research confirmed that the Project Site and the surrounding area are not hazardous.

Regulatory Setting

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S. Code [U.S.C.] §9601 et seq.). The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or the Superfund Act) authorizes the President to respond to releases or threatened releases of hazardous substances into the environment.

Occupational Safety and Health Administration. The Occupational Safety and Health Administration (OSHA) sets and enforces Occupational Safety and Health Standards to ensure safe working conditions. OSHA provides training, outreach, education, and compliance assistance to promote safe workplaces. The proposed Project would be subject to OSHA requirements during construction and maintenance.

Toxic Substances Control Act of 1976 (15 U.S.C. §2601 et seq.). The Toxic Substance Control Act was enacted by Congress in 1976 and authorized the EPA to regulate any chemical substances determined to cause an unreasonable risk to public health or the environment.

Hazardous Waste Control Law, Title 26. The Hazardous Waste Control Law creates hazardous waste management program requirements. The law is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which contains requirements for the following aspects of hazardous waste management:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

California Code of Regulations, Title 22, Chapter 11. Title 22 of the California Code of Regulations contains regulations for identifying and classifying hazardous waste. The CCR defines waste as hazardous if it has the following characteristics: ignitability, corrosivity, reactivity, and/or toxicity.

California Emergency Services Act. The California Emergency Services Act created a multi-agency emergency response plan for California. The Act coordinates various agencies, including CalEPA, Caltrans, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

Hazardous Materials Release Response Plans and Inventory Law of 1985. Pursuant to the Hazardous Materials Release Response Plans and Inventory Law of 1985, local agencies are required to develop "area plans" for response to releases of hazardous materials and wastes. Tulare County maintains a Hazardous Material Incident Response Plan to coordinate emergency response agencies for incidents and requires the submittal of business plans by persons who handle hazardous materials.

City of Tulare General Plan: The City of Tulare General Plan includes the following goals and policies pertaining to hazards and hazardous materials:

- LU-P11.19 Recycling of Hazardous Materials. The City shall require the proper disposal and recycling of hazardous materials.

Goal SAF-1 To regulate future development to ensure the protection of public health and safety from hazards and hazardous materials and the adequate provision of emergency services.

Goal SAF-5 To protect people from the harmful effects of exposure to hazardous materials.

- SAF-P5.2 Hazardous Materials Studies. The City shall ensure that the proponents of new development projects address hazardous materials concerns through the preparation of Phase I or Phase II hazardous materials studies for each identified site as part of the design phase for each project. Recommendations required to satisfy federal or State cleanup standards outlined in the studies will be implemented as part of the construction phase for each project.
- SAF-P5.3 Transporting Hazardous Materials. The City shall strive to ensure hazardous materials are used, stored, transported, and disposed of in a safe manner, in compliance with local, State, and federal safety standards.



Figure 3-6: Distance to Schools and Airports

Discussion

a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact: Project construction activities may involve the use and transport of hazardous materials. The use of such materials would be considered minimal and would not require these materials to be stored in bulk form. The Project does not involve the use or storage of hazardous substances other than the insignificant amounts of pesticides, fertilizers, and cleaning agents required for normal maintenance of residences and residential landscaping. The Project must adhere to applicable zoning and fire regulations regarding the use and storage of any hazardous substances. Therefore, the proposed Project would have *less than significant* impacts to hazardous materials.

b) Would the Project 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 Project Site was historically and is currently used for agricultural purposes, and as such, there is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used on-site. Near surface soils (where residual agricultural chemical concentrations would have most likely been present, if at all) are likely generally mixed with fill material or disturbed during grading. Also, it is common that engineered fill material is placed over underlying soils as part of site development activities. These additional variables serve to further reduce the potential for exposure to residual agricultural chemicals (if any). ***Phase II analysis to be included once received.***

While the Project Site is near an existing residential area, construction and operation of the Project does not pose a reasonably foreseeable condition or incident that could result in significant release of hazardous materials into the environment. During construction, potential accidental releases of standard fuels, solvents, or chemicals typical of construction of a residential subdivision may occur. Should an accidental hazardous release occur, existing regulations for handling hazardous materials may require coordination with the City Fire Department or DTSC for an appropriate plan of action, which can include studies or testing to determine the nature and extent of contamination, as well as handling and proper disposal. Given the nature of the Project, the operation of the Project does not pose 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. Therefore, potential impacts would be *less than significant.*

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

No Impact: Project operations will not emit hazardous emissions or handle hazardous materials, substances, or wastes, and the Project is not within one-quarter mile of an existing or proposed school. Since the Project would not emit hazardous emissions or involve handling acutely hazardous materials or waste and is not within one-quarter mile of an existing or proposed school, there would be *no impact.*

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

No Impact: The Project Site is not listed as a hazardous materials site under Government Code Section 65962.5, nor is the Project Site identified in DTSC's EnviroStor or SWRCB's GeoTracker hazardous databases. Therefore, *no impact* would occur.

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?

Less Than Significant Impact: The proposed Project is located two miles from the Mefford Field Airport, and .87 miles from the private SCE heliport, but is not located within an airport land use plan. Implementation of the proposed Project would not result in a safety hazard or excessive noise for people residing or working in the Project area. There is a Less than Significant Impact.

f) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact: The City's site plan review procedures ensure compliance with emergency response and evacuation plans. In addition, the site plan would be reviewed by the Fire Department per standard City procedure to ensure consistency with emergency response and evacuation needs. Therefore, there would be *No Impact* to any adopted emergency response plan or evacuation plan.

g) Would the Project expose people or structures, either directly or indirectly, to significant risk of loss, injury or death involving wildland fires?

No Impact: The Project Site is located within an agricultural and residential area of the City, which is not considered a wildland fire risk zone. The surrounding land is characterized by agricultural and developed urban areas with low wildland fire hazard potential. Therefore, the Project would not expose people or structures to significant risks from wildland fires, and *no impact* would occur.

X.HYDROLOGY AND WATER QUALITY

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

Environmental Setting

Hydrologic System: The proposed Project Site is in the Tulare Lake Hydrologic Region, which encompasses 10.9 million acres south of the San Joaquin River. Specifically, the Site is situated within the San Joaquin Valley Groundwater Basin, which is divided into seven sub-basins. The Site falls within the Kaweah Subbasin, bordered by the Kings Groundwater Subbasin to the north, the Tule Groundwater Subbasin to the south, the Tulare Lake Subbasin to the west, and

the Sierra Nevada foothills' crystalline bedrock to the east. The area predominantly consists of lands within the Kaweah Delta Water Conservation District. The major rivers in this subbasin are the St. Johns and lower Kaweah Rivers, with the Kaweah River serving as the primary surface water source for groundwater recharge.

Groundwater: The City of Tulare operates 23 active wells, a 125,000-gallon water storage tower, two 2-million-gallon concrete storage tanks, one 1.5-million-gallon concrete storage tank, 7 well sites equipped with granulated activated carbon (GAC) treatment filters, 277 miles of water transmission and distribution mains, and over 2,500 fire hydrants. The City's water supply is sourced from deep groundwater wells distributed throughout the city, which are connected to an integrated water system. Additionally, the City of Tulare, City of Visalia, and the Tulare Irrigation District have formed a Joint Power Authority (JPA) to establish the Mid-Kaweah Groundwater Sustainability Agency (GSA). Under this JPA, the Board of Directors is responsible for developing, adopting, and implementing a Groundwater Sustainability Plan, as mandated by the Sustainable Groundwater Management Act of 2014.

Surface Waters: The City of Tulare does not use surface water for its potable water supply. However, it purchases surface water from the Tulare Irrigation District for groundwater recharge purposes.

Stormwater Drainage: The Project includes a stormwater retention pond. The stormwater pond will be located in the northeast corner of the project site.

Regulatory Setting

Clean Water Act: The Clean Water Act (CWA) is enforced by the U.S. EPA and was developed in 1972 to regulate discharges of pollutants into the waters of the United States. The Act made it unlawful to discharge any pollutant from a point source into navigable waters unless a National Pollution Discharge Elimination System (NPDES) Permit is obtained.

National Flood Insurance Act: The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

California Water Quality Porter-Cologne Act: California's primary statute leading water quality and water pollution concerns with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the nine Regional Water Quality Boards (RWQCB) power to protect water quality and further develop the Clean Water

Act within California. The applicable RWQCB for the proposed Project is the Central Valley RWQCB.

Central Valley RWQCB: The proposed Project is within the jurisdiction of the Central Valley Regional RWQCB. The Central Valley RWQCB requires a NPDES Permit and Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the project is greater than one acre, a NPDES Permit and SWPPP will be required.

City of Tulare General Plan: The City of Tulare General Plan contains the following goals and policies related to water resources:

- LU-P11.3 System Expansion. The City shall require new development be responsible for expansion of existing facilities such as water systems, sewer systems, storm drainage systems, parks and other capital facilities made necessary to serve the new development.
- LU-P11.4 Water Supply System. The City shall require that water supply systems be adequate to serve the size and configuration of land developments. Standards as set forth in the subdivision ordinance shall be maintained and improved as necessary.
- LU-P11.5 Water Supply for New Development. For all new development, prior to the approval of any subdivision applications, the developers shall assure that there is sufficient available water supply to meet projected buildout.
- LU-P11.6 Adequate System Maintenance. The City shall require maintenance funding for streets, storm drainage, and ponding basins for new development.
- LU-P11.7 Adequate Infrastructure Capacity. The City shall only approve new development when it can be demonstrated by the applicant that adequate system capacity in the service area is or will be available to handle increases related to the project.
- LU-P11.9 Adequate City Service Capacity. The City shall only approve new development when it can be demonstrated by the applicant that adequate public service capacity in the area is or will be available to handle increases related to the project. School capacity will be discussed in the review of each development, and the City will ensure early coordination with the school districts serving the site. School capacity will be addressed as allowed under State law.
- LU-P11.17 Fair Share Improvements. The City shall ensure new development is required to participate on a fair-share basis in the completion of improvements to the existing sewer system, and/or the construction of new sewer trunk lines as described in the City's adopted Sewer Master Plan.
- COS-P1.1 Regional Groundwater Protection. The City shall work with Tulare County and special districts to help protect groundwater resources from overdraft by promoting water conservation and groundwater recharge efforts.
- COS-P1.8 Water Conservation. The City shall promote efficient water use and reduced water demand by:
    - Requiring water-conserving design and equipment in new construction.

    - Encouraging water-conserving landscaping and other conservation measures; and
    - Encourage retrofitting existing development with water conserving devices.
    - Providing public education programs.
    - Distributing outdoor lawn watering guidelines.
    - Promoting water audit and leak detection programs.
    - Enforcing water conservation programs.
- COS-P1.11 Water for Irrigation. Whenever possible, the City shall require new development to use recycled or non-potable water for irrigation in landscaped areas.

Discussion

a) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact with Mitigation Incorporated: Construction would involve excavation, grading, and other earthwork across most of the 19.58-acre Project Site. During storm events, exposed construction areas on the Project Site may cause runoff to carry pollutants such as chemicals, oils, sediment, and debris. Additionally, potential soil erosion and the size of the Project Site necessitates the implementation of a SWPPP for the Project. The SWPPP identifies all potential pollution sources that could affect stormwater discharges from the Project Site and specifies BMPs for stormwater runoff. Chemicals or surfactants used during Project maintenance or operations may also discharge into the environment, potentially affecting water quality standards.

Moreover, the Project would implement Mitigation Measures HYD-1 and HYD-2, which require steps to minimize impacts on water quality during construction. Mitigation Measure HYD-1, before any construction or grading begins, the Applicant must submit a NOI for discharge from the Project Site to the California SWRCB Storm Water Permit Unit. A copy of this NOI must also be submitted to the City before the issuance of grading permits, with the City reviewing the documentation and conducting site inspections during construction to ensure compliance. Mitigation Measure HYD-2 requires the building contractor to prepare and submit a SWPPP to the City for approval at least 45 days before construction starts. The contractor is responsible for understanding and adhering to the State General Permit and implementing the SWPPP, which outlines potential pollutant sources and specifies BMPs to control site discharges. These BMPs include dust control, monitoring for erosion and sedimentation control, use of detention basins and erosion control materials, covering soil stockpiles and graded slopes during inactivity or extreme weather, and strictly preventing spills and pollutant discharges through proper material storage, trash disposal, and site management. Therefore, impacts would be less *than significant with mitigation incorporated.*

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

Less Than Significant Impact: Water services for the Project would be provided by the City of Tulare upon development. The City's water supply consists of 23 wells extracting water from an underground aquifer. According to the City's 2020 Urban Water Management Plan (UWMP), the projected water supply is 6,255 million gallons (MG) in 2025, 6,421 MG in 2030, and 6,910 MG in 2035. As of 2020, current water usage stands at 5,519 MG, averaging approximately 10,500 gallons per minute daily.

The City's Water System Master Plan indicates that single-family residential uses consume about 2,400 gallons per day per acre. Since the Project would be developed for single-family residential use, the 19.58-acre Site is expected to use approximately 46,992 gallons per day, equating to around 17.15 MG (61.23 Acre-Feet) annually. This addition will have a minimal effect on the projected water usage, increasing the total to 6,272.15 MG in 2025 (a 0.27% increase), 6,438.15 MG in 2030 (a 0.27% increase), and 6,927.15 MG in 2035 (a 0.25% increase). These increases indicate a negligible impact on the City's overall water supply projections.

The Project would result in reduced percolation to the groundwater basin compared to the existing undeveloped, pervious Project Site due to increased paved and impervious surfaces that would result from the Project. However, all stormwaters would be directed to an on-site basin where the stormwater would be able to be utilized in groundwater recharge programs.

The Project Site is currently utilized as a pistachio farm. According to the University of California Agriculture and Natural Resources (UCANR), pistachio trees require approximately 3 acre-feet of water per year per acre. Therefore, the existing 19.58-acre pistachio farm uses approximately 58.74 acre-feet of water annually. In comparison, the planned Project is projected to use 17.15 million gallons (MG) of water per year, equivalent to approximately 61.23 acre-feet annually, which represents a slight increase of 2.49 acre-feet compared to the current water usage. Additionally, future water use for the Project will be subject to the basin's implementation of the Sustainable Groundwater Management Act (SGMA), which will ensure responsible groundwater usage. The proposed development aligns with the underlying General Plan land use designation for the Project Site. It has been factored into the 2020 Urban Water Management Plan (UWMP) and its growth forecasts, including water demand and supply assessments. Therefore, the Project's impact on water resources are expected to be *less than significant*.

c) Would the Project substantially alter the existing drainage pattern of the Site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:

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

Less Than Significant Impact: The proposed Project involves the construction and operation of 120 low-density residential units on approximately 19.58 gross acres. While building these units may alter drainage patterns, it is not expected to result in substantial erosion or siltation on or off the Site. A SWPPP will be implemented during Project construction. SWPPPs include mandated erosion control measures designed to prevent significant impacts related to erosion caused by runoff during construction. Therefore, through regulatory compliance, the Project's impact 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: Because the Project would result in an increase of impervious surfaces within the Project Site, an increase in surface runoff may occur. However, all stormwater runoffs will be routed and contained in an onsite basin. The applicant will be required to provide appropriate stormwater management measures, ensuring that there will not be substantial flooding on or off the Site. Therefore, through regulatory compliance, the Project will have a *less than significant* impact.

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 with Mitigation Incorporated: The proposed Project includes the construction and operation of 120 single-family residential homes on a 19.58-acre Site, featuring a stormwater retention park/pond. New impervious surfaces, such as roads and driveways, will collect automobile-derived pollutants like oils, greases, rubber, and heavy metals. During storms, these pollutants can be transported into drainage systems through surface runoff. Due to the increase in population and impervious surfaces within the Site, there will be a rise in pollutants in surface runoff, potentially leading to an increase in point source and non-point source pollution from the development. However, the Project, being a residential development, is not expected to cause substantial degradation of water quality.

Even so, to further mitigate potential water quality impacts, the Project will implement Mitigation Measure HYD-3, which requires the preparation of a Development Maintenance Manual. This manual will include comprehensive procedures for the maintenance and operation of stormwater facilities to ensure the long-term effectiveness of post-construction stormwater controls. The Project would also be required to comply with the City's Storm Water Management Plan (SWMP), Engineering Standards, General Plan, and City ordinance requirements. Therefore, through regulatory compliance and Mitigation Measure HYD-3, impacts would be *less than significant with mitigation incorporated*.

iv. Impede or redirect flood flows?

No Impact: The Project Site is generally flat, so no significant grading or leveling will be required. The Site is not in proximity to any streams or rivers and will not alter the course of any such water bodies. According to the National Flood Hazard mapping by the Federal Emergency Management Agency, the Project Site is not located within a 100-year flood hazard area. Therefore, there would be *no impact* with regard to impeding or redirecting flood flows.

d) Would the Project, in flood hazard, tsunami, or seiche zones, risk the release of pollutants due to Project inundation?

No Impact: The Project is located inland and not near an ocean or large body of water; and as such, neither a tsunami nor seiche would affect the Project Site. According to the National Flood Hazard mapping by the Federal Emergency Management Agency, the Project Site is not located within a 100-year flood hazard area. Therefore, *no impact* would occur.

e) Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact: The Project would not conflict with or obstruct the implementation of any water quality control plan. The Project would be subject to the requirements of the NPDES Stormwater Program and would be required to comply with a SWPPP. The SWPPP would identify all potential sources of pollution that could affect stormwater discharges from the Project Site and specify BMPs to prevent significant impacts related to stormwater runoff. Moreover, the Project Site is within the jurisdiction of the Mid-Kaweah Groundwater Sustainability Agency (GSA). The Groundwater Sustainability Plan (GSP) was adopted by the Mid-Kaweah GSA in December 2019. The Project would not conflict with or obstruct the implementation of this GSP. Therefore, through regulatory compliance, the Project's impacts would be *less than significant*.

Mitigation Measures for Impacts on Hydrology and Water Quality

Mitigation Measure HYD-1: Prior to the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California State Water Resources Control Board's Storm Water Permit Unit and submit a copy of this NOI to the City. The City shall review the noticing documentation prior to approval of the grading permit and City monitoring staff shall inspect the Project Site during construction for compliance.

Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the City 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. A SWPPP for site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of

the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to stormwater and shall include specific Best Management Practices (BMPs) to control the discharge of material from the site. The following BMPs methods shall include, but would not be limited to:

- Dust control measures to ensure success of all on-site activities to control fugitive dust;
- A routine monitoring plan to ensure success of all on-site erosion and sedimentation control measures;
- Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sand bagging, and soil stabilizers shall be used;
- Soil stockpiles and graded slopes shal be covered after two weeks of inactivity and 24 hours prior to and during extreme weather conditions; and,
- BMPs shal be strictly followed to prevent spills and discharges of pollutants on-site, such as material storage, trash disposal, construction entrances, etc.

Mitigation Measure HYD-3: A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained in accordance with the manufacturer's maintenance conditions. The manual shall require that devices be cleaned prior to the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following:

- Runoff shall be directed away from trash and loading dock areas;
- Bins shall be lined or otherwise constructed to reduce leaking of liquid wastes;
- Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and,
- Impervious berms, trench catch basin, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills or wash down water to enter the drainage system.

XI. LAND USE AND PLANNING

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
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?	☐	☐	☐	☑

Environmental Setting

The Project Site is located in the northeastern corner of the City of Tulare. According to the 2035 City of Tulare General Plan, the Site is designated as Low Density Residential. The site was previously zoned R-1-5 however, the City's most recent Zoning Ordinance Update (2024) designates the project area as R-1-4 with a 4,000-square-foot minimum lot size. It proposes to subdivide the 19.58-acre Site for 120 single-family residential homes, including a stormwater retention park/pond and associated infrastructure improvements. This residential development will complement and provide street interconnectivity with the existing residential area to the west, helping to address the need for housing within the city and region.

Regulatory Setting

City of Tulare General Plan: The Project site is designated as Low Density Residential in the 2035 City of Tulare General Plan. Low Density Residential establishes areas for single-family residences in a suburban configuration. This designation typically has a density range of 3.1-7 DU/acre with a minimum lot size of 4,000 square feet.

The following goals and policies in the City of Tulare General Plan are applicable to the project site's residential land use designation:

Goal LU-3 To designate, protect, and provide land to ensure sufficient residential development capacity and variety to meet community needs and projected population growth.

- LU-P3.1 Neighborhood Housing Mix. The City shall encourage mixed use neighborhoods to have a variety of housing types and densities to help create an overall healthy, balanced community.
- LU-P3.4 Jobs-Housing Balance. The City shall consider the effects of city land use proposals and decisions on the Tulare County area and the efforts to maintain a regional jobs housing balance.

- LU-P3.5 Future Residential Development. The City shall direct future residential development to areas adjacent or in close proximity to existing and future neighborhoods and neighborhood commercial areas to further Tulare as a self-sufficient, full-service city.
- LU-P3.8 Incompatible Uses. The City shall protect existing residential neighborhoods from the encroachment of incompatible activities and land uses (i.e. traffic, noise, odors, or fumes) and environmental hazards (i.e. flood, soil instability).
- LU-P3.9 Planned Development. The City shall encourage the use of planned development provisions in residential developments to provide flexibility, to meet various socio-economic needs, and to address environmental and site design constraints.

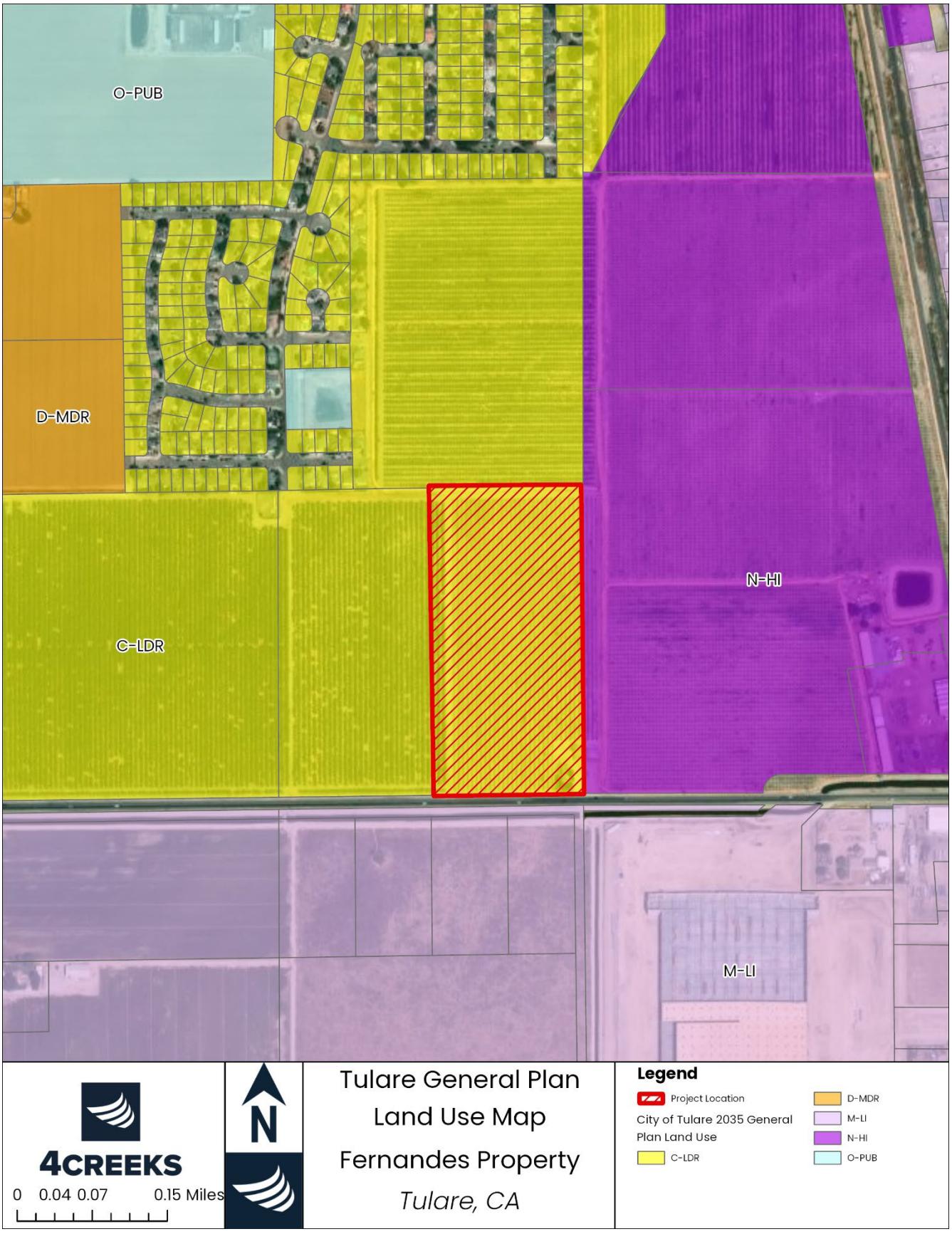


Figure 3-7: General Plan Land Use Map

Discussion

a) Would the Project physically divide an established community?

No Impact: The Project would not physically divide an established community. The Project Site is currently vacant and consists of agricultural land use, containing pistachio trees. The Project would complement the existing neighborhood to the west and provide interconnectivity with that neighborhood. Therefore, *no impact* would occur.

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

No Impact: The Project would construct 120 single family residential units within the approximately 19.58-acre Project area. As illustrated in Figure 3-7, the City of Tulare General Plan Update land use diagram designates the Project site as Low Density Residential. Additionally, the site was previously zoned R-1-5 however, the City's most recent Zoning Ordinance Update (2024) designates the project area as R-1-4 with a 4,000-square-foot minimum lot size. The Project will comply with all applicable General Plan policies, and subdivision and zoning regulations, thus the Project would not conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, the Project would have *no impact.*

XII. MINERAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
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 lands use plan?	☐	☐	☐	☑

Environmental Setting

There are no mineral resource zones in Tulare County and there is no mineral extraction occurring on or adjacent to the proposed Project site. Historical mines within the County include mineral deposits of tungsten, copper, gold, magnesium, and lead, however most of these mines are now closed leaving only 37 active mining operations. There are no active mining operations within the City of Tulare.

Regulatory Setting

California State Surface Mining and Reclamation Act: The California State Surface Mining and Reclamation Act was adopted in 1975 to regulate surface mining, prevent adverse environmental impacts, and preserve the state's mineral resources. The California Department of Conservation's Division of Mine Reclamation enforces the Act.

City of Tulare General Plan: The following mineral resource goals and policies in the Conservation and Open Space Element of the Tulare County General Plan are potentially applicable to the proposed Project:

Goal COS-8 To protect the current and future extraction of mineral resources that are important to the City's economy while minimizing impacts of this use on the public and the environment.

- COS-P8.3 Future Resource Development. Provide for the conservation of identified and/or potential mineral deposits within the UDB as areas for future resource development.
- COS-P8.5 Incompatible Development. Proposed incompatible land uses shall not be on lands containing, or adjacent to, identified mineral deposits or along key access roads,

unless adequate mitigation measures are adopted or a statement of overriding considerations stating public benefits and overriding reasons for permitting the proposed use are adopted.

- COS-P8.10 Resources Development. The City will promote the responsible development or identified and/or potential mineral deposits.

Discussion

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

No Impact: The Project Site has no known mineral resources that would be of value to the region and the state's residents. The Project Site is not designated as an important mineral resource recovery Site under the County's General Plan. Therefore, the proposed Project would not result in the loss or impede the mining of regionally or locally important mineral resources. There is *no impact.*

b) Would the Project result in the loss of availability of a locally – important mineral resource recovery Site delineated on a local general plan, specific plan or other lands use plan?

No Impact: No known mineral resources are important to the region, and the Project Site is not designated under the County's General Plan as an important mineral resource recovery Site. Therefore, the proposed Project would not result in the loss of availability of known regionally or locally important mineral resources. There is *no impact.*

XIII. NOISE

Would the Project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b) Generation of excessive ground-borne vibration or groundborne noise levels?	☐	☐	☑	☐
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 public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☑	☐

Environmental Setting

The predominant existing noise sources in the vicinity of the Project Site are vehicles on adjacent streets and equipment noise associated with agricultural operations. No commercial airports are located within two miles of the Project Site.

Noise is often described as an unwanted sound, while Sound is the variation in air pressure that the human ear can detect. If the pressure variations occur at least 20 times per second, they can be detected by the human ear. The number of pressure variations per second is called the frequency of sound. The frequency is expressed as cycles per second, called Hertz (Hz).

Ambient noise is the "background" noise of an environment. Ambient noise levels on the proposed Project Site are primarily due to agricultural activities and traffic. Construction activities usually result in an increase in sound above ambient noise levels.

Vibration is sound radiated through the ground. Vibration can result from a source (e.g., train operations, motor vehicles, machinery equipment, etc.), causing the adjacent ground to move, creating vibration waves that propagate through the soil to the foundations of nearby buildings. This effect is a ground-borne vibration.

Sensitive Receptors: Noise level allowances for different land types reflect the varying noise sensitivities associated with those uses. Residences, hotels/motels, hospitals, schools, and libraries are some of the most sensitive types of noise intrusion. Therefore, these have more stringent noise level allowances than most commercial or agricultural uses that are not subject to impacts such as sleep disturbance.

Regulatory Setting

City of Tulare General Plan: The Noise Element of the City of Tulare General Plan is responsible for establishing noise standards within the City and includes the following goals and policies related to noise that may be applicable to the Project.

Goal NOI-1 Protect the citizens of Tulare County from the harmful effects of exposure to excessive noise.

- NOI-P1.5 Construction Noise. Reduce noise associated with construction activities by requiring properly maintained mufflers on construction vehicles, requiring the placement of stationary construction equipment as far as possible from developed areas, and requiring temporary acoustical barriers/shielding to minimize construction noise impacts at adjacent receptors. Special attention should be paid to noise-sensitive receptors (including residential, hospital, school, and religious land uses).
- NOI-P1.6 Limiting Construction Activities. The City shall limit construction activities to the hours of 6 am to 10 pm, Monday through Saturday.
- NOI-P1.18 Construction-related Vibration. Evaluate individual projects that use vibration intensive construction activities, such as pile drivers, jack hammers, and vibratory rollers, near sensitive receptors for potential vibration impacts. If construction-related vibration is determined to be perceptible at vibration-sensitive uses, additional requirements, such as use of less vibration-intensive equipment or construction techniques, should be implemented during construction (e.g., drilled piles to eliminate use of vibration-intensive pile driver).

Discussion

a) Would the Project result in 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: Project construction is anticipated to last approximately 3 years (50 units built/year) and will involve temporary noise sources. The average noise levels generated by construction equipment that will be used in the proposed Project are shown below.

Type of Equipment	dBA at 50 feet
Air Compressors	81
Excavators	81
Concrete/Industrial Saws	76
Cranes	83
Forklifts	75
Generators	81
Pavers	89
Rollers	74
Dozers	85
Tractors	84
Loaders	85
Backhoes	80
Graders	85
Scrapers	89
Welders	74

Table 3-17. Noise levels of noise-generating construction equipment. Source: Federal Highway Administration Construction Noise Handbook.

The City of Tulare General Plan and Noise Ordinance do not specify noise thresholds for construction-related noise sources. However, the General Plan requires the implementation of noise reduction measures for all construction equipment and limits noise-generating activities to daytime hours from Monday through Saturday. The Project will comply with these regulations, and construction will only occur between 6:00 AM and 10:00 PM on those days.

Long-term noise levels resulting from the Project would include single-family homes, which are not normally associated with high operational noise levels.

Because noise generated from construction would be temporary, construction activities would comply with all measures established by the City to limit construction related noise impacts, and operational noise would be consistent with adjacent land uses, the impact is *less than significant.*

b) Would the Project result in generation of excessive ground-borne vibration or groundborne noise levels?

Less Than Significant Impact: According to the General Plan, projects that use vibration-intensive construction activities—such as pile drivers, jackhammers, and vibratory rollers—near sensitive receptors must be evaluated for potential vibration impacts. The Project would not utilize this type of equipment during construction, and as such, the Project would not generate excessive ground-borne vibration or ground-borne noise levels. Therefore, the impacts are considered to be *less than significant*.

c) For a Project located within the vicinity of a private airstrip or, an airport land use plan or, where such a plan has not been adopted, within two miles of 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 two miles from Mefford Field Airport; however, the Project Site is not within the airport land use plan for that airport nor is the Project Site within an elevated noise contour. As such, the Project would not expose people residing or working in the Project area to excessive noise levels. Therefore, impacts are considered to be *less than significant*.

XIV. POPULATION AND HOUSING

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☑	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☑	☐

Environmental Setting

The United States Census Bureau reported that the population of the City of Tulare, located in California's Central Valley, was 70,693 in 2022. This marks an increase from the 2010 census, which recorded a population of 59,275, representing a growth of approximately 19.3% over the 12-year period. Several factors have contributed to this population growth, including increased job availability in the agricultural and manufacturing sectors, expanded housing developments to accommodate new residents, and enhancements to the city's infrastructure capacity. Tulare's strategic location along major transportation routes like Highway 99 has also played a significant role in attracting both businesses and individuals to the area.

Regulatory Setting

The size of the population in the City of Tulare is controlled by the development code and Land Use Element of the General Plan. These documents regulate the number of dwelling units per acre allowed on various land uses and establish minimum and maximum lot sizes. These factors have a direct impact on the City's population size.

Discussion

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

Less Than Significant Impact: The Project proposes to construct 120 single-family residential dwelling units on 19.58 acres. According to the Census, the City's average household size is 3.52 persons. Based on this average household size, the anticipated population increase because of the Project is approximately 422.4 persons (120 units × 3.52 persons per unit). This increase would represent about a 0.6 percent population increase over existing conditions (70,693 persons in the City in 2022), which does not constitute a substantial increase in growth and population. Moreover, the Project Site is zoned and designated by the General Plan for single-family residential, and the Project is consistent with this underlying zoning and designation. As such, the Project represents planned growth in the area as part of the City's efforts to accommodate growth while discouraging fragmented, isolated development. The Project would be accessible from existing roadways as well as provide roadway interconnectivity with the existing single-family development to the west in a cohesive development pattern for the City. Therefore, impacts would be *less than significant*.

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

Less than significant: There Project Site is currently an agricultural land use and proposes to subdivide 19.58 acres for the construction and operation of 120 single-family residences. The Project would involve the removal of a single existing residence, however would not result in the displacement of a substantial number of people. Therefore, the impact is *less than significan*t.

XV. PUBLIC SERVICES

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

Environmental Setting

Fire: The Project Site is served by the City of Tulare Fire Department, which will continue to provide fire protection services upon development. The nearest fire station is Tulare City Fire Station 61, located approximately 1.40 miles northeast of the Project Site. With this proximity, the fire department can maintain efficient response times to the new residential development. The Project will adhere to all fire safety regulations, including the installation of fire hydrants and compliance with building codes, to ensure adequate fire protection for future residents.

Police: Law enforcement services are provided to the Project Site by the Tulare Police Department. The Tulare Police Department headquarters is located approximately 1.47 miles northeast of the Project Site. The department is committed to maintaining public safety and regularly adjusts patrol areas as needed. The Project would incorporate features such as adequate street lighting and secure neighborhood planning.

Schools: The Project Site is located within the Tulare City School District and Tulare Joint Union High School District. Tulare Union High School is approximately 1.67 miles northeast of the Project

Site. Roosevelt Elementary School is about 1.26 miles northwest, and Mulcahy Middle School is approximately 1.04 miles northwest.

Regulatory Setting

School Districts in the City of Tulare are regulated by the California Department of Education, and the Tulare Police Department is regulated by the California Department of Justice. Objectives and Policies relating to Law Enforcement, Fire Protection, Parkland, and School Facilities are included in the Land Use Element and Conservation and Open Space Element of the Tulare's General Plan. The Goals and Policies potentially applicable to the proposed project are as follows:

- COS-P4.1 Parkland/Open Space Standards: The City's goal is to provide 4 acres of developed parkland per 1,000 residents. New residential or mixed-use developments containing a residential component may be required to provide parkland, or pay in-lieu fees, in this ratio as directed by the City.
- LU-P11.3 System Expansion: The City shall require new development be responsible for expansion of existing facilities such as water systems, sewer systems, storm drainage systems, parks, and other capital facilities made necessary to serve the new development.
- LU-P11.9: Adequate City Service Capacity: The City shall only approve new development when it can be demonstrated by the applicant that adequate public service capacity in the area is or will be available to handle increases related to the project. School capacity will be discussed in the review of each development, and the City will ensure early coordination with the school districts serving the site. School capacity will be addressed as allowed under State law.
- LU-P11.26 Evaluate Fiscal Impacts: The City shall evaluate the fiscal impacts of new development and encourage a pattern of development that allows the City to provide and maintain a high level of urban services (including, but not limited to, water, sewer, transportation, fire stations, police stations, libraries, administrative, and parks), and community facilities and utility infrastructure, as well as attract targeted businesses and a stable labor force.

Discussion

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

i. Fire protection?

Less Than Significant Impact: The City of Tulare Fire Department will provide fire protection services to the proposed development. The closest fire station is Tulare City Fire Station 61, located approximately 1.40 miles north of the Project Site. The addition of 120 residential units will increase the demand for fire protection services. This increase in service demand will be compensated by the development through the payment of development impact fees. These fees are intended to address any potential deficits in fire protection services due to the new development.

The timing of when new fire service facilities would be required, or details about their size and location, cannot be determined until such facilities are planned and proposed. Any attempt to analyze impacts to a potential future facility would be speculative at this time. As new or expanded fire service facilities become necessary, construction or expansion projects would be subject to their own separate California Environmental Quality Act (CEQA) review to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant.*

ii. Police protection?

Less Than Significant Impact: The Tulare Police Department will provide services to the proposed development. The Tulare Police Department headquarters is located approximately 1.47 miles northeast of the Project Site. The addition of 120 residential units will increase the demand for police services. The Project would be required to pay a per-dwelling-unit development impact fee as per City Resolution Number 03-4988, which would help support and expand, when needed, police protection services due to new development.

The timing of when new police service facilities would be required, or details about their size and location, cannot be known until such facilities are planned and proposed, and any attempt to analyze impacts to a potential future facility would be speculative. As new or expanded police service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review to identify and mitigate any potential environmental impacts. Therefore, the impact is *less than significant.*

iii. Schools?

Less than Significant Impact: The Project is within the Tulare City School District and the Tulare Joint Union High School District. With the addition of 120 single-family residential units, the number of students in the school district is expected to increase. Based on the City's average household size of 3.52 persons, and assuming a standard student generation rate, this could lead to an increase in enrollment at local schools.

New development is required by state law to pay development impact fees to the school districts at the time of building permit issuance. These impact fees are used by the school districts to maintain existing facilities and develop new ones as needed. Moreover, payment of these fees is considered by law to fully mitigate new development's impacts, such as the

Project's. Therefore, as the Project would be required to pay school impact fees, the impact would be *less than significant.*

iv. Parks?

Less Than Significant Impact: The addition of 120 new residential units would result in increased use of existing parks. The City's 2035 General Plan Policy states that new residential development may be required to provide additional parkland or pay in-lieu fees to ensure adequate recreational spaces for residents. According to the City of Tulare's standard of providing 4 acres of developed parkland per 1,000 residents, the Project should contribute approximately 1.69 acres of parkland to adequately serve the new population (423 residents / 1,000 residents × 4 acres = 1.69 acres).

The Project includes a .85-acre park, which partially meets the City's parkland standard for the additional residents. While there is a shortfall of about 0.84 acres compared to the recommended 1.69 acres, this on-site park will provide recreational opportunities for residents, reducing reliance on existing neighborhood and regional parks.

To address the remaining deficit, the Project will be required to pay in-lieu fees as stipulated by the City's 2035 General Plan policies. These development impact fees contribute to the maintenance and expansion of public parks and recreational facilities throughout the City. The City has adopted a Quimby Act fee, and this development would be required to pay these fees. Therefore, impacts would be *less than significant*.

v. Other public facilities?

Less Than Significant Impact: The Project would generate new residents on the Project Site, which could result in increased demand of other public facilities, such as the Tulare Public Library and increased demand for library materials. However, it is anticipated that the Project-generated population increase would not be a level that would create substantial capacity or service level problems that would require the provision of new or expanded public facilities in order to maintain an acceptable level of service, including the Tulare Public Library. Even so, the Project would be subject to development impact fees and other relevant conditions of approval to address public facilities and maintain adequate service levels as a result of new development, such as the Project. Therefore, impacts would be *less than significant*.

XVI.RECREATION

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑	☐
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?	☐	☐	☑	☐

Environmental Setting

There are 20 parks that are owned and operated by the City. Parkwood Meadows Park is the closest recreational area to the Project Site and is located approximately 0.45 miles north of the Project Site.

Regulatory Setting

City of Tulare General Plan: The Conservation and Open Space Element of the City of Tulare General Plan contains the following recreational resource goals and policies potentially applicable to the project.

Goal COS-4 To provide parks and recreation facilities and services that adequately meet the existing and future needs of all Tulare residents.

- COS-P4.1 Parkland/Open Space Standards. The City's goal is to provide 4 acres of developed parkland per 1,000 residents. New residential or mixed-use developments containing a residential component may be required to provide parkland, or pay in-lieu fees, in this ratio as directed by the City.
- COS-P4.5 Fair Share Responsibilities. The City shall ensure all future residential development is responsible for its fair share of the City's cumulative park and recreational service and facilities maintenance needs.
- COS-P4.6 Land Dedication. The City shall continue its practice of requiring the dedication of community and neighborhood park lands as a condition of approval for large residential development projects (50 or more lots), if applicable.

- COS-P4.7 Fees In Lieu of Parkland Dedication. The City shall allow the payment of fees in lieu of parkland dedication, especially in areas where dedication is not feasible, as provided under the Quimby Act.

Discussion

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

Less Than Significant Impact: The addition of 120 new single-family residential units from the Project would result in an estimated population increase of approximately 423 residents (120 units × 3.52 persons per unit, based on the City's average household size). According to the City of Tulare's standard of providing 4 acres of developed parkland per 1,000 residents, the Project should contribute approximately 1.69 acres of parkland to adequately serve the new population (423 residents / 1,000 residents × 4 acres = 1.69 acres).

The Project includes a 0.85-acre park, which partially meets the City's parkland standard for the additional residents. While there is a shortfall of about 0.84 acres compared to the recommended 1.69 acres, this on-site park will provide recreational opportunities for residents, reducing reliance on existing neighborhood and regional parks.

To address the remaining deficit, the Project will be required to pay in-lieu fees as stipulated by the City's 2035 General Plan policies. These development impact fees contribute to the maintenance and expansion of public parks and recreational facilities throughout the City. By providing both an on-site park and contributing financially to the City's park system, the Project helps mitigate potential impacts on existing parks.

Furthermore, nearby parks such as Parkwood Meadows Park are within a reasonable distance from the Project Site and have the capacity to accommodate additional users without substantial deterioration. The combination of the on-site amenities and financial contributions ensures that the Project would not increase the use of existing neighborhood and regional parks to the extent that substantial physical deterioration would occur or be accelerated.

Therefore, with the inclusion of the 0.85-acre park and adherence to City requirements for parkland provision and in-lieu fees, the impact on recreational facilities is considered *less than significant.*

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

Less Than Significant Impact: The proposed project does not include recreational facilities and would not increase environmental impacts beyond those associated with the proposed project. The impact is *less than significant.*

XVII. TRANSPORTATION

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☑	☐
b) Conflict or be inconsistent with the CEQA guidelines Section 15064.3, Subdivision (b)?	☐	☐	☑	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☑	☐
d) Result in inadequate emergency access?	☐	☐	☑	☐

The following analysis is based on the Transportation Impact Study (TIS) prepared for the Project by 4Creeks, dated April 2025, which is available in Appendix G of this report.

Environmental Setting

Vehicular Access: Each residential lot would include a private driveway and attached garage for each home. The subdivision is accessible from W. Paige Avenue, which runs east west.

Parking: During construction, workers would utilize temporary on-site construction staging areas for parking vehicles and equipment. During Project operations, each residential lot would include a private driveway and attached garage for each home.

Pedestrian and Cyclist Connectivity: Sidewalks would be added along all internal residential streets, and they would connect to future sidewalks to the north, west, east, and south. These features would provide connectivity for pedestrians and cyclists with a Class 1 bike lane along Paige Avenue to the south of the Project area.

Regulatory Setting

City of Tulare Improvement Standards: The City's Improvement Standards are developed and enforced by the City's Engineering Division to guide the development and maintenance of City

roads. The cross-section drawings contained in the City Improvement Standards dictate the development of roads within the city.

Tulare City General Plan: The Transportation and Circulation Element of the City of Tulare General Plan contains the acceptable Level of Service (LOS) for roadways.

- TR-P2.3 Level of Service Standard. The City shall maintain Level of Service "D," as defined in the Highway Capacity Manual (published by the Transportation Research Board of the National Research Council), as the minimum desirable service level at which freeways, arterial streets, collector streets, and their intersections should operate.
- TR-P2.6 Highway Right-of-Way. The City shall work with Caltrans to ensure that new development projects include the dedication of land to match the ultimate right-of-way as delineated in the Caltrans Transportation Concept Reports.
- TR-P2.10 Roadway Improvements. The City shall improve existing roadway links and intersections which are identified as operating below Level of Service "D" standard or have other significant existing safety or operational deficiencies.
- TR-P2.14 Driveway/Curb Cut Consolidation. The City shall encourage the consolidation of driveways, access points, and curb cuts along existing developed major arterials or arterials when new development or a change in the intensity of existing development or land uses occurs or when traffic operation or safety warrants.
- TR-P2.27 Orientation of Subdivision Away from Arterials. The City shall require residential development to be oriented away (side-on or rear-on) from major arterials and arterials, and properly buffered from these roadway types to preserve the carrying capacity on the street and protect the residential environment. No single-family residence driveways are allowed on collector streets.
- TR-P4.3 Pedestrian Access to Transit. The City shall ensure pedestrian access to transit along arterials and collectors is available where security walls, noise barriers, or fences are proposed adjacent to residential development.
- TR-P6.2 Provision of Sidewalks for new Development. The City shall require all new development to provide sidewalks or other suitable pedestrian facilities. Whenever feasible, pedestrian paths should be developed to allow for unobstructed pedestrian flow to major destinations such as bus stops, schools, parks, and shopping centers.
- TR-P6.5 Multi-Purpose Trail. The City shall work to establish a connected, multi-purpose trail system to facilitate walking and other nonvehicular means of transportation as viable modes of transportation and recreation. Wherever possible, the City shall work with the Tulare Irrigation District to site multi-purpose trails adjacent to irrigation canal alignments.
- TR-P6.6 Bike Route System. The City shall continue to work with TCAG, other local jurisdictions, and agencies to maintain and implement a connected, comprehensive bike path, bike lane, and bike route system throughout the city, including those routes designated on the Land Use/Circulation Diagram and within the Tulare County Regional Bike Plan. The City shall promote the development of a comprehensive and safe system of recreational and commuter bicycle routes that provide connections between the

city's major employment and housing areas, between its existing and planned bikeways, and between schools, parks, retail shopping, and residential neighborhoods.

CEQA Guidelines Section 15064.3, Subdivision (b): Criteria for Analyzing Transportation Impacts

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, Projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the Project area compared to existing conditions should be considered to have a less than significant transportation impact.

(2) Transportation Projects. Transportation Projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity Projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the Project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many Projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a Project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a Project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the Project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

Discussion

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

Less Than Significant Impact: The Project does not conflict with the transportation and circulation goals outlined in the City's General Plan and meets applicable standards and policies. The State of California does not recognize traffic congestion and delay as an environmental impact per the California Environmental Quality Act (CEQA). However, the City of Tulare, TCAG, and other local agencies still use LOS standards to assess street and highway performance. The City of Tulare General Plan 2035 defines that the minimum acceptable LOS

standard shall be LOS D per Policy TR-P2. LOS D will be taken as the threshold for acceptable traffic operation for this project.

According to the Transportation Impact Study (Appendix G), prepared for the Project by 4Creeks, all three study intersections operate at acceptable service levels (LOS D or better) during the AM and PM peak hours. This includes Paige Avenue/Pratt Street, Paige Avenue/K Street, and Bardsley Avenue/E Street, during both the opening year and ten-year horizon scenarios. Any temporary congestion during construction would be short-term and mitigated through appropriate traffic management plans.

The Project would implement frontage improvements, including sidewalks, and a Class 1 Multi-Use Path along Paige Avenue. These improvements would provide unobstructed pathways for pedestrians, facilitating access to nearby destinations. Vehicular access would be provided through an access point on Paige Ave to the south and future residential developments to the north, east, west, with driveway locations carefully designed to avoid curb cut redundancies and ensure safe and efficient traffic flow. This design is consistent with the City's Policy TR-P2.14, which promotes driveway consolidation to enhance traffic safety and operations. Furthermore, improvement plans would be submitted for review by the City Engineer to ensure all new streets and intersections meet City standards. Given the alignment with City policies, the Project would have a *less than significant impact* on the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

b) Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

Less than Significant Impact: Senate Bill (SB) 743 requires that relevant CEQA analysis of transportation impacts be conducted using a metric known as vehicle miles traveled (VMT) instead of Level of Service (LOS). VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. A Project that induces excessive vehicle travel may result in a significant transportation impact under CEQA Guidelines Section 15064.3, Subdivision (b).

A vehicle miles traveled (VMT) analysis was conducted to determine whether the Project would create a VMT impact. The analysis was based on information provided by the City of Tulare's VMT guidance memorandum dated June 26, 2020. Additional information on the VMT screening analysis is shown in Appendix J of the TIA (Appendix G). The analysis evaluated whether the Project's location and characteristics warranted a full VMT assessment or was qualified for screening under the City's VMT thresholds.

The TIS determined that the Project is in an area with by high VMT based on map-based screening data derived from the City's traffic analysis zones (TAZs). However, due to the Project's specific location within a high VMT zone, direct VMT data for the Project site was not available. To address this, the analysis utilized an average VMT value calculated from the

surrounding TAZs. This averaging approach was used to estimate the baseline VMT conditions for the Project area. The results indicated that the Project's estimated VMT per capita or per employee fell below the City's screening threshold for significant VMT impacts, which is based on a 15% reduction below the regional or citywide average VMT, consistent with the Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA.

Based on this screening analysis, the Project was exempt from a full VMT analysis, as the estimated VMT impact does not exceed the City's significance threshold. Additional details of the VMT screening methodology, including the TAZ data and averaging calculations, are provided in Appendix J of the TIS (Appendix G). Therefore, the Project's impact on VMT is considered *less than significant*.

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

Less than Significant Impact: The proposed Project includes the creation of new intersections and geometric design features, which will be designed in accordance with applicable standards and reviewed by the City Engineering Division. The site plan demonstrates that the proposed designs avoid sharp curves, dangerous intersections, or incompatible uses that could increase hazards. All proposed road designs will be reviewed and approved by the City Engineering Division. There would be a *less than significant impact*.

d) Would the Project result in inadequate emergency access?

Less than Significant Impact: The Project includes new intersections and a network of local roads within the subdivision to facilitate access, including for emergency vehicles. Emergency access to the Project Site would be from Paige Ave, with a network of local roads within the subdivision to provide full access. The design of these roads will comply with applicable standards, providing emergency access. There would be a *less than significant impact.*

XVIII. TRIBAL CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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	☐	☑	☐	☐
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 I 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.	☐	☑	☐	☐

Environmental Setting

Of the main groups inhabiting the Tulare County area, the Southern Valley Yokuts occupied the largest territory. The Yokuts numbered about 25,000 and were clustered into about 50 independent local subtribes. Historians believe approximately 22 villages stretched from Stockton northerly to the Tehachapi Mountains southerly, although most were concentrated around Tulare Lake, Kaweah River, and its tributaries. As a result, numerous cultural resource sites have been identified in Tulare County.

Cultural Resources Record Search and Native American Consultation

A cultural resources records search was conducted by Taylored Archaeology for the Fernandes Subdivision Project, which involves the development of 120 single-family residential lots in Tulare, California. The search included a half-mile radius around the Project Site and reviewed various records, including the Archaeological Resources Directory, National Register of Historic Places (NRHP), and California Historical Resources Information System (CHRIS). The search revealed that no prehistoric or historic cultural resources are recorded within the Project Site. Five historic-era resources were identified within a half-mile radius, including a segment of Highway 99 (eligible for NRHP and CRHR) and a segment of the Tulare Irrigation Canal (eligible for CRHR). However, none of these resources are immediately adjacent to or overlapping the Project boundary and are not expected to be impacted by the Project.

A Sacred Lands File (SLF) search was also requested from the Native American Heritage Commission (NAHC), and the results were negative, indicating no known sacred lands within the Project area. However, this does not rule out the presence of cultural resources, and consultation with local tribes was recommended.

Tribal Consultation

In compliance with AB 52, the Santa Rosa Rancheria Tachi Yokut Tribe was sent a letter on February 13, 2025, inviting the tribe to consult with the City regarding the Project. A copy of the letter is available in Appendix H to this report. The 30-day response window closed on March 13, 2025. No response or request for consultation was received.

Regulatory Setting

Tribal Cultural Resource (TCR): Tribal Cultural Resources can include Site features, places, cultural landscapes, sacred places, or objects which are of cultural value to a Tribe. It is either listed on or eligible for the CA Historic Register or a local historic register or determined by the lead agency to be treated as TCR.

Native American Reserve (NAR): This designation recognizes tribal trust and reservation lands managed by a Native American Tribe under the United States Department of the Interior's Bureau of Indian Affairs over which the County has no land use jurisdiction. The County encourages the adoption of tribal management plans for these areas that consider compatibility and impacts upon adjacent area facilities and plans.

Health and Safety Code, Section 7050.5: Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped near discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC). CEQA Guidelines (Public Resources Code Section 5097) specify the procedures to be followed in case of the discovery of human remains

on non-Federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

City of Tulare General Plan: The City of Tulare General Plan includes the following goals and policies pertaining to tribal cultural resources:

Goal COS-5 To manage and protect sites of cultural and archaeological importance for the benefit of present and future generations.

- COS-P5.1 Archaeological Resources. The City shall support efforts to protect and/or recover archaeological resources.
- COS-P5.6 Protection of Resources with Potential State or Federal Designations. The City shall encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values.
- COS-P5.9 Discovery of Archaeological Resources. In the event that archaeological/ paleontological resources are discovered during site excavation, grading, or construction, the City shall require that work on the site be suspended within 100 feet of the resource until the significance of the features can be determined by a qualified archaeologist/ paleontologist. If significant resources are determined to exist, an archaeologist shall make recommendations for protection or recovery of the resource. City staff shall consider such recommendations and implement them where they are feasible in light of project design as previously approved by the City.
- COS-P5.10 Discovery of Human Remains. Consistent with Section 7050.5 of the California Health and Safety Code and CEQA Guidelines (Section 15064.5), if human remains of Native American origin are discovered during project construction, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). If any human remains are discovered or recognized in any location on the project site, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent human remains until:
    - The Tulare County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required; and
    - If the remains are of Native American origin,
        - The descendants of the deceased Native Americans have made a timely recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in Public Resources Code Section 5097.98.

    - The Native American Heritage Commission was unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified by the commission, or
    - The landowner or his or her authorized representative rejects any timely recommendations of the descendent, and mediation conducted by the Native American Heritage Commission has failed to provide measures acceptable to the landowner.
- COS-P5.11 Impact Mitigation. If preservation of cultural/historical resources is not feasible, the City shall make every effort to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.
- COS-P5.12 Mitigation Monitoring for Historical Resources. The City shall develop standards for monitoring mitigation measures established for the protection of historical resources prior to development.
- COS-P5.13 Alteration of Sites with Identified Cultural Resources. When planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. The City shall permit development in these areas only after a site-specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource.
- COS-P5.14 Education Program Support. The City shall support local, state, and national education programs on cultural and archaeological resources.
- COS-P5.15 Solicit Input from Local Native Americans. The City shall solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance.
- COS-P5.16 Confidentiality of Archaeological Sites. The City shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect resources that are determined to exist. An archaeologist/paleontologist shall make recommendations for protection or recovery of the resource. City staff shall consider such recommendations and implement them where they are feasible in light of project design as previously approved by the City.
- COS-P5.17 Cooperation of Property Owners. The City shall encourage the cooperation of property owners to treat cultural resources as assets rather than liabilities and encourage public support for the preservation of these resources.
- COS-P5.18 Archaeological Resource Surveys. Prior to project approval, the City shall require project applicant to have a qualified archaeologist conduct the following activities: (1) conduct a record search at the Regional Archaeological Information Center located at California State University Bakersfield and other appropriate historical repositories, (2) conduct field surveys where appropriate, and (3) prepare technical reports, where appropriate, meeting California Office of Historic Preservation Standards (Archaeological Resource Management Reports).

Discussion

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 with Mitigation Incorporated: The Project would not cause a substantial adverse change in the significance of a tribal cultural resource, nor is it listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources. Based on the results of the records search, no previously recorded cultural resources are located within the Project Site. Although no cultural resources were identified, Mitigation Measures CUL-1 and CUL-2, required for potential impacts to cultural resources, would also address potential impacts to inadvertent discovery of tribal cultural resources. Therefore, impacts would be *less than significant with mitigation incorporated.*

ii.A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision(c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact with Mitigation Incorporated: The City, as lead agency, has determined there are no known tribal cultural resources located within the Project area. Additionally, there are not believed to be any human remains buried within the Project area's vicinity, including internment of Native Americans. However, albeit unlikely, there remains the possibility of inadvertent discovery of previously unknown tribal cultural resources. Although no cultural resources were identified, Mitigation Measures CUL-1 and CUL-2, required for potential impacts to cultural resources, would also address potential impacts to inadvertent discovery of tribal cultural resources. Therefore, impacts would be *less than significant with mitigation incorporated*.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relation of which could cause significant environmental effects?	☐	☐	☑	☐
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☑	☐
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?	☐	☐	☑	☐
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?	☐	☐	☑	☐
e) Comply with Federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☑	☐

Environmental Setting

Utilities and service systems include wastewater treatment, storm water drainage facilities, water supply, landfill capacity, and solid waste disposal.

Wastewater: Wastewater will be collected and treated at the City's wastewater treatment facility, which is located at the intersection Paige Ave. and West St. The Project will tie into an existing 27" line along Paige Avenue.

Solid Waste: Solid waste collection service is provided by the City of Tulare Solid Waste Division. Solid waste disposal will be provided by the Tulare County Solid Waste Department, which operates two landfills and six transfer stations within the county. Combined, these landfills receive approximately 300,000 tons of solid waste per day.

Water: Water for the proposed development will be provided by the City of Tulare. The City's primary water source is groundwater. Existing water entitlements currently provide water to the proposed Project site. Implementation of the proposed Project will not require additional water entitlements. The Project will tie-into water lines within the existing residential development, located approximately 500 feet northwest, along S E St, Lemonwood Ave, and Driftwood Ave, of the project site. Additionally, there is a future water pipeline (P-72) proposed along Paige Ave identified in the City's Water System Master Plan.

Stormwater: Tulare is currently in an agreement with Tulare Irrigation District (TID). Tulare pumps storm water into canals owned by TID. However, the drainage to TID facilities will be limited and no new sources will be established. Once the Site is operational, storm water drainage will be directed into an onsite basin in the northeast corner of the site. This will be able to retain all stormwater from the Site. This basin will be able to support drainage from the proposed Project.

Electric Power: SCE will provide electricity to the Project. The Project will tie into existing facilities along Paige Avenue.

Regulatory Setting

CalRecycle: California Code of Regulations, Title 14, Natural Resources – Division 7 contains all current CalRecycle regulations regarding nonhazardous waste management in the state. These regulations include standards for the handling of solid waste, standards for the handling of compostable materials, design standards for disposal facilities, and disposal standards for specific types of waste.

Central Valley RWQCB: The Central Valley RWQCB requires a Stormwater Pollution Prevention Plan (SWPPP) for projects disturbing more than one acre of total land area. Because the project is greater than one acre, a SWPPP to manage stormwater generated during project construction will be required.

The Central Valley RWQCB regulates Wastewater Discharges to Land by establishing thresholds for discharged pollutants and implementing monitoring programs to evaluate program compliance. This program regulates approximately 1500 dischargers in the region.

The Central Valley RWQCB is also responsible for implementing the federal program, the National Pollutant Discharge Elimination System (NPDES). The NPDES Program is the federal

permitting program that regulates discharges of pollutants to surface waters of the U.S. Under this program, a NPDES permit is required to discharge pollutants into Waters of the U.S. There are 350 permitted facilities within the Central Valley Region.

Discussion

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

Less Than Significant Impact: The Project will require the extension of existing utility services into the Project area, including water, wastewater, stormwater drainage, electric power, and telecommunications connections.

- Water: The Project will tie-into water lines within the existing residential development, located approximately 500 feet northwest, along S E St, Lemonwood Ave, and Driftwood Ave, of the project site. Additionally, there is a future water pipeline (P-72) proposed along Paige Ave identified in the City's Water System Master Plan.
- Wastewater: The Project will connect to an existing 27-inch sewer line along Paige Avenue.
- Stormwater Drainage: Stormwater will be managed on-site with a retention basin in the northeast corner of the project site, eliminating the need for new off-site stormwater facilities.
- Electric Power: Electric power will be provided by Southern California Edison (SCE) through connections to existing facilities along Paige Avenue.
- Telecommunications: Telecommunications facilities will connect to existing infrastructure in the area.

Construction activities related to these utility extensions are not anticipated to cause significant environmental effects. The work will occur within existing rights-of-way and will be integrated into the overall Project construction plan to minimize environmental impacts. Best management practices (BMPs), such as erosion control measures and proper waste management, will be implemented during construction to reduce potential environmental impacts. The impact is *less than significant*, and no additional mitigation measures are required.

b) Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact: Water services for the Project will be provided by the City of Tulare upon development. The City's water supply consists of 23 wells extracting water from an

underground aquifer. According to the City's 2020 Urban Water Management Plan (UWMP), the projected water supply is 6,255 million gallons (MG) in 2025, 6,421 MG in 2030, and 6,910 MG in 2035. As of 2020, current water usage stands at 5,519 MG, averaging approximately 10,500 gallons per minute daily.

The City's Water System Master Plan indicates that single-family residential uses consume about 2,400 gallons per day per acre. Since the Project will be developed for single-family residential use on a 19.58-acre Site, it is expected to use approximately 46,992 gallons per day, equating to around 17.2 MG annually. This addition will have a minimal effect on the projected water usage, his addition will have a minimal effect on the projected water usage, increasing the total to 6,272.15 MG in 2025 (a 0.27% increase), 6,438.15 MG in 2030 (a 0.27% increase), and 6,927.15 MG in 2035 (a 0.25% increase). These increases indicate a negligible impact on the City's overall water supply projections.

While the Project will result in reduced percolation to the groundwater basin compared to the existing vacant Site due to increased paved and impervious surfaces, all stormwaters will be redirected to an onsite basin for groundwater recharge. Although the Project will use groundwater for domestic purposes, the amount is not considered significant and will not substantially lower the aquifer's groundwater table or interfere with its recharge processes.

Additionally, the City employs water conservation staging ordinances and conjunctive use techniques—such as diverting excess surface water for groundwater recharge during wet years—to ensure water availability during dry periods. These strategies enhance the City's control over water supply and demand, significantly reducing vulnerability during dry and multiple dry years. Furthermore, the development of the Project would be consistent with the underlying General Plan land use designation of the Project Site, and as such, the Project has been accounted for in the current 2020 UWMP and its growth forecasts as well as its water demand and supply calculations.

The Project will also pay its fair share for the installation of improvements and all development fees related to water service, supporting the City's ability to provide adequate water supplies without burdening existing infrastructure. The impact on water resources is *less than significant.*

c) Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?

Less Than Significant Impact: Wastewater generated by the Project will be collected and treated at the City's wastewater treatment facility located at the intersection of Paige Ave. and West St. The Project will connect to the existing 27-inch sewer line in Paige Avenue.

Although the addition of 120 homes will increase the volume of wastewater requiring treatment, the Tulare Municipal Service Review indicates that the wastewater treatment facility has adequate capacity to accommodate new developments within the City. The facility is designed to serve and accommodate demand within the City's growth boundary, and this Project is within the existing City limits. The impact is *less than significant.*

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

Less Than Significant Impact: Solid waste collection service will be provided by the City of Tulare Solid Waste Division, with disposal managed by the Tulare County Solid Waste Department. The addition of 120 residential units will generate additional solid waste; however, the existing landfill capacities are sufficient to handle the additional waste generated by the Project.

Tulare County's facilities collectively handle approximately 300,000 tons of solid waste per day. The waste generated by the Project is minimal relative to this capacity. Moreover, the Project will comply with all applicable solid waste reduction statutes and regulations, including implementing recycling programs and encouraging waste reduction practices among residents. The impact is *less than significant.*

e) Would the Project comply with Federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact: The Project will comply with all applicable federal, state, and local statutes and regulations related to solid waste management and reduction. Solid waste collection and disposal will be conducted in accordance with the policies of the City of Tulare and Tulare County Solid Waste Department. The Project will implement waste reduction and recycling programs to minimize solid waste generation, in compliance with state mandates such as AB 939 and AB 341, which aim to reduce landfill waste and increase recycling efforts. Therefore, impacts would be *less than significant*.

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑
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?	☐	☐	☐	☑

Environmental Setting

Fire Hazard Severity Zones: Geographical areas designated pursuant to California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code, Sections 51175 through 51189. The City is not with a classified fire hazard severity zone.

Tulare Unit Strategic Fire Plan Key Goals and Objectives:

- Support the implementation and maintenance of defensible space inspections around structures.
- Analyze trends in fire cause and focus prevention and education efforts to modify behaviors and effect change to reduce ignitions within Tulare County
- Identify and evaluate wildland fire hazards and recognize assets at risk, collecting and analyzing data to determine fuel reduction project, and other projects.

- Assist landowners and local government in the evaluation of the need to retain and utilize features (e.g. roads, fire lines, water sources) developed during fire suppression efforts, taking into consideration those identified in previous planning efforts.

Tulare County Disaster Preparedness Guide (2011): The Tulare County Preparedness Guide provides guidelines regarding disaster preparedness and evacuation planning for Tulare County residents.

Discussion

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

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

No Impact: The Project is not located within a state responsibility area or on land classified as very high fire hazard severity zone. Moreover, the Project would not impair an adopted emergency response plan or emergency evacuation plan including the Tulare Unit Strategic Fire Plan and the Tulare County Disaster Preparedness Guide. Therefore, *no impact* would occur.

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

No Impact: The Project is not located within a state responsibility area or on land classified as very high fire hazard severity zone. The Project is located on a flat area of land with insignificant risk of fire. The Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan identifies the risk of fire within the City of Tulare as having unlikely frequency, limited extent, limited magnitude, and low significance. The Project would not exacerbate wildfire risks and expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Therefore, *no impact* would occur.

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

No Impact: The Project is not located within a state responsibility area or on land classified as very high fire hazard severity zone. The construction of the Project involves adding new local residential streets and expanding existing utilities in the area to the 120 lots on the Project Site. Utilities such as emergency water sources and power lines would be included as part of the

proposed development, however all improvements would be subject to City standards and fire chief approval. Therefore, *no impact* would occur.

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

No Impact: The Project is not located within a state responsibility area or on land classified as very high fire hazard severity zone. The Project Site is located on land with relatively flat topography and is not susceptible to flooding or landslides from post-fire instability from being downslope or downstream. Therefore, *no impact* would occur.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the Project have the potential substantially to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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?	☐	☑	☐	☐
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)?	☐	☐	☑	☐
c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

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

Less Than Significant Impact with Mitigation Incorporated: The above Initial Study found the Project could potentially significantly impact Biological Resources, Cultural Resources, Geology

and Soils (Paleontological Resources), Hydrology/Water Quality, and Tribal Cultural Resources. However, with the implementation of previously identified Mitigation Measures BIO-1, BIO-2, BIO-3, CUL-1, CUL-2, GEO-1, HYD-1, HYD-2, and HYD-3, each respective potentially significant impacts would be reduced to a less than significant level. Accordingly, the Project would not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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. No additional mitigation measures are required as impacts would be *less than significant with previously identified mitigation measures incorporated*.

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: State CEQA Guidelines Section 15064(h) states that a lead agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable. The assessment of the significance of the cumulative effects of a project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. Due to the nature of the Project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed Project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., an increase in population could lead to an increased need for housing, an increase in traffic, air pollutants, etc). Therefore, impacts would be *less than significant*.

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

Less Than Significant Impact: The analyses of environmental issues contained in this above Initial Study indicate that the Project is not expected to have a substantial impact on human beings, either directly or indirectly. Mitigation measures have been incorporated in the Project design to reduce all potentially significant impacts to less than significant, which results in a *less than significant* impact on this checklist item.

3.6 MITIGATION MONITORING AND REPORTING PROGRAM

As required by Public Resources Code Section 21081.6, subd. (a)(1), a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Fernandes Subdivision Project to monitor the implementation of the mitigation measures that have been adopted for the Project. This MMRP has been created based upon the findings of the Initial Study/Mitigated Negative Declaration.

The first column of the table identifies the mitigation measure. The second column names the party responsible for carrying out the required action. The third column identifies the timing of initiating the mitigation measure. The fourth column names the party ensuring that the mitigation measure is implemented. The last column will be used by the City of Tulare to ensure that the individual mitigation measures have been monitored.

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure BIO-1 (Construction Timing). If feasible, future construction activities shall take place entirely outside of the avian nesting season, defined as February 1 to August 31.	Project Applicant	Pre-Construction	City of Tulare	
Mitigation Measure BIO-2 (Preconstruction Surveys). If construction must occur between February 1 and August 31, a qualified biologist shall conduct surveys for active bird nests within 7 days prior to the start of work during this period. The survey area shall encompass the Project Site and accessible surrounding lands within a quarter mile for nesting Swainson's hawks, 500 feet for other nesting raptors, and 250 feet for nesting birds.	Project Applicant	Pre-Construction	City of Tulare	
Mitigation Measure BIO-3 (Avoidance of Active Nests). Should any active nests be discovered in or near proposed construction zones, the biologist shall identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.	Project Applicant	Ongoing During Construction	City of Tulare	
Mitigation Measure CUL-1: If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (NPS 1983) shall be contacted immediately to evaluate the find. If the discovery proves to be important resource under CEQA, additional work such as data recovery excavation and Native American consultation shall be completed to mitigate any adverse effects.	Project Applicant	Ongoing During Construction	City of Tulare	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure CUL-2: If human remains are uncovered during construction, the Tulare County Coroner shall be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 5097.98 require that the coroner notify the Native American Heritage Commission within 24 hours of discovery. The Native American Heritage Commission will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the treatment and disposition of the remains. The Most Likely Descendent shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.	Project Applicant	Ongoing During Construction	City of Tulare	
Mitigation Measure GEO-1: If a suspected unique paleontological resource were to be discovered during construction of the Project, the following protocol shall be implemented: • The City of Tulare shall be notified of the discovery. Work shall cease around the find until a qualified paleontologist meeting the Society of Vertebrate Paleontology standards has evaluated the find in accordance with federal, state, and local guidelines. The applicant shall choose the qualified paleontologist subject to the approval of the City. If the find is determined to be a unique resource, such measures may include avoidance, preservation in place, data recovery and associated documentation, or other appropriate measures. Construction activity may continue unimpeded in other portions of the Project Site. The City shall determine the appropriate and feasible measure(s) that will be necessary to mitigate impacts, in consideration of the measure(s) recommended by the paleontologist. Construction in the affected area shall re-commence with the approval of the City.	Project Applicant	Ongoing During Construction	City of Tulare	
Mitigation Measure HYD-1: Prior to the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California State Water Resources Control Board's Storm Water Permit Unit and submit a copy of this NOI to the City. The City shall review the noticing documentation prior to approval of the grading permit and City monitoring staff shall inspect the Project Site during construction for compliance.	Project Applicant	Pre-Construction	City of Tulare	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the City 45 days prior to the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. A SWPPP for site construction shall be developed prior to the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to stormwater and shall include specific Best Management Practices (BMPs) to control the discharge of material from the site. The following BMPs methods shall include, but would not be limited to: • Dust control measures to ensure success of all on-site activities to control fugitive dust; • A routine monitoring plan to ensure success of all on-site erosion and sedimentation control measures; • Provisional detention basins, straw bales, erosion control blankets, mulching, silt fencing, sand bagging, and soil stabilizers shall be used; • Soil stockpiles and graded slopes shal be covered after two weeks of inactivity and 24 hours prior to and during extreme weather conditions; and, • BMPs shal be strictly followed to prevent spills and discharges of pollutants on-site, such as material storage, trash disposal, construction entrances, etc.	Project Applicant	Pre-Construction	City of Tulare	
Mitigation Measure HYD-3: A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained in accordance with the manufacturer's maintenance conditions. The manual shall require that devices be cleaned prior to the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following: • Runoff shall be directed away from trash and loading dock areas; • Bins shall be lined or otherwise constructed to reduce leaking of liquid wastes;	Project Applicant	Pre-Construction	City of Tulare	

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
• Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and, • Impervious berms, trench catch basin, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills or wash down water to enter the drainage system.				

3.7 Supporting Information and Sources

1. **2035 City of Tulare General Plan EIR**. Available at: https://www.tulare.ca.gov/home/showpublisheddocument/2393/635907185852000000
2. **2035 The City of Tulare General Plan**. Available at: https://www.tulare.ca.gov/home/showpublisheddocument/266/635666815900430000
3. **City of Tulare Development Code**. Available at: https://codelibrary.amlegal.com/codes/tulare/latest/overview
4. **2024 CEQA Statute & Guidelines**. Available at: https://www.califaep.org/docs/2024_CEQA_Statute_and_Guidelines_Handbook.pdf

Aesthetics

5. **Caltrans State Scenic Highways**. Available at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa

Agriculture and Forest Resources

6. **California Department of Conservation Farmland Mapping and Monitoring Program**. Available at: https://www.conservation.ca.gov/dlrp/fmmp

Air Quality

8. **SJVAPCD Rules and Regulations**. Available at: https://www.valleyair.org/rules/1ruleslist.htm
9. **SJVAPCD Ambient Air Quality Standards & Valley Attainment Status**. Available at: https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/
10. **SJVAPCD, 2015. Guidance for Assessing and Mitigating Air Quality Impacts**. Available at: https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF
11. **CARB, 2016. Ambient Air Quality Standards**. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf
12. **CARB, 2017. California's 2017 Climate Change Scoping Plan**. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf
13. **CARB 2022a. Scoping Plan for Achieving Carbon Neutrality**. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents
14. **CARB 2022b. State and Federal Area Designations**. Available at: https://ww2.arb.ca.gov/our-work/programs/state-and-federal-area-designations
15. **CARB. Common Air Pollutants**. Available at: https://ww2.arb.ca.gov/resources/common-air-pollutants?corr
16. **CARB. Air Quality Data Statistics**. Available at: https://www.arb.ca.gov/adam/topfour/topfour1.php

Biological Resources

17. **Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, and T. J. Rosatti, Eds. 2012. The Jepson Manual: Vascular Plants of California, 2nd edition. University of California Press, Berkeley, CA.**
18. **Calflora. 2024. Calflora: An online database of plant identification and distribution [web application]. Calflora, Berkeley, California.** Available at: http://www.calflora.org.

19. **California Natural Diversity Database. BIOS 6.0 and Rarefind 5.0**. Available at: https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data
20. **2002. California Fish and Game Code. Gould Publications. Binghamton, NY.**
21. **California Native Plant Society. 2024. Inventory of Rare and Endangered Vascular Plants of California.** Available at: http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi.
22. **California Soil Resource Lab. 2008. Streaming, seamless interface to USDA-NCSS SSURGO and STATSGO Soil Survey Products.**
23. **eBird. 2024. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York.** Available: http://www.ebird.org.
24. **Historic Aerials. 2024. Nationwide Environmental Title Research, LLC.** Available at: https://www.historicaerials.com/about-us
25. **iNaturalist. 2024.** Available at: https://www.inaturalist.org/
26. **Jepson Flora Project (eds.) 2024. Jepson eFlora,** Available at: https://ucjeps.berkeley.edu/eflora/
27. **Nafis, G. 2024. California Herps - A Guide to the Amphibians and Reptiles of California.** Available at: http://www.californiaherps.com/
28. **National Weather Service. 2024.** Available at: https://www.weather.gov/
29. **U.S. Corps of Engineers. 1987. Corps of Engineers wetlands delineation manual. Department of the Army.**
30. **Zeiner, David C., William F. Laudenslayer, Kenneth E. Mayer and Marshal White. Ed. 1988. California's wildlife, volume I, amphibians and reptiles, volume II, birds, and volume III, mammals. Department of Fish and Game. Sacramento, CA.** Available at: https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range.

Cultural Resources

22. **California Health and Safety Code Section 7050.5**. Available at: https://california.public.law/codes/ca_health_and_safety_code_section_7050.5#:~=California%20Health%20and%20Safety%20Code%20Sec.%207050.5%20%28a%29,in%20Section%205097.99%20of%20the%20Public%20Resources%20Code
23. **California Register of Historical Resources**. Available at: https://ohp.parks.ca.gov/?page_id=21238
24. **National Register of Historic Places**. Available at: https://www.nps.gov/subjects/nationalregister/index.htm
25. **NETROnline.** *Historic Aerials.* Available Online at: https://www.historicaerials.com/
26. **Office of Historic Preservation**. Available at: https://ohp.parks.ca.gov/
27. **United States Geological Survey:**
    1. 1925 Tulare, California, Quadrangle Map. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.
    2. 1950 Tulare, California, Quadrangle Map. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.
    3. 1971 Tulare, California, Quadrangle Map, 1950, photo revised 1971. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.
    4. 2012 Tulare, California, Quadrangle Map. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.
    5. 2015 Tulare, California, Quadrangle Map. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

6. 2018 Tulare, California, Quadrangle Map. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.
7. 2021 Tulare, California, Quadrangle Map. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

28. **U.S. Agricultural Adjustment Administration (USAAA)**. *1946 Fresno County, California Aerial Survey No. 1946 F-K 13-32.* Available Online at: http://digitized.library.fresnostate.edu/cdm/singleitem/collection/aerial/id/16014

Energy

26. **SCE Power Resources**. Available at: https://www.sce.com/sites/default/files/custom-files/PDF_Files/SCE_2022_Power_Content_Label_B%26W.pdf

Geology and Soils

27. **Fault Activity Map of California**. Available at: https://maps.conservation.ca.gov/cgs/fam/
28. **Nord Series, USDA Natural Resources Conservation Service**. Available at: https://soilseries.sc.egov.usda.gov/OSD_Docs/N/NORD.html
29. **The City of Tulare Association of Governments, 1974. Five County Seismic Safety Element**. Available at: https://tularecounty.ca.gov/rma/planning-building/environmental-planning/environmental-planning-resources/five-county-seismic-safety-element-1974/
30. **Web Soil Survey, USDA Natural Resources Conservation Service, Soil Report**. Available at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Greenhouse Gas Emissions

31. **Overview of Greenhouse Gases, EPA**. Available at: https://www.epa.gov/ghgemissions/overview-greenhouse-gases
32. **SJVAPCD, 2009a. Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act, Final Staff Report**. Available at: https://ww2.valleyair.org/media/mdfm0lsd/1-ccap-final-ceqa-ghg-staff-report-dec-17-2009.pdf
33. **SJVAPCD, 2009b. Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA**. Available at: https://valleyair.org/transportation/GAMAQI.pdf
34. **SJVAPCD, 2009c. Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency**. Available at: https://ww2.valleyair.org/media/disb2jna/2-ccap-final-district-policy-ceqa-ghg-dec-17-2009.pdf

Hazards and Hazardous Materials

35. **California Building Code**. Available at: https://www.dgs.ca.gov/BSC/Codes
36. **Department of Toxic Substances Control's EnviroStor**. Available at: https://dtsc.ca.gov/your-envirostor/

Hydrology and Water Quality

38. **FEMA National Flood Hazard Mapping**. Available at: https://msc.fema.gov/portal/home

Noise

39. **FTA Transit Noise and Vibration Impact Assessment**. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Population and Housing

40. **The City of Tulare Census Data**. Available at: https://data.census.gov/profile/Tulare_city,_California?g=160XX00US0680644

Transportation

41. **Technical Advisory on Evaluating Transportation Impacts under CEQA**. Available at: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf

City of Tulare
411 E Kern Ave
Tulare, CA 93274

SECTION 4: List of Preparers
Project Title: Fernandes Subdivision

Lead Agency

City of Tulare

- Steven Sopp, Principal Planner
- Julian Reynaga, Assistant Planner

List of Preparers

4Creeks Inc.

- Ellie Krantz, Associate Planner
- David Duda, AICP, Principal Planner

Persons and Agencies Consulted

The following individuals and agencies contributed to this Initial Study/Mitigated Negative Declaration:

Core Environmental Consulting (Health Risk Assessment)

- Jesse Madsen, Principal Environmental Scientist

Soar Environmental Consulting (Biological Resources)

Taylored Archaeology (Cultural Resources)

- Consuelo Sauls, M.A., RPA, Archaeologist

Paul Humphrey, E.P. (Phase I Environmental Site Assessment)

Krazan & Associates (Phase II Limited Site Assessment)

- Michael Bowery, P.G., Senior Project Manager
- Remington Alexander, P.E., Environmental Regional Manager

4Creeks Inc. (Transportation)

- Lisa Wallis-Dutra, Senior Traffic Engineer
- Taryn Pascua, Civil Engineer

Appendix A

Air Quality/GHG/Energy Assessment

Table of Contents

Section 1 – Introduction 1

1.1 Project Description 1
1.2 Project Setting 1
1.3 Summary of CEQA Requirements 1

Section 2 – Air Quality 2

2.1 Air Quality Setting 2
2.2 Ambient Air Quality 4
2.3 Existing Project Site 8
2.4 Regulatory Framework 8
2.5 Thresholds and Methodology 10
2.6 Project Impacts 13

Section 3 – Greenhouse Gas Emissions 19

3.1 Greenhouse Gas Setting 19
3.2 Existing Project Site 22
3.3 Regulatory Framework 22
3.4 Thresholds and Methodology 25
3.5 Project Impacts 26

Section 4 – Energy 30

4.1 Energy Setting 30
4.2 Existing Project Site 31
4.3 Regulatory Framework 31
4.4 Thresholds and Methodology 34
4.5 Project Impacts 36

Section 5 – Cumulative Impacts 38

Section 6 – Mitigation Measures 40

Section 7 – Conclusions and Recommendations 40

Section 8 – References 41

Attachments

Attachment A. Vicinity Map
Attachment B. Project Site Plan
Attachment C. CalEEMod Report
Attachment D. Health Risk Assessment (HRA)
Attachment E. Energy Calculations

List of Tables

Table 1. San Joaquin Valley Attainment Status 4
Table 2. W. Ashland Avenue & N. Church Street Air Monitoring Stations Data 5
Table 3. California and National Ambient Air Quality Standards 6
Table 4. Thresholds of Significance for Criteria Pollutants 11
Table 5. Thresholds of Significance for Toxic Air Contaminants (TAC's) 11
Table 6. Projected Construction Emissions Compared to SJVAPCD Thresholds of Significance 15
Table 7. Projected Operational Emissions Compared to SJVAPCD Thresholds of Significance 16
Table 8. HRA Results Compared to SJVAPCD Thresholds of Significance 17
Table 9. Greenhouse Gases 21
Table 10. International Greenhouse Gas Regulations 22
Table 11. Federal Greenhouse Gas Regulations 23
Table 12. State Greenhouse Gas Regulations 25
Table 13. Regional Greenhouse Gas Regulations 25
Table 14. Consistency Analysis with the Tulare Climate Action Plan 29
Table 15. On & Off-Road Mobile Fuel Use Generated by Construction Activities 36
Table 16. On-Road Mobile Fuel Use and Electricity Use Generated by Operational Activities 37

Section 1 – Introduction

1.1 Project Description

This document provides an air quality and greenhouse gas assessment for the Fernandes Property (Project) in Tulare, CA. The Project proposes 120 units of Low-Density Residential development on 19.58 acres near the City's southwestern boundary as well as a .85-acre community park. A Vicinity Map and Site Plan are provided in Attachments A and B, respectively.

1.2 Project Setting

The proposed Project is located on approximately 19.58 acres in the southwestern portion of the City of Tulare, California. The site is bordered by Paige Avenue, a major arterial, to the south. The northern, eastern, and western boundaries of the Project are bound by agricultural farmland with a few industrial facilities throughout. The site is located on one parcel, APN 174-030-008, which currently is comprised of agricultural orchards and private dirt access roads.

The site is located on the perimeter of the City of Tulare, just inside of the city limits. The site is currently used for agricultural uses; however, the site has been designated by the City's General Plan for Low-Density Residential. The proposed Project site is in a developing area of the City of Tulare, with agricultural farmland to the north, east, and west, and vacant land to the south. However, to the east of the site is land that has been designated for heavy industrial land uses by the City of Tulare General Plan. The closest school site, Countryside High School, is approximately 0.74 miles northwest of the Project site.

1.3 Summary of CEQA Requirements

CEQA is required by Section 21000 et seq. of the California Public Resources Code and Title 14 of the California Code of Regulations, Section 15000 *et seq.* Section 15002(a) of the CEQA Guidelines describes the basic purposes of CEQA as follows.

(1) Inform governmental decision-makers and the public about the potential significant environmental effects of proposed activities.
(2) Identify the ways that environmental damage can be avoided or significantly reduced.
(3) Prevent significant, avoidable damage to the environment by requiring changes in Projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
(4) Disclose to the public the reasons why a governmental agency approved the Project in the manner the agency chose if significant environmental effects are involved.

The City of Tulare will act as Lead Agency for this Project pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines.

Section 2 – Air Quality

2.1 Air Quality Setting

San Joaquin Valley Air Basin

The Project lies in western Tulare County, within the San Joaquin Valley Air Basin. The San Joaquin Valley Air Basin is bordered by the Sierra Nevada Mountains to the east, Coastal Ranges to the west, and the Tehachapi Mountains to the south. These mountain ranges restrict air movement and prevent the dispersal of pollution in the Valley below.

The San Joaquin Valley Air Pollution Control District is comprised of the San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties and the Valley portion of Kern County and has jurisdiction over most air quality matters in the San Joaquin Valley Air Basin (SJVAB). Due to topographic features and the prevalence of agriculture in the region, the San Joaquin Valley Air Basin (SJVAPCD) has one of the most severe air pollution problems in the State of California and the nation. Air pollution is hazardous to health, reduces visibility, degrades or soils materials, and can damage native vegetation. State and national ambient air quality standards were created to protect health and welfare, and to minimize other impacts. The ambient air quality standards are outlined in the Regulatory Setting section.

The SJVAPCD has developed a Guide for Assessing and Mitigating Air Quality Impacts (GAMAQI) to act as an advisory document for addressing air quality in environmental documents. The GAMAQI was used as a guide for addressing air quality impacts in this report.

Air Pollutants of Concern

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards for outdoor concentrations. The federal and state standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons such as children, pregnant women, and the elderly, from illness or discomfort. Criteria air pollutants include ozone (O3), nitrogen dioxide (NO2), carbon monoxide (CO), sulfur dioxide (SO2), particulate matter 2.5 microns or less in diameter (PM2.5), particulate matter ten microns or less in diameter (PM10), and lead (Pb). Note that reactive organic gases (ROGs), which are also known as reactive organic compounds (ROCs) or volatile organic compounds (VOCs), and nitrogen oxide (NOx) are not classified as criteria pollutants. However, ROGs and NOx are widely emitted from land development projects and participate in photochemical reactions in the atmosphere to form O3; therefore, NOx and ROGs are relevant to the proposed Project and are of concern in the air basin and are listed below along with the criteria pollutants. As shown in Table 1, the SJVAB is in nonattainment for several pollutant standards.

Ozone: Ozone is not emitted directly into the environment but is generated from complex chemical reactions between reactive organic gases (ROG), or non-methane hydrocarbons,

and oxides of nitrogen (NOX) that occur in the presence of sunlight. ROG and NOX generators in Tulare County include motor vehicles, recreational boats, other transportation sources, and industrial processes.

PM10: PM10, or particulate matter, is a complex mixture of primary or directly emitted particles, and secondary particles or aerosol droplets formed in the atmosphere by precursor chemicals.

Carbon Monoxide: Carbon Monoxide (CO) is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels. When CO enters the bloodstream, it reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease. Exposure to elevated CO levels can cause impairment of visual perception, manual dexterity, learning ability and performance of complex tasks. The primary source of carbon monoxide is automobile use.

Nitrogen Dioxide: Nitrogen Dioxide (NO2) is a brownish, highly reactive gas that is present in all urban atmospheres. NO2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides are an important precursor both to ozone (O3) and acid rain and may affect both terrestrial and aquatic ecosystems.

The major mechanism for the formation of NO2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO). NO2 plays a key role, together with VOCs, in the atmospheric reactions that produce O3. NO2 forms when fuel is burned at hot temperatures. The two major emission sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur Dioxide: Sulfur Dioxide (SO2) affects breathing and may aggravate existing respiratory and cardiovascular disease in high doses. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children, and the elderly. SO2 is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings, and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large parts of the country. This is especially noticeable in national parks. Ambient SO2 results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp, and paper mills and from nonferrous smelters.

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – One hour	No Federal Standard[f]	Nonattainment/Severe
Ozone – Eight hour	Nonattainment/Extreme[e]	Nonattainment
PM 10	Attainment[c]	Nonattainment
PM 2.5	Nonattainment[d]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified

Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

[a] See 40 CFR Part 81
[b] See CCR Title 17 Sections 60200-60210
[c] On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.
[d] The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).
[e] Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
[f] Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

Table 1. San Joaquin Valley Attainment Status
Source: SJVAPCD

2.2 Ambient Air Quality

Ambient air quality in Tulare can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. Existing levels of ambient air quality and historical trends and projections in the vicinity of Tulare are documented by measurements made by the SJVAPCD, which also maintains air quality monitoring stations which process ambient air quality measurements.

The purpose of the monitoring station is to measure ambient concentrations of pollutants and determine whether ambient air quality meets the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). Ozone and particulate matter (PM10 and PM2.5) are pollutants of particular concern in the SJVAB. The monitoring station located closest to the proposed Project site and most representative of air quality near the proposed Project site is the Visalia – W. Ashland Ave station, located at 2005 West Ashland Avenue, Suite G, which is approximately 8.56 miles north of the Project site. Ambient emission

concentrations vary due to localized variations in emissions sources and climate and should be considered "generally" representative of ambient concentrations near the Project site. Air monitoring data was retrieved from both the W. Ashland Avenue location and the N. Church Street stations to provide data from the years 2021 to 2023. Both air monitoring stations in Tulare monitor ozone and particulate matter (PM 2.5 & PM 10), but the W. Ashland Avenue location also monitors nitrogen dioxide and PM 2.5 speciation in addition to the other pollutants previously mentioned. Refer to Table 2, Tulare – W. Ashland Ave Air Monitoring Station Data for more information.

*Data from Tulare air monitoring stations not available, San Joaquin Air Basin measurements used.

Pollutant	Averaging Time	Item	Standard	2021	2022	2023
Ozone	1 Hour	Max 1 Hour (ppm)	0.09 ppm	0.119	0.114	0.100
		Days > State Standard (0.09 ppm)	--	14	8	3
	8 Hour	Max 8 Hour (ppm)	0.070 ppm	0.099	0.099	0.087
		Days > State Standard (0.070 ppm)	--	52	64	30
		Days > National Standard (0.070 ppm)	--	51	62	27
		Days > National Standard (0.075 ppm)	--	35	26	8
PM 2.5	24-Hour	Max 24 Hour Average Concentration (µg/m³)	--	129.2	48.3	42.9
		Days > National 24-Hour Standard	--	46.6	18.5	6.1
	Annual	Annual average Concentration (µg/m³)	12 µg/m³	16.6	16.1	13.5
PM 10	24-Hour	Max 24 Hour Average Concentration (µg/m³)	50 µg/m³	302.1	125.2	107.5
		Days > State 24-Hour Standard	--	151.7*	171.2*	108.5
		Days > National 24-Hour Standard	--	4.7	3.8*	0
	Annual	Annual Average Concentration (µg/m³)	20 µg/m³	52.8	54.9	39.1

Table 2. W. Ashland Avenue & N. Church Street Air Monitoring Stations Data
Source: California Air Resources Board Air Quality Statistics – iADAM tool

California and National Air Quality Standards has been included in Table 3 below, California and National Ambient Air Quality Standards.

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration[3]	Primary	Secondary
Ozone (03)	1 Hour	0.09 ppm (180 µg/m³)	--	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m³)	0.075 ppm (147 µg/m³)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m3	--	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	--	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	--
	8 Hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	--
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)	--	--

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration[3]	Primary	Secondary
Nitrogen Dioxide (NO_2) [8]	1 Hour	0.18 ppm (339 μg/m³)	100 ppb (188 μg/m³)	--
	Arithmetic Mean	0.030 ppm (57 μg/m³)	53 ppb (100 μg/m³)	Same as Primary Standard
Sulfur Dioxide	1 Hour	0.25 ppm (655 μg/m³)	75 ppb (196 μg/m³)	--
	3 Hour	--	--	0.5 ppm (1300 μg/m³)
	24 Hour	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)	--
	Annual Arithmetic Mean	--	0.030 ppm (for certain areas)	--
Lead[10,11]	30 Day Average	1.5 μg/m³	--	--
	Calendar Quarter	--	1.5 μg/m3 (for certain areas)	Same as Primary Standard
	Rolling 3-Month Average	--	0.15 μg/m³	
Visibility Reducing Particles[12]	8 Hour	See Footnote 1	No National Standards	
Sulfates	24 Hour	25 μg/m³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m³)		
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 μg/m³)		

Table 3. California and National Ambient Air Quality Standards
Source: SJVAPCD

Notes: 1 In 1989, the California Air Resources Board (CARB) converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively. Key: μg/m3 = micrograms per cubic meter; mg/m3 = milligrams per cubic meter; ppm = parts per million Source: CARB 2016c

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial

operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

To date, CARB has designated 244 compounds as TACs. 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 a relatively few compounds. CARB identified diesel particulate matter (DPM) as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particulates and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, lightheadedness, and nausea. DPM poses the greatest health risk among the 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.

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 cardiovascular diseases. Residential areas are considered sensitive receptors to air pollutions 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. Children are considered more susceptible to health effects of air pollution due to their immature immune systems and developing organs. As such, schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. 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.

2.3 Existing Project Site

The existing Project site consists of 19.58 acres of orchards within the City of Tulare, CA. There are no land uses at this site associated with air pollutant and/or odor emissions. As a result, the existing Project site is not a significant source of air pollutants and odors.

2.4 Regulatory Framework

Regional Attainment Status

The state and federal standards for the criteria pollutants are presented in Section 8.4 of The San Joaquin Valley Unified Air Pollution Control District's 2015 "Guidance for Assessing and Mitigating Air Quality Impacts". These standards are designed to protect public health and welfare. The "primary" standards have been established to protect public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soils, water, visibility, materials, vegetation, and other aspects of general welfare. The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005, and the annual PM_{10} standard on September 21, 2006, when a new $PM_{2.5}$ 24-hour standard was established.

The California Environmental Quality Act (CEQA) requires lead agencies to determine if each Project of a certain threshold has an impact on the air quality of the area. The Air Quality standards and Greenhouse Gas guidance measures are used to establish levels of air quality impact of a Project. The following regulatory background represents global, federal, state, and local standards and guidance that have been reviewed in this study.

Federal Clean Air Act: The 1977 Federal Clean Air Act (CAA) authorized the establishment of the National Ambient Air Quality Standards (NAAQS) and set deadlines for their attainment. The Clean Air Act identifies specific emission reduction goals, requires both a demonstration of reasonable further progress and an attainment demonstration, and incorporates more stringent sanctions for failure to meet interim milestones. The U.S. EPA is the federal agency charged with administering the Act and other air quality-related legislation. EPA's principal functions include setting NAAQS; establishing minimum national emission limits for major sources of pollution; and promulgating regulations. Under CAA, the NCCAB is identified as an attainment area for all pollutants.

California Clean Air Act: California Air Resources Board coordinates and oversees both state and federal air pollution control programs in California. As part of this responsibility, the California Air Resources Board monitors existing air quality, establishes California Ambient Air Quality Standards, and limits allowable emissions from vehicular sources. Regulatory authority within established air basins is provided by air pollution control and management districts, which control stationary-source and most categories of area-source emissions and develop regional air quality plans. The Project is located within the jurisdiction of the San Joaquin Valley Air Pollution Control District.

San Joaquin Valley Air Pollution Control District (SJVAPCD): The SJVAPCD is responsible for enforcing air quality standards in the Project area. The following SJVAPCD rules and regulations may apply to the proposed Project:

- **Rule 2010:** Permits Required. The purpose of this rule is to require any person constructing, altering, replacing, or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate. This rule also explains the posting requirements for a Permit to Operate and the illegality of a person willfully altering, defacing, forging, counterfeiting, or falsifying any Permit to Operate.
- **Rule 3135:** Dust Control Plan Fee. All Projects which include construction, demolition, excavation, extraction, and/or other earth moving activities as defined by Regulation VIII (Described below) are required to submit a Dust Control Plan and required fees to mitigate impacts related to dust.
- **Rule 4002:** National Emission Standards for Hazardous Air Pollutants. This rule incorporates the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR) and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR).
- **Rule 4101:** Visible Emissions. District Rule 4101 prohibits visible emissions of air contaminants that are dark in color and/or have the potential to obstruct visibility.
- **Rule 4102:** Nuisance. The purpose of this rule is to protect the health and safety of the public.
- **Rule 4601:** Architectural Coatings. The purpose of this rule is to limit VOC emissions from architectural coatings. This rule specifies architectural coatings storage, cleanup, and labeling requirements.
- **Rule 4641:** Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.
- **Rule 4662:** District Rule 4662 was developed to help reduce emissions of volatile organic compounds (VOC) and hazardous air pollutants produced from degreasing operations, in which an enclosure or device is used for removing dirt, oil, grease and other contaminants.
- **Rule 4663:** District Rule 4663 was developed to limit the emissions of volatile organic compounds (VOCs) from organic solvent cleaning and from the storage and disposal of solvents and waste solvent materials.
- **Rule 9510:** Indirect Source Review (ISR). This rule reduces the impact PM10 and NOX emissions from growth on the SJVB. This rule places application and emission reduction requirements on applicable development Projects in order to reduce emissions through onsite mitigation, offsite SJVAPCD administered Projects, or a combination of the two.

This Project will submit an Air Impact Assessment (AIA) application in accordance with Rule 9510's requirements.

- **Regulation VIII:** Fugitive PM10 Prohibitions. Regulation VIII is composed of eight rules which together aim to limit PM10 emissions by reducing fugitive dust. These rules contain required management practices to limit PM10 emissions during construction, demolition, excavation, extraction, and/or other earth moving activities.

Tulare County Regional Bicycle Transportation Plan: Tulare County Association of Governments' (TCAG) Tulare County Regional Bicycle Transportation Plan from 2010 has influence on internal and access streets to the Project site. In this Bike Plan there is a proposed Class II bike lane that connects the residential neighborhood to the north, to the Project site along South E Street, and ultimately to a separate Class I bike path along the Project's southern edge on West Paige Avenue. The following objectives and corresponding policies relating to this project are as follows:

- **Objective A:** Implement the Bicycle Transportation Plan, which identifies existing and future needs, and provides specific recommendations for facilities and programs over the next four (4) years and beyond
  - **A.2.** Establish and maintain uniform standards so major developments are required to make bicycle improvements as development happens.
  - **A.6.** Encourage Plan adoption by all local jurisdictions within Tulare County.
- **Objective B:** Complete a network of bikeways that is feasible, fundable over the life of the Plan, and that serve bicyclists' needs, especially for travel to employment centers, schools, commercial districts, transit terminals and recreational destinations.
  - **B.1.** Encourage jurisdictions to develop a bicycle network that connects neighborhoods, cities and communities.
  - **B.4.** Coordinate with local jurisdictions and developers in Tulare County to ensure appropriate opportunities for bicycle connections are planned, constructed, and maintained.
- **Objective E:** Increase Bicycle Ridership in Tulare County
  - **E.2.** Include bicycle facilities as an integral part of future developments across Tulare County and connect to other existing and proposed bicycle facilities.
  - **E.4.** Provide convenient bicycle access and bicycle parking at schools, parks, neighborhoods, shopping centers, government buildings, and local businesses.

2.5 Thresholds and Methodology

Thresholds of Significance

The impact analysis provided in Chapter 2.6 is based on the application of the following California Environmental Quality Act (CEQA) Guidelines Appendix G, which indicates that a project would have a significant impact on air quality if it would:

1. *Conflict with or obstruct implementation of any applicable air quality plan.*

2. *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.*
3. *Expose sensitive receptors to substantial pollutant concentrations.*
4. *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.*

The significance criteria established by the applicable air quality management or air pollution control district (SJVAPCD) may be relied upon to make the above determinations. According to the SJVAPCD, an air quality impact is considered significant if the proposed Project would violate any ambient air quality thresholds, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SJVAPCD has established thresholds of significance for air quality for construction and operational activities of land use development projects, which is shown in Table 4. – SJVAPCD Thresholds of Significance for Criteria Pollutants.

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Table 4. Thresholds of Significance for Criteria Pollutants
Source: SJVAPCD

SJVAPCD has also established the following thresholds of significance for risk exposure to toxic air contaminants to nearby sensitive receptors to the Project site, shown below in Table 5.

Carcinogens	Maximally Exposed Individual risk equals or exceeds 20 in one million
Non-Carcinogens	**Acute**: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Table 5. Thresholds of Significance for Toxic Air Contaminants (TAC's)
Source: SJVAPCD

CO Hotspot Analysis

In addition to the daily thresholds listed above, the proposed Project area would also be subject to the ambient air quality standards, through an analysis of localized CO impacts. The California 1-hour and 8-hour CO standards are:

- 1-hour = 20 parts per million (ppm)
- 8-hour = 9 parts per million (ppm)

The significance of localized impacts depends on whether ambient CO levels in the vicinity of the Project site are above state and federal standards for carbon monoxide. Carbon monoxide concentrations in the San Joaquin Air Basin currently meets the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO).

Methodology

Air pollution emissions can be estimated by using emission factors and examining the level of activity occurring. Emission factors are the emission rate of a pollutant given the activity over time; for example, grams of NOx per horsepower hour. The ARB has published emission factors for on-road equipment and vehicles in the OFFROAD emission model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator (CalEEMod), Version 2022.1.1, is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutants and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use Projects. The model quantifies direct emissions from construction and operations, including vehicle use, as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The model incorporates Pavley standards and Low Carbon Fuel standards into the mobile source emission factors. Further, the model identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user. The CalEEMod model was run based off of the following land use assumption:

- Single Family Housing: 120 dwelling units (D.U.s), 19.58 Acres
- City Park: 0.85 acres, 5.37 acres landscaped

CalEEMod default values were used to estimate construction trips, trip lengths, emission factors for construction equipment, trips and VMT, architectural coatings, area sources, water and wastewater, and solid waste generation. In order to account for recent changes to new residential building standards (2022 update to Title 24, Part 6 of the California Code of Regulations), no natural gas usage is expected for the proposed Project. This update mandates

that new homes constructed from 2023 onward must be equipped with electric systems capable of supporting all-electric appliances. Therefore, the Project will not be connected to natural gas, and the provided default energy use from natural gas was converted to an equivalent kilowatt-hours and added to the predicted electricity use provided in the model to account for the energy that would have been provided by natural gas. Electricity to the Project Site will be provided by Southern California Edison. Other non-defaults included locational context, Project-specific construction equipment and schedule, the exclusion of gas, propane, and electric fireplaces, and wood stoves, and the use of the SJVAPCD district-accepted operational fleet mix for residential projects.

The full CalEEMod Report for the Fernandes Property can be found in Attachment C.

2.6 Project Impacts

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant. The SJVAPCD drafted a series of State Implementation Plans (SIP) for the criteria pollutants that are of concern for the San Joaquin Valley Air Basin. The integration of multiple SIPs for each criteria pollutant collectively form the air quality plan for the San Joaquin Valley Air Basin. The most recent SIP is the "2024 Plan for the 2012 PM 2.5 Standard", which focuses on meeting the annual PM 2.5 standard of 12 micrograms/cubic meters originally set in 2012. This SIP includes measures to reduce fine particulate matter emissions and improve air quality by the year 2030. The SJVAPCD has established thresholds in the adopted SIPs and other air quality plans prepared by the Air District. These thresholds are depicted in Tables 6 and 7 for construction and operation. Criteria for determining consistency with the established standards are whether or not the Project's estimated emissions exceed those thresholds established by the Air District. As long as the Project construction and operational emissions do not exceed the thresholds, the Project will not result in new air violations, delay the timely attainment of air quality standards, or result in increased severity of an existing air quality violation.

Short-Term Emissions

Project construction would generate pollutant emissions from the following construction activities: site preparation, grading, building construction, application of architectural coatings, and paving. The short-term emissions from these activities were calculated using CalEEMod Version 2022.1.1. The full CalEEMod Report can be found in Attachment C, respectively. As shown in Table 6 below, Project construction related emissions do not exceed the thresholds for criteria pollutants established by the SJVAPCD.

Construction Phase Modeling Parameters

Construction schedule assumptions and lot sizes were based on the approved site plan for the Project and the standards set forth in the City of Tulare Municipal Code and General Plan. Default values provided in CalEEMod were used where detailed Project information was not available. The construction phases for the Project included site preparation, grading, building construction, paving and architectural coating. Total construction is expected to occur over the span of 1 year (2026-2027). Project-specific values were used for off-road equipment estimations and construction schedule. Default values were used for construction vehicle trips/VMT, VOC content of architectural coatings, and electricity emission factors.

Construction Emissions

Implementation of the Project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind and the direct disturbance and movement of soil, leading to PM10 and PM2.5 emissions. The Project would implement various dust control strategies and would be required to comply with SJVAPCD Regulation VIII to control dust emissions generated during grading activities. Proposed construction practices to reduce fugitive dust emissions include watering active sites and unpaved roads two times per day, depending on weather conditions.

Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of ROGs, NOx, CO, PM10, and PM2.5. The Health Risk Assessment (HRA) conducted by Core Environmental Consulting determined that the diesel particulate matter (DPM) emissions generated during construction would not exceed SJVAPCD thresholds of significance without requiring additional mitigation. Compliance with applicable regulatory requirements, including SJVAPCD Regulation VIII and best management practices, would ensure that health risks associated with DPM emissions remain *less than significant.*

The application of architectural coatings, such as exterior application/interior paint and other finishes, and of asphalt pavement would also produce ROG emissions. Pursuant to Regulation VIII, Rule 8021, Section 6.3, the Project would be required to develop, prepare, submit, obtain approval of, and implement a dust control plan, which would reduce fugitive dust impacts to less than significant for Project construction.

Table 6 presents the estimated emissions generated during construction of the Project. The full CalEEMod estimates can be found in Attachment C of this report.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	NOx (tpy)	PM10 (tpy)	PM2.5 (tpy)
Emissions Generated from Project Construction	**1.62**	**.05**	**<0.005**	**0.34**	**0.11**	**0.04**

SJVAPCD Thresholds of Significance	**100**	**10**	**27**	**10**	**15**	**15**
*Threshold established by SJVAPCD for SOx, however emissions are reported as SO2 by CalEEMod.						

Table 6. Projected Construction Emissions Compared to SJVAPCD Thresholds of Significance
Sources: CalEEMod Outputs; SJVAPCD

Long-Term Emissions

Implementation of the proposed Project would result in long-term emissions associated with mobile, energy, and area sources. Operational emissions from these factors were calculated using CalEEMod. The full CalEEMod Report can be found in Attachment C of this report.

Operational Phase Modeling Parameters

CalEEMod default vehicle trips were used to model residential vehicle trip rates and lengths during the operational phase. For area sources of emissions under the operational phase, default values were used for all inputs except for the "Hearths", "Energy", "Fleet Mix" sections. Under the "Hearths" section, all values for woodstoves, gas powered fireplaces, electric fireplaces, propane-powered fireplaces, wood-powered fireplaces were set to zero. The proposed Project will not be connected to any natural gas source. As a result, electricity consumption was adjusted to account for the energy that would have been provided by natural gas by converting the natural gas energy use to kilowatt-hours and adding it to the projected electricity consumption provided by CalEEMod. For the "Fleet Mix", the values used were derived from the SJVAPCD District Accepted Fleet Mix for Residential Projects. For the remaining sections, including Water, Waste, Refrigerants, operational Off-Road Equipment, and Stationary Sources, default values were used, or the section(s) were set to zero.

Operational Emissions

The Project would involve the construction of 120- low-density residential homes. Operation of the Project would generate ROG, NOx, CO, SOx, PM10, and PM2.5 emissions from mobile sources, including vehicle trips from passenger vehicles; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment; and energy sources, including the use of electric-powered space and water heating. As discussed previously, pollutant emissions associated with long-term operations were quantified using CalEEMod for area, energy, and mobile sources, and were primarily based on CalEEMod default values. Project-generated mobile source emissions were based on the default trip rates provided by CalEEMod. Details of the emissions estimates are provided in Attachment C.

As shown in Table 7 below, the Project's operational emissions do not exceed the thresholds established by the SJVAPCD.

	CO (tpy)	ROG (tpy)	SOx (tpy)*	NOx (tpy)	PM10 (tpy)	PM2.5 (tpy)
CalEEMod Mitigation Measures Not Included						
Emissions Generated from Project Operation	**6.23**	**1.62**	**.01**	**0.68**	**1.24**	**0.32**
SJVAPCD Thresholds of Significance	**100**	**10**	**27**	**10**	**15**	**15**
*Threshold established by SJVAPCD for SOx, however, emissions are reported as SO2 by CalEEMod.						

Table 7. Projected Operational Emissions Compared to SJVAPCD Thresholds of Significance
Sources: SJVAPCD, CalEEMod Analysis (Attachment C)

As shown in Tables 6 and 7, Project construction and operational emissions would not exceed the SJVAPCD thresholds of significance. Since the Project is not anticipated to exceed any SJVAPCD thresholds of significance, the Project will not conflict with or delay the implementation of the SJVAPCD attainment/implementation plans for criteria pollutants. The impacts resulting from CEQA Thresholds a and b would remain *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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

Less than Significant. The SJVAPCD is responsible for bringing air quality in the Tulare Planning Area into compliance with federal and state air quality standards. The significance thresholds and rules developed by the SJVAPCD are designed to prevent Projects from violating air quality standards or significantly contributing to existing air quality violations. As discussed above, neither construction-related emissions nor operation-related emissions will exceed thresholds established by the SJVAPCD. The Project will comply with all applicable SJVAPCD rules and regulations, which will further reduce the potential for any significant impacts related to air quality as a result of Project implementation. Because these thresholds and regulations are designed to achieve and/or maintain federal and state air quality standards, and the Project is compliant with these thresholds and regulations, the Project will not violate an air quality standard or significantly contribute to an existing air quality violation. The impact is *less than significant.*

c) *Expose sensitive receptors to substantial pollutant concentrations?*

Less than Significant Impact: This discussion is partially based on the Health Risk Assessment (HRA) prepared by Core Environmental Consulting, which can be found in Attachment D.

Potential to Impact Sensitive Receptors

Construction Phase. Sensitive receptors are those populations more vulnerable to air pollution, including children, the elderly, and individuals with pre-existing health conditions. The nearest sensitive receptors to the Fernandes Subdivision Project are single-family residences located approximately 120 meters northwest of the project site. Core Environmental Consulting identified 131 residential and worker receptors in proximity to the site.

During construction, diesel particulate matter (DPM), a toxic air contaminant, will be generated by heavy-duty equipment and vehicles. However, the length of exposure is a key factor in determining potential health impacts. Core Environmental Consulting conducted an HRA using CalEEMod, the EPA's American Meteorological Society/EPA Regulatory Model (AERMOD) for air dispersion modeling, and the CARB Hotspots Analysis and Reporting Program (HARP2) Air Dispersion Modeling and Risk Tool (ADMRT) to estimate health risks. The results are shown in Table 8 below.

Risk	Carcinogen (max risk in one million)	Chronic Hazard Index
Construction	**2.39**	**0.0014**
SJVAPCD Thresholds of Significance	**20**	**1**
**Calculation based on mitigated emissions. See Appendix E.*		

Table 8. HRA Results Compared to SJVAPCD Thresholds of Significance
Sources: SJVAPCD, Core Environmental HRA (Attachement D)

As shown in Table 8, the health risks from construction activities do not exceed the SJVAPCD thresholds of significance for carcinogenic or non-carcinogenic risk. Therefore, the Fernandes Subdivision Project would not expose sensitive receptors to substantial pollutant concentrations, and impacts are considered less than significant under CEQA. No additional mitigation measures are required beyond those incorporated into the project's air quality analysis.

Operational Phase. Once constructed, the subdivision will not generate substantial sources of toxic air contaminants, including diesel particulate matter. While residential activities may involve emissions from household cleaners, paints, landscaping equipment, and vehicle use, these sources are localized, intermittent, and regulated by existing federal, state, and local laws. Compliance with these regulations ensures that operational impacts remain less than significant.

The Fernandes Subdivision Project will generate emissions during construction, but modeled exposure levels are below SJVAPCD thresholds of significance. With no additional mitigation required, the project would not expose sensitive receptors to substantial pollutant concentrations, 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. Some typical construction-related odors would be generated during Project construction. As mentioned in Threshold C, the Project is adjacent to sensitive receptors to the north and west, which may be temporarily affected by such odors. The eastern and southern portions of the Project site is separated by large parcels of agricultural land, with a few industrial facilities located throughout. Due to this, odors will likely not impact a substantial number of people. Additionally, the proposed Project would not include any odor sources identified in Table 6 of the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) and no health risks associated with such odors were identified in the HRA done by Core Environmental.

The Project may create objectionable odors, but the odors would be temporary and would not affect a substantial number of people during construction. The operational phase is solely residential development, so there are no objectionable odors that would result from this phase of the Project. The impact is *less than significant.*

Section 3 – Greenhouse Gas Emissions

3.1 Greenhouse Gas Setting

Climate Change is a change in the average weather of the earth that may be measured by alterations in wind patterns, storms, precipitation, and temperatures. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level a statistical significance, specifically focusing on temperature records from the last 150 years, the Industrial Age, which differ from previous climate changes in rate and magnitude. The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHG needed to stabilize global temperatures and climate change impacts. The IPCC predicted that global mean temperatures change from 1990 to 2100, given six scenarios, could range from 1.1 degree Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007). In California, climate change may result in consequences such as the following form (CCCC 2006 and Moser et al. 2009).

1. A reduction in the quality and supply of water to the State from the Sierra snowpack.
2. Increased risk of large wildfires.
3. Reduction in the quality and quantity of certain agriculture products.
4. Exacerbation of air quality problems.
5. A rise in sea levels resulting in the displacement of coastal businesses and residences.
6. Damage to marine ecosystems and their natural environment.
7. An increase in infections, disease, asthma, and other health-related problems.
8. A decrease in the health and productivity of California's forest. (CCCC 2006 and Moser et al. 2009)

Greenhouse Gases (GHG) are gases that trap heat in the atmosphere and the presence of GHGs in the atmosphere affects the earth's temperature. The effect is equivalent to the way a greenhouse retains heat. Natural processes and human activities emit greenhouse gases. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbons, hydro chlorofluorocarbons, hydro fluorocarbons, per fluorocarbons, sulfur, and hexafluoride. Human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. Some greenhouse gases can remain in the atmosphere for over hundreds of years. Some GHGs have a greater impact on climate change than others. In order to accurately compare GHG emissions, a Global Warming Potential (GWP) has been calculated for each greenhouse gas based on how long it remains in the atmosphere, on average, and how strongly it absorbs energy. Gases with a higher GWP absorb more energy, per pound, than gases with a lower GWP, and thus contribute more to global warming. For example, one pound of methane is equivalent to twenty-one pounds of carbon dioxide.

In regard to the quantity of these gases in the atmosphere, we first must establish the amount of particular gas in the air, known as Concentration, or abundance, which are measured in parts per million, parts per billion and even parts per trillion. To put this measurement in more relatable terms, one part per million is equivalent to one drop of water diluted into about thirteen gallons of water, roughly a full tank of gas in a compact car. Therefore, it can be assumed larger emission of greenhouse gases lead to a higher concentration in the atmosphere. GHGs as defined by AB 32 include the following gases: carbon dioxide, methane, nitrous oxide, hydrocarbons, perfluorocarbons, and sulfur hexafluoride. GHGs as defined by AB 32 and sources are summarized in Table 9.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Methane (CH4)	Is a flammable gas and is the main component of natural gas	12 years	21	Emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
Carbon dioxide (CO2)	An odorless, colorless, natural greenhouse gas.	30-95 years	1	Enters the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
Chloro-fluorocarbons	Gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are non-toxic nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).	55-140 years	3,800 to 8,100	Were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Hydrofluoro-carbons	A man-made greenhouse gas. It was developed to replace ozone-depleting gases found in a variety of appliances. Composed of a group of greenhouse gases containing carbon, chlorine an at least one hydrogen atom.	14 years	140 to 11,700	Powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases.
Nitrous oxide (N2O)	Commonly known as laughing gas, is a chemical compound with the formula N2O. It is an oxide of nitrogen. At room temperature, it is a colorless, non-flammable gas, with a slightly sweet odor and taste. It is used in surgery and dentistry for its anesthetic and analgesic effects.	120 years	310	Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
Pre-fluorocarbons	Has a stable molecular structure and only breaks down by ultraviolet rays about 60 kilometers above Earth's surface.	50,000 years	6,500 to 9,200	Two main sources of pre-fluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	An inorganic, odorless, colorless, and nontoxic nonflammable gas.	3,200 years	23,900	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing and as a tracer gas.

Table 9. Greenhouse Gases

Source: *EPA, Intergovernmental Panel on Climate Change*

Each of the designated gases described above can reside in the atmosphere for different amounts of time, ranging from a few years to thousands of years. All of these gases remain in the atmosphere long enough to become well mixed, meaning that the amount that is measured in the atmosphere is roughly the same all over the world regardless of the source of the emission.

3.2 Existing Project Site

The existing Project site is under agricultural use with 19.58 acres of orchards, one single family dwelling, and private dirt roads. Orchards typically have a job density of around 0.1 to 0.3 jobs per acre (Southern California Association of Governments 2001). Therefore, the original land use on the site likely employed 6 individuals, which would have resulted in approximately 12 vehicle trips a day. Due to the nature of the current land use, the existing Project site emits a very small amount of GHG emissions, and the proposed Project would result in an increase in overall GHG emissions.

3.3 Regulatory Framework

Climate changes is a global, national, state, and local issue involving greenhouse gas emissions from all around the world; therefore, countries around the world, including the United States, have established regulations to assist in the emissions of GHGs. Tables 10 through 13 give a brief explanation of international, national, state, and local regulations.

Regulation	Adopted	Protocol
Intergovernmental Panel on Climate Change	1998	The United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economical information relevant to understanding the scientific basis of risk of human-induced climate change and its potential impacts.
United Nations Framework Convention on Climate Change	March 21, 1994	Governments gather and share information on GHG emissions, national polices and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts.
Kyoto Protocol	Adopted: December 1, 1997 Entered into Force: February 16, 2005	Sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at an average of 5% against 1990 levels over the five-year period of 2008-2012
Paris Climate Agreement	Adopted: December 12, 2015 Entered into Force: November 4 2016	The Paris Climate Agreement is an agreement within the United UNFCCC to limit global temperature rise to 2 degrees Celsius above preindustrial levels. Under the agreement, each country determines, plans, and regularly reports its own contribution to mitigate global warming. The agreement is voluntary and is not legally binding.

Table 10. International Greenhouse Gas Regulations

Regulation	Adopted	Protocol
Greenhouse Gas Endangerment	December 7, 2009	The EPA Administrator signed two distinct findings regarding GHG emissions under section 2029(a) of the Clean Air Act. 1. Endangerment Finding: The Administrator finds that the current and Projected concentrations of the six key well-mixed greenhouse gases — carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6) 2. Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.
Corporate Average Fuel Economy (CAFE)	Adopted: 1975 Revised: July 29, 2011	An agreement between thirteen large automakers (accounting for 90% of all vehicles sold in the United States), the United Auto Workers, and the State of California to increase fuel economy to 54.5 miles per gallon for cars and light-duty trucks by model year 2025.
Greenhouse Gas Reporting Program	September 22, 2009	Requires reporting of GHG emissions from large sources and suppliers in the United States. Any facility that emits 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.
New Source Review	May 13, 2013	Tailors the requirements of the Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits.
Standards of Performance for GHG Emissions for New Stationary Sources: Electrical Utility Generating Units	March 27, 2012	The EPA proposed new performance standards for emissions of carbon dioxide for new affected fossil fuel-fired electrical utility generated units. New sources greater than 25 megawatts would be required to meet an output-based standard of 1,000 pound of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology
Western Climate Initiative Partner	*Yet to be formally adopted*	Jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Its cap-and-trade program is estimated to be fully implemented by 2012

Table 11. Federal Greenhouse Gas Regulations

Regulation	Adopted	Protocol
Title 24	Adopted: 1978 2008 Standards Effective: January 1, 2010	California's Energy Efficiency Standards for Residential and Non-Residential Buildings. Their standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods
California Green Building Standards	January 12, 2010	A comprehensive and uniform regulatory code for all residential, commercial and K-14 school buildings.
Pavley Regulations, AB 1493	July 22, 2002	Reduce GHG emissions in new passenger vehicles from 2009 through 2016. These amendments are part of California's commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. ARB's September amendments will cement California's enforcement of the Pavley rule starting in 2009 while providing vehicle manufacturers with new compliance flexibility.
Low Carbon Fuel Standard- Executive Order S-01-07	January 18, 2007	Calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. It instructed the California Environmental Protection Agency to develop and propose a draft compliance schedule to meet the 2020 target.
SB 1368	2006	The law limits long-term investments in base load generation by the state's utilities to power plants that meet an emissions performance standard (EPS).
SB 97	February 16, 2010	The Natural Resources Agency adopted Amendments to the CEQA Guidelines for greenhouse gas emissions.
AB 32	2006	Set the 2020 greenhouse gas emissions reduction goal into law. It directed the California Air Resources Board to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit. The reduction measures to meet the 2020 target are to be adopted by the start of 2011.
SB 375	August 30, 2008	Enhances California's ability to reach its AB 32 goals by promoting good planning with the goal of more sustainable communities. Sustainable Communities requires ARB to develop regional greenhouse gas emission reduction targets for passenger vehicles. ARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations
Executive Order S-13-08	2009	A comprehensive "Climate Adaptation Strategy" that would identify the state's vulnerabilities and plan accordingly. State agencies will take this report into account, due in December 2010, when planning new infrastructure such as roads, bridges, and water treatment facilities. The executive order noted that the country's longest continuously operating sea level gauge, San Francisco Bay's Fort Point, recorded a seven-inch rise in sea level over the 20th century.

SB 1078, SB 107, and Executive Order S-14-08	September 12, 2002	Requires California to generate 20% of its electricity from renewable energy by 2017. SB 107 then changes the 2017 deadline to 2010. Executive Order S-14-08 required that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020.
CEQA Guidelines Update	Adopted: April 13, 2009 Updated: May 2011	These Thresholds are designed to establish the level at which the District believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on the Air District's website and included in the Air District's updated CEQA Guidelines
Executive Order B-30-15	April 20, 2015	Establishes a California GHG reduction target of 40 percent below 1990 levels by 2030.
AB 398	July 17, 2017	Extended the California Cap and Trade program through 2030.

Table 12. State Greenhouse Gas Regulations

Regulation	Adopted	Protocol
San Joaquin Valley Air Pollution Control District		The San Joaquin Valley Air Pollution Control District is made up of eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern. The Valley Air District is governed by a Governing Board consisting of representatives from the Board of Supervisors of all eight counties, one Health and Science member, one Physician, and five Valley city representatives.
SJVAPCD CEQA Greenhouse Gas Guidance	December 2009	The SJVAPCD approach is intended to streamline the process of determining if Project specific GHG emissions would have a significant effect. Best Performance Standards would be established according to performance-based determinations.
San Joaquin Valley Carbon Exchange	November 2008	Intended to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley
Rule 2301	January 19, 2012	Emission Reduction Credit Banking. Provided an administrative mechanism for sources to bank GHG emissions, mechanism for sources to transfer GHG reductions to other users and defines eligibility standards, quantitative and procedures.

Table 13. Regional Greenhouse Gas Regulations

3.4 Thresholds and Methodology

The impact analysis provided in Chapter 2.6 is based on the application of the following California Environmental Quality Act (CEQA) Guidelines Appendix G, which indicates that a project would have a significant impact on greenhouse gas emissions if it would:

1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.*
2. *Conflict with an applicable plan, policy or regulations adopted for the purpose of reducing the emissions of greenhouse gas emissions.*

GHG emissions and climate change were evaluated in accordance with Appendix G of the 2024 CEQA Guidelines. CEQA Guidelines Section 15064.4 states that, when making a determination with respect to the significance of a project's GHG emissions, a lead agency shall have discretion to determine whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use; and/or (2) Rely on a qualitative analysis or performance-based standards. Section 15064.4 also states that a lead agency should consider the following factors when assessing the significance of the impact of GHG emissions on the environment: (1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting; (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

GHG emissions were calculated in the same CalEEMod model used to determine the proposed project's criteria air pollutant emissions. Consistent with SJVAPCD recommendations, construction emissions were amortized over a thirty-year period and added to the annual operational emissions to determine the proposed Project's annual GHG emissions. Consistent with CEQA Guidelines Section 15064(h)(3), project significance was determined based on the proposed Project's consistency with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the proposed Project. CARB's 2017 Scoping Plan applies to the proposed Project and are intended to reduce GHG emissions to meet the statewide targets set in Senate Bill (SB) 32. The project efficiency threshold of 6.7 MT CO2e.yr/capita was derived from the CARB Scoping Plan and used to determine the Project's potential impact on greenhouse gas emissions. Thus, the proposed Project would not have a significant effect on the environment if it were found to be consistent with CARB's 2017 Scoping Plan efficiency metric.

3.5 Project Impacts

a) ***Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.***

Less than Significant.

Construction. Greenhouse gases would be generated during construction from activities including site preparation, grading, building construction, application of architectural coatings, and paving. The CalEEMod Emissions report predicts that this Project will create a maximum of 288 MT of CO2e emissions per year during construction. Because the SJVAPCD does not have numeric thresholds for assessing the significance of construction related GHG emissions, predicted emissions from Project construction were compared to SJVAPCD thresholds for construction related GHG emissions. The SJVAPCD currently has a threshold

of 10,000 metric tons of CO2e per year for construction emissions amortized over a 30-year Project lifetime. Because Project construction would generate less GHG emissions than this threshold, impacts related to GHG emissions during Project construction would be less than significant.

Operation. The proposed Project would have the following operational greenhouse gas emissions:

- CO2: 1,330 metric tons per year
- CH4: 1.32 metric tons per year
- N2O: 0.07 metric tons per year
- CO2e: 1,385 metric tons per year (combined CO2, CH4, and N2O emissions w/ some margin of error due to rounding differences and addition of Global Warming Potential)

The SJVAPCD has not formally provided guidance on how to analyze GHG emissions impacts for projects within their San Joaquin Valley Air Basin (SJVAB). Until such time as SJVAPCD provides formal guidance, the following alternative metrics used by air districts in California to assess GHG emissions impacts have been identified:

Bright-Line Numeric Threshold: The bright-line significance threshold is a numeric, mass emissions threshold. In general, the bright-line threshold identifies the point at which additional analysis of project-related GHG emissions impacts is necessary. Projects below the established bright-line significance criteria have a de minimis contribution to the local, regional, and/or statewide GHG emissions inventory and have less than significant impacts. Projects above this threshold may result in a substantial increase in GHG emissions.

The bright-line threshold is based on the methodology identified in the 2016 AEP white paper (Walter et al., 2016). It is a market capture approach, reflecting the amount of emissions that 90 percent of development projects surveyed in four cities within California would generate. CAPCOA identified that a bright-line threshold set at 900 metric tons of CO2e per year would capture 90 percent of projects. In general, 900 metric tons of CO2e per year corresponds to (1) a residential development of 50 dwelling units; (2) 35,000 square feet of office space; (3) 11,000 square feet of retail space; and (4) 6,300 square feet of supermarket space. The 900 metric tons of CO2e per year is used as it is the most conservative bright line threshold. Exceeding the bright-line significance criterion does not necessarily indicate that the project generates a significant unavoidable impact. Consistent with how the bright-line threshold is applied in other air districts, this analysis utilizes the bright-line thresholds as a screening criterion to identify whether a full analysis of GHG emissions is warranted. If the project exceeds the screening threshold, the second level of analysis will compare the project to the efficiency metric discussed below.

Efficiency-Based Threshold for Residential Projects: The efficiency metric identified by some air districts in California in the absence of a county-wide GHG reduction plan is derived from CARB's Scoping Plan. Residential projects that are over the bright line threshold would not be considered significant if their overall GHG efficiency is less than 6.7 MT CO2e/yr/capita. However, it is noted that this threshold is based, in part, on the GHG reducing target established for the year 2020 under AB 32, but the Project would be implemented after the year 2020. Statewide goals for GHG reductions in the years beyond 2020 were codified into state law with the passage of SB 32, which as described previously mandates that California achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. This equates to 40 percent below the statewide GHG reduction target for the year 2020. Therefore, a 40% reduction would be: 6.7 MT CO2e/yr/capita x 60% = 4.02 MT CO2e/yr/capita.

For this Project: The average household size in the City of Tulare is 3.32 persons (US Census Bureau 2024). The Project consists of up to 120 units, leading to an estimated population of:

120 units × 3.32 persons/household = 399 people

Using the efficiency-based threshold, the allowable emissions for this residential Project would be:

399 people × 4.02 MT CO2.yr/capita = 1604 metric tons of CO2e per year.

The total operational GHG emissions amount to 1,385 metric tons of CO2e per year. Since the Project's emissions are below the efficiency-based threshold for residential projects (1,604 metric tons of CO2e per year), the Project's operational GHG emissions are considered *less than significant.*

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

Less than Significant. The Project will be consistent with all applicable plans, policies, and regulations, particularly the Climate Action Plan, which is included as part of the City of Tulare General Plan. Table 14 below demonstrates the consistency of the Project with all the applicable policies and goals of the City of Tulare General Plan & Climate Action Plan.

CAP Policies	Project Consistency
Energy Systems	
Energy Efficiency in New Development: *Increase energy efficiency in new commercial and residential development*	*Consistent.* The proposed Project will not utilize natural gas during its operational phase. Additionally, this Project plans to

and require new residential and commercial development to achieve enhanced energy efficiency and exceed California Energy Code requirements by 15%.	adhere to all energy conservation codes by implementing passive heating and cooling opportunities in subdivision design.
Renewable Energy For Residents: *Increase reliance on local renewable energy sources through provision of a minimum of 15% of baseline residential energy needs from on-site renewable energy sources by 2030.*	*Consistent.* The Project buildings would be designed with solar panels and would be compliant with Title 24 requirements for building efficiency.
Waste & Resource Conservation	
Reduce Water Usage and Energy consumed for groundwater pumping: *Amend the City's Building Code and other codes appropriate to require water efficiency standards in new residential and nonresidential development as established by mandatory and Tier 1 CALGreen measures.*	*Consistent.* The proposed low-density residential development will comply with the Water Conservation Ordinance of the City of Tulare as to not waste water and conserve energy used to pump groundwater for community use. Additionally, landscaping on the site will comply with the City of Tulare's Water Efficient Landscape Ordinance (CHAPTER 10.196: LANDSCAPING).

Table 14. Consistency Analysis with the Tulare Climate Action Plan

The Project would not generate a cumulatively considerable GHG impact, nor would it conflict with any applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions. The impact is *less than significant.*

Section 4 – Energy

4.1 Energy Setting

Electricity

According to the U.S. Energy Information Administration, California used approximately 255,224 gigawatt hours of electricity in 2018 (EIA 2024a). By sector in 2017, commercial uses utilized 46% of the state's electricity, followed by 35% for residential uses and 19% for industrial uses (EIA 2024a). Electricity usage in California for different land uses varies substantially by the types of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA 2024b).

Southern California Edison (SCE) provides electricity to the Project. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across central and Southern California. SCE receives electric power from a variety of sources. According to the 2022 SCE Power Content Label, renewable energy accounts for 33.2% of the overall energy resources, with geothermal resources at 5.7%, wind power at 9.8%, eligible hydroelectric sources at 0.5% and solar energy at 17% (SCE 2022).

Natural Gas

According to the U.S. Energy Information Administration, California used approximately 2,154,030 million cubic feet of natural gas in 2019 (EIA 2024a). Natural gas is used for cooking, space heating, generating electricity, and as an alternative transportation fuel. The majority of California's natural gas customers are residential and small commercial customers (core customers), which accounted for approximately 35% of the natural gas delivered by California utilities in 2018 (CPUC n.d.). Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 65% of the natural gas delivered by California utilities (CPUC n.d.). The CPUC regulates California natural gas rates and natural gas services, including in-state transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. Biogas (e.g., from wastewater treatment facilities or dairy farms) is just beginning to be delivered into the gas utility pipeline systems, and the state has been encouraging its development (CPUC n.d.). In 2019, PG&E delivered approximately 4.9 billion therms of natural gas to the region, with 3 billion therms for non-residential use and 1.9 billion therms for residential use (CEC 2020a, 2020b). No natural gas usage is proposed during the operational phase of the Fernandes Property development.

Petroleum

According to the U.S. Energy Information Administration, California used approximately 681 million barrels of petroleum in 2018, with the majority (584 million barrels) used for the transportation sector (EIA 2024b). This total annual consumption equates to a daily use of approximately 1.9 million barrels of petroleum. There are 42 U.S. gallons in a barrel, so California consumes approximately 78.4 million gallons of petroleum per day, adding up to an annual consumption of 28.7 billion gallons of petroleum. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described in Section 4.6.2, below. As such, the CEC anticipates an overall decrease of gasoline demand in the state over the next decade (CEC 2018).

4.2 Existing Project Site

The entire 19.58-acre Project site is currently under agricultural use and is occupied by orchards and private dirt access roads. The current land use of the site is associated with little to no GHG emissions and low energy use. Energy use associated agricultural operations results from tractors, spraying, and harvesting machinery, transportation, and irrigation equipment. The proposed Project would involve the removal of the existing orchards and the installation of 120 single-family homes and a .85-acre City Park.

4.3 Regulatory Framework

Federal

Federal Energy Policy and Conservation Act: In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). In 2020, the Trump Administration sought to lower CAFE standards issued by the Obama Administration to require, for example, a fleet average of 40 mpg by 2026 instead of 55 mpg by 2025. On April 1, 2022, the Department of Transportation updated CAFE standard back up near Obama Administration levels, with a new fleet average of 49 mpg by 2026. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Energy Independence and Security Act of 2007: On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased corporate average fuel economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and lighting efficiency standards (Sections 301–325)
- Building energy efficiency (Sections 411–441)

The RFS requires ever-increasing levels of renewable fuels to replace petroleum (EPA 2024). The U.S. Environmental Protection Agency (EPA) is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the Energy Policy Act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of greenhouse gas (GHG) emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of our nation's renewable fuels sector. The updated program (RFS2) includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel and set separate volume requirements for each one.
- EISA required the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

State

Warren–Alquist Act: The California Legislature passed the Warren–Alquist Act in 1974, which created the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for buildings constructed and appliances sold in California.

- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan: The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure the provision of adequate, reliable, and reasonably priced electrical power and natural gas supplies; it also identified cost-effective and environmentally sound energy policies, strategies, and actions for California's consumers and taxpayers. In 2005, the CEC and CPUC adopted a second Energy Action Plan to reflect various policy changes and actions of the prior 2 years. At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an "update" that examines the state's ongoing actions in the context of global climate change.

Assembly Bill 32 (2006) and Senate Bill 32 (2016): In 2006, the State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted Senate Bill (SB) 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, the California Air Resources Board (CARB) prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focus on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources.

California Building Standards: Part 6 of Title 24 of the California Code of Regulations (CCR) was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and nonresidential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The current Title 24, Part 6 standards, referred to as the 2019 Title 24 Building Energy Efficiency Standards, became effective on January 1, 2020. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards use approximately 53% less energy than those under the 2016 standards (CEC 2019).

Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2019). Title 24 also includes Part 11, the California Green Building Standards (CALGreen). CALGreen establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The 2019 CALGreen standards are the current applicable standards. For nonresidential projects, some of the key mandatory CALGreen 2019 standards involve requirements related to bicycle parking, designated parking for clean air vehicles, electric vehicle charging stations, shade trees, water conserving plumbing fixtures and fittings, outdoor potable water use in landscaped areas, recycled water supply systems, construction waste management, and excavated soil and land clearing debris (24 CCR Part 11).

Local

City of Tulare General Plan: The 2030 General Plan includes the following policies related to energy use and efficiency in the Air Quality and Greenhouse Gases Element and the Circulation Element:

- **T-P-41** - Integrate the bicycle transportation system into new development and infill redevelopment. Development shall provide short term bicycle parking and long-term bicycle storage facilities, such as bicycle racks, stocks, and rental bicycle lockers. Development also shall provide safe and convenient bicycle and pedestrian access to high activity land uses such as schools, parks, shopping, employment, and entertainment centers.
- **T-P-53** - Develop flexible parking requirements in the zoning ordinance for development proposals based on "best practices" and the proven potential to reduce parking demand.
- **AQ-P-12** - Support the implementation of Voluntary Emissions Reduction Agreements (VERA) with the San Joaquin Valley Air Pollution Control District (the District) for individual development projects that may exceed District significance thresholds.
- **AQ-P-16** - Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings, in compliance with AB 32.

4.4 Thresholds and Methodology

The impact analysis provided in Chapter 4.5 is based on the application of the following California Environmental Quality Act (CEQA) Guidelines Appendix G, which indicates that a Project would have a significant impact on energy use if it would:

1. *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?*

2. *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The methodology applied to assess the Project's potential impacts involved the use of the California Emissions Estimator Model (CalEEMod) Version 2022.1.1 (CAPCOA 2022) that can be found in Attachment C. For the construction phase, energy use would be attributed to worker trips and operation of construction equipment. Diesel and gasoline would be utilized to fuel on and off-road construction equipment during this phase of the Project. Energy use associated with the operational phase would result from residential vehicle trips (mobile sources) and activities in homes that consume energy in the form of electricity. No natural gas will be utilized by the proposed residential buildings, so all building activities would utilize electricity. Although electricity generation produces criteria pollutants and GHGs, these are emitted offsite at fossil fuel power plants and these pollutants are not attributed to individual buildings or electricity users. The power plants responsible for electricity generation are existing stationary sources permitted by air districts and/or the USEPA, criteria pollutant emissions are generally associated with the power plants themselves. These criteria pollutant emissions are subject to local, state and federal control measures. (CAPCOA 2022)

Unlike criteria pollutants, GHG emissions at these offsite power plants are not subject to the same stationary source permitting requirements and it is difficult to mitigate GHG emissions associated with them. Therefore, the most effective way to control GHGs from power plants is to reduce electricity demand by electricity users, which can be mitigated through building efficiency measures. As a result, the CalEEMod program calculates GHG emissions (not criteria pollutant emissions) from regional power plants associated with building electricity use. To reduce GHG emissions and energy usage, the Project will comply with the provisions of Part 6 of the Title 24 California Code of Regulations, which is the Building Energy Efficiency Standards (Energy Code). The California Energy Commission implements Title 24, Part 6 to increase the energy efficiency of newly constructed residential buildings. The latest Energy Code is for 2023, which was the 2022 Energy Code (CAPCOA 2022).

When calculating energy use associated with mobile sources and residential buildings, CalEEMod defaults were used for vehicle trips lengths, vehicle trip counts, and electricity consumption. Natural gas emission factors were set to zero to account for the absence of direct natural gas consumption on the Project site. In order to calculate energy consumption from mobile sources in MBTUs, 2023 gasoline/diesel miles per gallon (MPG) factors provided by the EMFAC2017 Emissions Inventory were used. To simplify the estimation process for the construction phase, it was assumed that all worker vehicles used gasoline as fuel source and all vendor vehicles used diesel as a fuel source. Project-specific construction equipment was entered using data modeled from previous, completed construction projects. Energy Calculations for both construction and operational phases are provided in Attachment E.

4.5 Project Impacts

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 proposed Project includes the construction and operation of 120 units of single-family residential housing and City Park with a pond feature. During Project construction, there would be an increase in energy consumption related to worker trips and the operation of construction equipment. This increase in energy use would be temporary and limited to the greatest extent feasible through compliance with local, state, and federal regulations. Vehicle fuel consumption during Project construction was estimated based on the assumed construction schedule, vehicle trip lengths, and the number of workers per construction phase as provided by CalEEMod Version 2022.1.1, and Year 2024 gasoline/diesel MPG factors provided by EMFAC2017. Detailed energy calculations are provided in Attachment E. To simplify the estimation process, it was assumed that all worker vehicles used gasoline as a fuel source and all off-road equipment, hauling vehicles, and vendor vehicles used diesel as a fuel source. Table 15, below, provides gasoline and diesel fuel used by off-road and on-road vehicles/construction equipment during each phase of Project construction.

Off-Road Equipment Fuel (Diesel)		On-Road Vehicle Fuel				Total MMBTU
		Diesel		Gasoline		
Gallons	MMBTU	Gallons	MMBTU	Gallons	MMBTU	
25,861	3,595	3,437	478	5,481	636	4,709
Total Construction Energy Use						4,709
Average Annual Construction Energy Use						1,471

Table 15. On & Off-Road Mobile Fuel Use Generated by Construction Activities

Sources: CalEEMod (v.2022.1.1); EMFAC2017 (See Attachment E)

While construction of the proposed Project will result in additional energy consumption, this energy use is not unnecessary or inefficient. This energy use is justified by the energy-efficient nature of the proposed Project, which will be entirely reliant on electricity, rather than natural gas for all operational components (in-home appliances). The California Energy Commission is responsible for the development and enforcement of specific strategies to create energy efficient buildings for new residential development. These strategies are implemented through Title 24, Part 6 of the California Building Code, which requires developers to include certain measures (including solar panels on all new residential buildings) to achieve required building efficiency standards.

Mobile Fuel Use	**Gal/Year**		**MMBTU**
	Gasoline	112,785	13,566
	Diesel	13,122	1,803
Electricity Use	**kWh/Year**		**Total MMBTU**
	1,386,288		4,730
Total Operational Energy Use			**Total MMBTU**
			20,099

Table 16. On-Road Mobile Fuel Use and Electricity Use Generated by Operational Activities

Sources: CalEEMod (v. 2022.1.1); EMFAC2021 (See Attachment E)

As shown in Table 16, annual energy use associated with Project operations would total approximately 20,099 MMBTUs per year. Annual energy use is expected to decrease over time as a result of improvements in vehicle fuel efficiency standards. The proposed Project will be subject to energy conservation requirements in the California Energy Code (24 CCR Part 6, California's Energy Efficiency Standards for Residential and Nonresidential Buildings) and the California Green Building Standards Code (CALGreen) (24 CCR Part 11). Adherence to Title 24 requirements would ensure that the Project would not result in wasteful or inefficient use of energy resources due to building operation or vehicle trips. Additionally, the operational component of the Project will not utilize natural gas directly and will rely entirely on electricity.

Because construction-related energy use would be temporary and limited to the greatest extent feasible through consistency with Federal, State, and local policies related to energy conservation, and operation of the Project will comply with all energy efficiency standards required under Title 24, Part 6, and these standards were specifically developed to achieve net zero energy for residential Projects, it can be presumed that the Project will not result in inefficient, unnecessary, or wasteful energy use. The impact is *less than significant.*

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

No Impact: The proposed Project will not conflict with or obstruct any state or local plans for renewable energy or energy efficiency. The construction and operation of the Project will comply with applicable energy efficiency regulations included in CALGreen, Title 24, CARB, and the Tulare General Plan. The proposed Project will comply with all state and local policies related to energy efficiency and there is *no impact.*

Section 5 – Cumulative Impacts

The geographic scope considered for the analysis of cumulative air quality, greenhouse gas emission, and energy impacts is Tulare County, the San Joaquin Valley Air Basin (SJVAB) and the state of California.

Air Quality

A project's emissions may be individually limited but cumulatively considerable when taken in combination with past, present, and future development within the SJVAB. If a project would result in a significant impact based on the SJVAPCD annual thresholds of significance for criteria pollutants, then the project would also be considered cumulatively significant. However, even if project emissions are below the annual significance thresholds for criteria pollutants, the impact may still be cumulatively significant. For instance, if a project results in criteria pollutant concentrations that exceed any of the federal health-based ambient air concentration standards or causes a worsening of areas already exceeding those standards, the project's impacts would be considered individually significant and cumulatively significant.

In addition, the combined emissions of a project and cumulative development located within the same area could potentially cause or worsen an exceedance of the concentration standards, whereby the project would have a cumulatively significant impact (SJVAPCD 2015). In regard to TACs, because impacts are localized and the SJVAPCD thresholds of significance for TACs have been established at an extremely conservative level, risks that equal or exceed the individual thresholds of significance are also considered cumulatively significant (SJVAPCD 2015). No other cumulative risk thresholds would apply. The SJVAPCD has not established cumulative significance thresholds regarding odor impacts.

Construction and operation-related impacts would be less than significant. The Project does not exceed construction and operational criteria pollutant and TAC health risk thresholds. Therefore, the Project's cumulative impacts with respect to criteria pollutant and TAC emissions would remain *less than cumulatively significant.*

Greenhouse Gas Emissions

The geographic area considered for the analysis of cumulative GHG impacts is the state of California, which is the geographic scope of the California Air Resources Board (CARB) 2017 Scoping Plan. However, Project emissions inherently contribute and relate to broader national and global concentrations of greenhouse gases in the atmosphere. As discussed in Section 3.4 Thresholds and Methodology, the Project would not result in significant impacts if the Project's efficiency metric was in compliance with the efficiency threshold established in CARB's 2017 Scoping Plan. Based on the analysis presented in Section 3.5 Project Impacts, the Project's emissions will not exceed the efficiency metric for a Project of its size and is therefore compliant with CARB's 2017 Scoping Plan. Additionally, the Project is consistent with the City's CAP and General Plan policies, which both promote economic growth while achieving greater energy

efficiency. The Project will exclude natural gas usage during its operational phase, which greatly reduces the direct GHG emissions resulting from the development. All electric, energy efficient appliances will be used in the residential Project. Therefore, impacts would be *less than cumulatively significant.*

Energy

The geographic area considered for the analysis of cumulative energy impacts is Tulare County. Potential cumulative impacts on energy would result if the Project, in combination with past, present, and future projects, would result in the wasteful or inefficient use of energy. Significant energy impacts could result from development that would not incorporate sufficient building energy efficiency features or would not achieve building energy efficiency standards, or if projects result in the unnecessary use of energy during construction or operation.

The Project would not result in wasteful, inefficient, or unnecessary use of energy during construction or operations, nor would it conflict with an applicable plan. Cumulative projects within the County would have a construction period during which electricity, natural gas, and petroleum would be used; however, it is expected that such usage would be temporary and would not constitute a wasteful, inefficient, or unnecessary consumption of energy. Additionally, although some of the cumulative projects within the County could result in increases in energy consumption during their operation, the increased demand is anticipated to be minimal relative to statewide energy usage and, in combination with the Project, would not contribute to any potentially significant cumulative energy impacts.

Furthermore, any commercial and residential cumulative projects that may take place in the County that include long-term energy demand would be subject to CALGreen, which provides energy efficiency standards. In addition, cumulative projects would be required to meet or exceed the Title 24 building standards, as applicable, further reducing the inefficient use of energy. Future development would also be required to meet even more stringent requirements, including the objectives set forth in the AB 32 Scoping Plan, which seek to make all newly constructed residential homes produce a sustainable amount of renewable energy through the use of on-site photovoltaic solar systems. Furthermore, various federal and state regulations, including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program, would serve to reduce the transportation fuel demand of cumulative projects.

The Project will comply with Title 24 building standards, which will include the installation of solar panels on all residential homes, and the exclusion of natural gas usage for all residential buildings during its operational phase. For the reasons above, the Project, together with the cumulative projects, would not result in wasteful, inefficient, or unnecessary use of energy, or conflict with applicable plans. Therefore, the Project, in combination with past, present, and

reasonably foreseeable future development, would not result in a significant cumulative impact related to energy, and the impacts would be *less than cumulatively considerable.*

Section 6 – Mitigation Measures

The analysis conducted in this report determined that the proposed Fernandes Property project would not result in significant impacts on air quality, greenhouse gas emissions, or energy use. Project emissions were found to be below the significance thresholds established by the San Joaquin Valley Air Pollution Control District (SJVAPCD). As such, no mitigation measures are required or proposed. The project will comply with all applicable federal, state, and local regulations, ensuring that emissions remain within acceptable limits.

Section 7 – Conclusions and Recommendations

Construction and operation of the proposed Project would result in criteria pollutant, toxic air contaminant, and GHG emissions, as well as an increase in energy use. However, all types of emissions would not exceed the thresholds of significance established by the SJVAPCD and the California Air Resources Board (CARB), as discussed in Sections 2 and 3 (Section 2 - Air Quality & Section 3 - Greenhouse Gas Emissions). As discussed in Section 4.5 Project Impacts (Energy), the Project would remain in compliance with Title 24, Part 6 Building Energy Efficiency Standards and would exclude natural gas usage in the operational phase. Therefore, the Project would not result in significant impacts due to a wasteful or unnecessary use of energy resources, nor would it conflict with any local plan for energy efficiency (Title 24, Part 6). Overall, the Project would not conflict with any local plans or policies including those listed in the SJVAPCD State Implementation Plans (SIPs), the City of Tulare CAP, the City of Tulare General Plan, and the 2017 CARB Scoping Plan. Impacts due to air quality emissions, greenhouse gas emissions and energy use from the proposed Project would be *less than significant*.

Section 8 – References

AR4 Climate Change 2007: Synthesis Report — IPCC. (n.d.). IPCC. https://www.ipcc.ch/report/ar4/syr/

California Energy Commission. (2023). 2023 Integrated Energy Policy Report - IEPR. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report

California Energy Commission. (n.d.). Supply and demand of natural gas in California. https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california#:~:text=Nearly%2045%20percent%20of%20the,90%20percent%20of%20its%20natural

California Energy Commission. (2022). 2022 Building Energy Efficiency Standards for residential and nonresidential buildings. In California Energy Commission (CEC-400-2022-010). California Energy Commission Energy Efficiency Division. Retrieved August 8, 2024, from https://www.energy.ca.gov/sites/default/files/2022-12/CEC-400-2022-010_CMF.pdf

California Environmental Quality Act (CEQA). 2019. (Public Resources Code 21000 - 21189) and CEQA Guidelines (California Code of Regulations Title 14, Division 6, Chapter 3, Sections 15000 – 22887).

California Environmental Quality Act (CEQA). 2019. CEQA, Appendix G – Environmental Checklist Form, Final Text.

CAPCOA (California Air Pollution Control Officers Association). April 2022. California Emissions Estimator Model (CalEEMod) User's Guide Version 2022.1.1. Accessed August 2024.

CARB (California Air Resources Board). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel Fueled Engines and Vehicles. October 2000. https://ww2.arb.ca.gov/sites/default/files/classic/diesel/documents/rrpfinal.pdf

CARB. 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April 2005. https://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf

CARB. 2016a. "Glossary of Air Pollution Terms." CARB website. https://ww2.arb.ca.gov/glossary

CARB. 2016b. "Overview: Diesel Exhaust and Health." April 12, 2016. https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health

CARB. 2016c. "Ambient Air Quality Standards." May 4, 2016. https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards

CARB. 2017. "Inhalable Particulate Matter and Health (PM2.5 and PM10)." https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health.

CARB. 2019a. "Ozone & Health." https://ww2.arb.ca.gov/resources/ozone-and-health.

CARB. 2019b. "Nitrogen Dioxide & Health." https://ww2.arb.ca.gov/resources/nitrogen-dioxide-and-health.

CARB. 2019c. "Carbon Monoxide & Health." https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health.

CARB. 2019d. "Sulfur Dioxide & Health." https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health.

CARB. 2021. "iADAM: Air Quality Data Statistics." https://www.arb.ca.gov/adam/index.html

CEC (California Energy Commission). 2018. California Energy Demand 2018–2030 Preliminary Forecast. CEC200-2018-002-CMF. February 2018. https://efiling.energy.ca.gov/getdocument.aspx?tn=223244

CEC. 2019. 2019 Building Energy Efficiency Standards. In *Frequently Asked Questions*. https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

CEC. 2020a. "Gas Consumption by Entity." Accessed August 2024. https://ecdms.energy.ca.gov/gasbyutil.aspx

CEC. 2020b. "Gas Consumption by Planning Area." Accessed August 2024. https://ecdms.energy.ca.gov/gasbyplan.aspx

California Public Utilities Commission. (n.d.). *Natural gas and California*. Retrieved August 15, 2024, from https://www.cpuc.ca.gov/industries-and-topics/natural-gas/natural-gas-and-california

City of Tulare. 2011. Climate Action Plan. Prepared by PMC. Accessed August 2024. https://www.tulare.ca.gov/home/showpublisheddocument/7484/636432198506500000

EIA. 2024a. "California State Energy Profile." Last updated May 16, 2024. Accessed August 2024. https://www.eia.gov/state/?sid=CA

EIA. 2024b. "California State Profile and Energy Estimates – Table F16: Total Petroleum Consumption Estimates, 2017." Accessed May 2024. https://www.eia.gov/state/print.php?sid=CA

EPA (U.S. Environmental Protection Agency). 2004. Air Quality Criteria for Particulate Matter, Vol. 1 and 2. EPA/600/P99/002aF. National Center for Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency, Research Triangle Park, NC. October 2004.

EPA. 2009. Integrated Science Assessment for Particulate Matter. U.S. EPA, EPA/600/R-08/139F, 2009

EPA. 2013. Integrated Science Assessment of Ozone and Related Photochemical Oxidants. U.S. EPA, EPA/ 600R-10/076F, 2013.

EPA. 2024. "Criteria Air Pollutants." July 30, 2024. https://www.epa.gov/criteria-air-pollutants

Greenhouse effect. (n.d.). https://education.nationalgeographic.org/resource/greenhouse-effect/

Moser, Susanne & Dilling, Lisa. (2012). Communicating Climate Change: Closing the Science-Action Gap. The Oxford Handbook of Climate Change and Society. 10.1093/oxfordhb/9780199566600.003.0011.

On-Road (EMFAC) | California Air Resources Board. (n.d.). https://ww2.arb.ca.gov/our-work/programs/msei/onroad-emfac

Overview of greenhouse gases | Greenhouse gas (GHG) emissions | US EPA. (n.d.). https://www.epa.gov/ghgemissions/overview-greenhouse-gases

Renewable Fuel Annual Standards | US EPA. (2024, June 4). US EPA. https://www.epa.gov/renewable-fuel-standard-program/renewable-fuel-annual-standards

SJVAPCD. 2020c. Ambient Air Quality Standards & Valley Attainment Status. Accessed August 2024. https://ww2.valleyair.org/air-quality-information/ambient-air-quality-standards-valley-attainmnet-status/

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2004. Extreme Ozone Attainment Demonstration Plan. October 2004. Accessed August 2024. https://www.valleyair.org/Air_Quality_Plans/AQ_plans_Ozone_Final.htm

SJVAPCD (San Joaquin Valley Air Pollution Control District). 2015. Guidance for Assessing and Mitigating Air Quality Impacts. Accessed August 2024. https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF

Southern California Edison. (2022). *2022 POWER CONTENT LABEL*. https://www.sce.com/sites/default/files/custom-files/PDF_Files/SCE_2022_Power_Content_Label_B%26W.pdf

Statute and Guidelines - California Association of Environmental Professionals. (n.d.). https://www.califaep.org/statute_and_guidelines.php

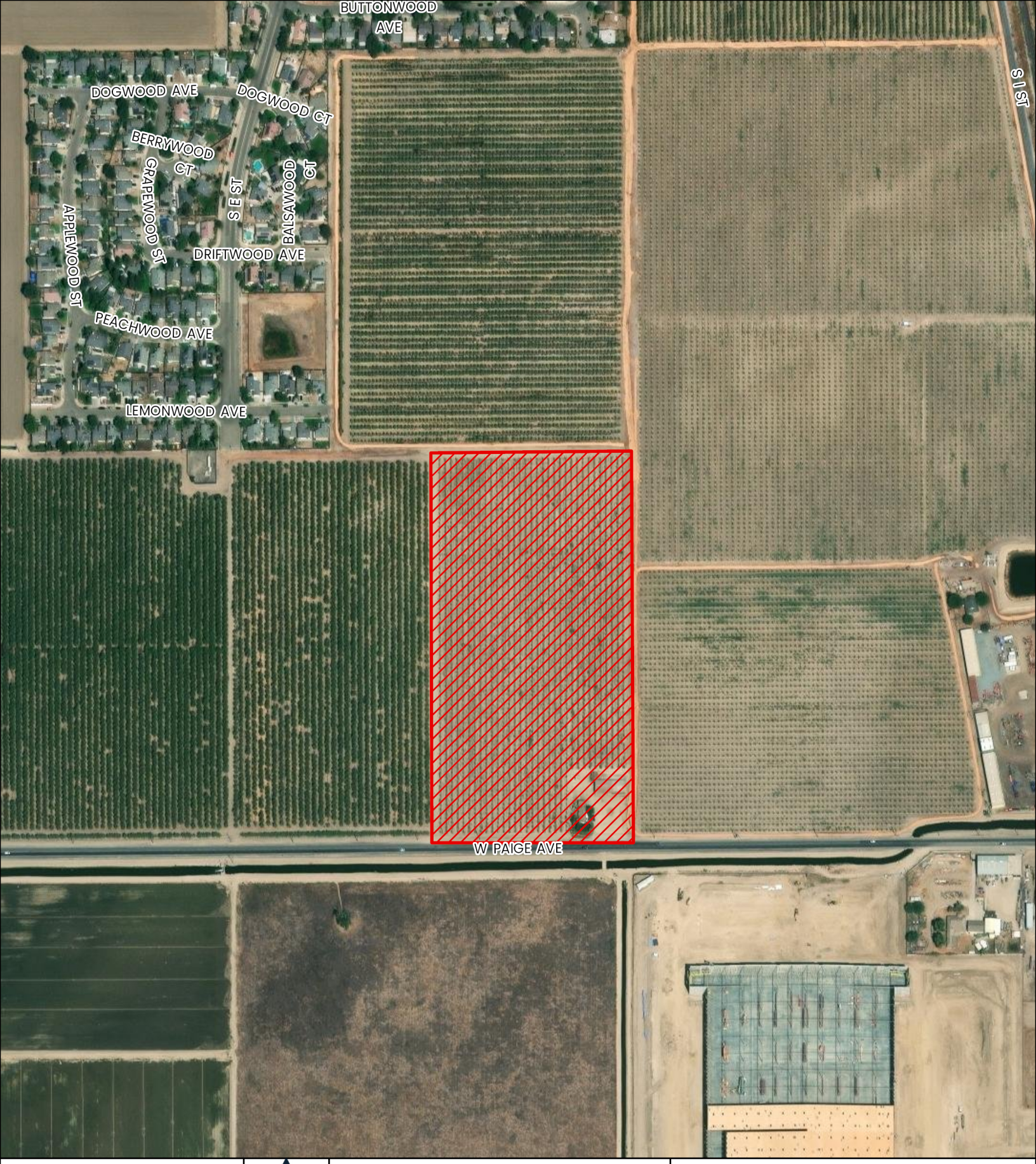
The Climate Registry. (2024). The climate registry 2024 default emission factors. https://theclimateregistry.org/wp-content/uploads/2024/03/2024-Emission-Factor-Document_FINAL.pdf

The Natelson Company, Inc. & Terry A. Hayes Associates. (2001). Employment Density Study: Summary report. In *Metropolitan Washington Council of Governments*. Southern California Association of Governments. Retrieved August 15, 2024, from https://www.mwcog.org/file.aspx?A=QTTITR24POOOUIw5mPNzK8F4d8djdJe4LF9Exj6IXOU%3D

Walter, R., Haskell, H., Hendrix, M., Mitchell, D., & Vermilion, N. (2016). Final White paper Beyond 2020 and Newhall: A Field Guide to new CEQA greenhouse gas thresholds and Climate Action Plan Targets for California. In *Association of Environmental Professionals*. Association of Environmental Professionals. Retrieved August 15, 2024, from https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf

Attachment A

Project Vicinity Map



4CREEKS

N

Vicinity Map

Fernandes Property

Tulare, CA

Legend

Project Location

0 0.05 0.1 0.2 Miles

Attachment B

Project Site Plan

JANUARY 2025

FERNANDES SUBDIVISION

CONCEPT 3

ENTITLEMENTS REQUIRED:

- TENTATIVE SUBDIVISION MAP

SITE INFORMATION:

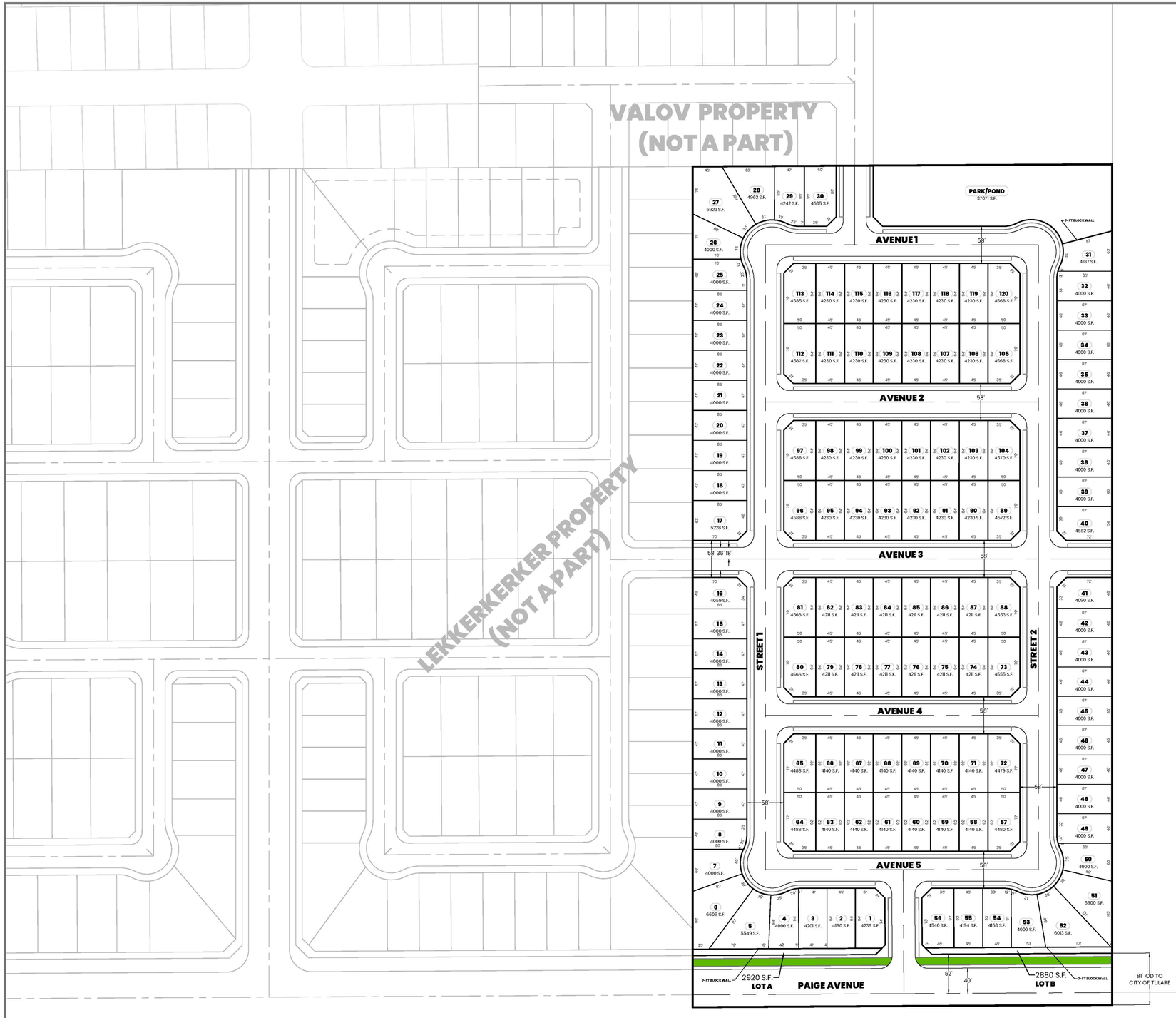
APN:	174-030-008
TOTAL AREA:	±19.58 AC. (GROSS)
FLOOD ZONE:	N/A
JURISDICTION:	CITY OF TULARE
EXISTING ZONING:	R-1-4
PROPOSED ZONING:	R-1-4
EXISTING GENERAL PLAN:	LOW DENSITY RESIDENTIAL
PROPOSED GENERAL PLAN:	LOW DENSITY RESIDENTIAL
EXISTING USE:	AGRICULTURE
PROPOSED USE:	SINGLE-FAMILY RESIDENTIAL

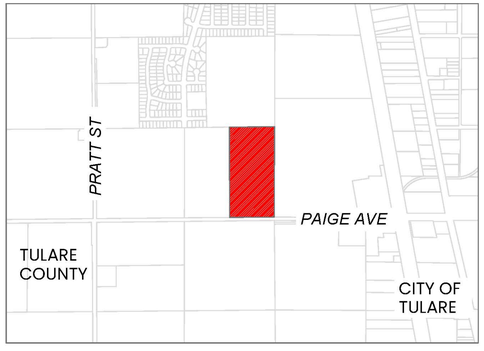
TYPICAL LOT SIZE:

45' X 85' MINIMUM (3,825 SF) | 120 UNITS | 6.13 DU/AC

UTILITIES:

SEWER SERVICE:	CITY OF TULARE
WATER SERVICE:	CITY OF TULARE
STORMWATER:	CITY OF TULARE
GAS SERVICE:	SOUTHERN CALIFORNIA GAS
ELEC. SERVICE:	SOUTHERN CALIFORNIA EDISON
REFUSE SERVICE:	CITY OF TULARE





VICINITY MAP

NORTH

80' 0' 80'

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

Attachment C

CalEEMod Report

Fernandes - District Rule 9510 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

3.2. Demolition (2026) - Mitigated

3.3. Site Preparation (2026) - Unmitigated

3.4. Site Preparation (2026) - Mitigated

3.5. Grading (2026) - Unmitigated

3.6. Grading (2026) - Mitigated

3.7. Building Construction (2026) - Unmitigated

3.8. Building Construction (2026) - Mitigated

3.9. Building Construction (2027) - Unmitigated

3.10. Building Construction (2027) - Mitigated

3.11. Paving (2027) - Unmitigated

3.12. Paving (2027) - Mitigated

3.13. Architectural Coating (2027) - Unmitigated

3.14. Architectural Coating (2027) - Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fernandes - District Rule 9510
Construction Start Date	3/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.90
Precipitation (days)	24.4
Location	36.18382092729347, -119.34975880649861
County	Tulare
City	Tulare
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2746
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

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
Single Family Housing	120	Dwelling Unit	18.7	234,000	23,400	—	406	—

City Park	0.85	Acre	0.85	0.00	37,071	37,071	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Transportation	T-32*	Orient Project Toward Transit, Bicycle, or Pedestrian Facility
Transportation	T-35*	Provide Tra c Calming Measures
Energy	E-10-B	Establish Onsite Renewable Energy Systems: Solar Power
Energy	E-12-A	Install Alternative Type of Water Heater in Place of Gas Storage Tank Heater in Residences
Energy	E-12-B	Install Electric Space Heater in Place of Natural Gas Heaters in Residences
Energy	E-13	Install Electric Ranges in Place of Gas Ranges

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	3.47	2.93	25.4	25.6	0.06	1.06	9.32	10.4	0.98	3.68	4.66	—	6,297	6,297	0.26	0.07	2.07	6,320
Mit.	0.67	0.67	3.67	33.2	0.06	0.12	3.71	3.83	0.12	1.45	1.57	—	6,297	6,297	0.26	0.07	2.07	6,320
% Reduced	81%	77%	86%	-30%	—	89%	60%	63%	88%	61%	66%	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.81	2.36	21.1	19.8	0.03	0.85	6.59	7.00	0.78	3.38	3.75	—	3,794	3,794	0.15	0.07	0.05	3,819
Mit.	0.51	0.45	4.91	18.9	0.03	0.07	2.60	2.63	0.07	1.32	1.35	—	3,794	3,794	0.15	0.07	0.05	3,819
% Reduced	82%	81%	77%	4%	—	92%	61%	62%	91%	61%	64%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.96	0.81	6.62	7.60	0.01	0.26	1.15	1.41	0.23	0.44	0.68	—	1,724	1,724	0.07	0.04	0.43	1,738
Mit.	0.30	0.28	1.88	8.86	0.01	0.04	0.58	0.63	0.04	0.20	0.24	—	1,724	1,724	0.07	0.04	0.43	1,738
% Reduced	69%	65%	72%	-17%	—	84%	49%	56%	83%	54%	64%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.15	1.21	1.39	< 0.005	0.05	0.21	0.26	0.04	0.08	0.12	—	285	285	0.01	0.01	0.07	288
Mit.	0.06	0.05	0.34	1.62	< 0.005	0.01	0.11	0.11	0.01	0.04	0.04	—	285	285	0.01	0.01	0.07	288
% Reduced	69%	65%	72%	-17%	—	84%	49%	56%	83%	54%	64%	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.47	2.93	25.4	25.6	0.06	1.06	9.32	10.4	0.98	3.68	4.66	—	6,297	6,297	0.26	0.07	2.07	6,320
2027	1.12	0.94	6.93	10.1	0.02	0.24	0.43	0.66	0.22	0.10	0.32	—	2,239	2,239	0.09	0.07	1.87	2,265
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2026	2.81	2.36	21.1	19.8	0.03	0.85	6.59	7.00	0.78	3.38	3.75	—	3,794	3,794	0.15	0.07	0.05	3,819
2027	1.08	0.92	6.99	9.43	0.02	0.24	0.43	0.66	0.22	0.10	0.32	—	2,197	2,197	0.08	0.07	0.05	2,220
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.96	0.81	6.62	7.60	0.01	0.26	1.15	1.41	0.23	0.44	0.68	—	1,724	1,724	0.07	0.04	0.43	1,738
2027	0.46	0.39	2.99	4.15	0.01	0.10	0.17	0.28	0.09	0.04	0.14	—	929	929	0.04	0.03	0.33	939
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.18	0.15	1.21	1.39	< 0.005	0.05	0.21	0.26	0.04	0.08	0.12	—	285	285	0.01	0.01	0.07	288
2027	0.08	0.07	0.55	0.76	< 0.005	0.02	0.03	0.05	0.02	0.01	0.02	—	154	154	0.01	< 0.005	0.05	155

2.3. Construction Emissions by Year, Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.67	0.67	3.67	33.2	0.06	0.12	3.71	3.83	0.12	1.45	1.57	—	6,297	6,297	0.26	0.07	2.07	6,320
2027	0.52	0.46	2.93	11.7	0.02	0.06	0.43	0.49	0.06	0.10	0.16	—	2,239	2,239	0.09	0.07	1.87	2,265
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.51	0.45	4.91	18.9	0.03	0.07	2.60	2.63	0.07	1.32	1.35	—	3,794	3,794	0.15	0.07	0.05	3,819
2027	0.48	0.44	3.00	11.0	0.02	0.06	0.43	0.49	0.06	0.10	0.16	—	2,197	2,197	0.08	0.07	0.05	2,220
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.30	0.28	1.88	8.86	0.01	0.04	0.58	0.63	0.04	0.20	0.24	—	1,724	1,724	0.07	0.04	0.43	1,738
2027	0.20	0.18	1.27	4.79	0.01	0.03	0.17	0.20	0.02	0.04	0.07	—	929	929	0.04	0.03	0.33	939
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.06	0.05	0.34	1.62	< 0.005	0.01	0.11	0.11	0.01	0.04	0.04	—	285	285	0.01	0.01	0.07	288
2027	0.04	0.03	0.23	0.87	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	154	154	0.01	< 0.005	0.05	155

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.	10.2	9.86	3.53	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,962	10,037	8.02	0.40	26.9	10,383
Mit.	10.2	9.86	3.52	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	8,702	8,777	7.95	0.39	26.9	9,119
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	13%	13%	1%	2%	—	12%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.05	8.69	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,157	9,232	8.07	0.43	2.33	9,565
Mit.	9.05	8.69	4.06	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	7,897	7,973	7.99	0.42	2.33	8,301
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	14%	14%	1%	2%	—	13%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	9,219	9,295	8.04	0.41	12.3	9,629
Mit.	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	7,960	8,035	7.96	0.40	12.3	8,365
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	14%	14%	1%	2%	—	13%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,526	1,539	1.33	0.07	2.04	1,594
Mit.	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,318	1,330	1.32	0.07	2.04	1,385
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	—	< 0.5%	2%	—	< 0.5%	—	14%	14%	1%	2%	—	13%

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	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Area	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	10.2	9.86	3.53	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,962	10,037	8.02	0.40	26.9	10,383
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Area	5.03	5.03	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.05	8.69	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,157	9,232	8.07	0.43	2.33	9,565
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.01	3.67	3.68	30.8	0.07	0.05	6.76	6.80	0.05	1.71	1.76	—	7,155	7,155	0.38	0.37	10.6	7,284
Area	5.34	5.32	0.03	3.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	8.98	8.98	< 0.005	< 0.005	—	9.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	9,219	9,295	8.04	0.41	12.3	9,629
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206
Area	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	335	335	0.02	< 0.005	—	336
Water	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
Total	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,526	1,539	1.33	0.07	2.04	1,594

2.6. Operations Emissions by Sector, Mitigated

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	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Area	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	10.2	9.86	3.52	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	8,702	8,777	7.95	0.39	26.9	9,119
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Area	5.03	5.03	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.05	8.69	4.06	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	7,897	7,973	7.99	0.42	2.33	8,301
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.01	3.67	3.68	30.8	0.07	0.05	6.76	6.80	0.05	1.71	1.76	—	7,155	7,155	0.38	0.37	10.6	7,284
Area	5.34	5.32	0.03	3.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	8.98	8.98	< 0.005	< 0.005	—	9.01
Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	7,960	8,035	7.96	0.40	12.3	8,365
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206
Area	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	126	126	0.01	< 0.005	—	126
Water	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
Total	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,318	1,330	1.32	0.07	2.04	1,385

3. Construction Emissions Details

3.1. Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.31	0.31	—	0.05	0.05	—	—	—	—	—	—	—
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	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.67	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	0.01	0.01	0.01	117
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	0.01	0.01	0.33	0.08	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	253	253	0.01	0.04	0.02	264
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.53	6.53	< 0.005	< 0.005	0.01	6.63
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	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.29	2.29	< 0.005	< 0.005	< 0.005	2.40

3.2. Demolition (2026) - Mitigated

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

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

Off-Road Equipment	0.36	0.36	4.51	18.2	0.03	0.06	—	0.06	0.06	—	0.06	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.31	0.31	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.25	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.05	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.67	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	0.01	0.01	0.01	117
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	0.01	0.01	0.33	0.08	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	253	253	0.01	0.04	0.02	264
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.53	6.53	< 0.005	< 0.005	0.01	6.63
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	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.29	2.29	< 0.005	< 0.005	< 0.005	2.40

3.3. Site Preparation (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	1.21	1.01	9.38	8.97	0.02	0.40	—	0.40	0.37	—	0.37	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	6.55	6.55	—	3.37	3.37	—	—	—	—	—	—	—
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 Equipm	1.21	1.01	9.38	8.97	0.02	0.40	—	0.40	0.37	—	0.37	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	6.55	6.55	—	3.37	3.37	—	—	—	—	—	—	—
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	0.03	0.03	0.26	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.7	45.7	< 0.005	< 0.005	—	45.9
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
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	0.30	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	0.16	44.0

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.3	38.3	< 0.005	< 0.005	< 0.005	38.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
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	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
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

3.4. Site Preparation (2026) - Mitigated

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	0.16	0.16	0.82	8.76	0.02	0.03	—	0.03	0.03	—	0.03	—	1,669	1,669	0.07	0.01	—	1,675

Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
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	0.16	0.16	0.82	8.76	0.02	0.03	—	0.03	0.03	—	0.03	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.02	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	45.7	45.7	< 0.005	< 0.005	—	45.9
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	0.16	44.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.3	38.3	< 0.005	< 0.005	< 0.005	38.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
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	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (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	3.39	2.85	25.4	24.6	0.06	1.06	—	1.06	0.98	—	0.98	—	6,167	6,167	0.25	0.05	—	6,188
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
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	0.28	0.23	2.09	2.03	< 0.005	0.09	—	0.09	0.08	—	0.08	—	507	507	0.02	< 0.005	—	509
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
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	0.05	0.04	0.38	0.37	< 0.005	0.02	—	0.02	0.01	—	0.01	—	83.9	83.9	< 0.005	< 0.005	—	84.2

Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
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	0.91	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	130	130	0.01	0.01	0.47	132
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	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	0.02	9.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.65
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

3.6. Grading (2026) - Mitigated

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	0.59	0.59	3.62	32.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,167	6,167	0.25	0.05	—	6,188
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—	—
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	0.05	0.05	0.30	2.66	< 0.005	0.01	—	0.01	0.01	—	0.01	—	507	507	0.02	< 0.005	—	509
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.12	0.12	—	—	—	—	—	—	—
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	0.05	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	83.9	83.9	< 0.005	< 0.005	—	84.2
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—

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	0.91	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	130	130	0.01	0.01	0.47	132
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	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	0.02	9.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (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	0.90	0.75	6.69	7.56	0.02	0.25	—	0.25	0.23	—	0.23	—	1,584	1,584	0.06	0.01	—	1,590
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	0.90	0.75	6.69	7.56	0.02	0.25	—	0.25	0.23	—	0.23	—	1,584	1,584	0.06	0.01	—	1,590
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	0.39	0.32	2.87	3.24	0.01	0.11	—	0.11	0.10	—	0.10	—	679	679	0.03	0.01	—	681
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	0.07	0.06	0.52	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	112	112	< 0.005	< 0.005	—	113
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	0.24	0.23	0.15	2.62	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	374	374	0.02	0.01	1.35	381
Vendor	0.02	0.01	0.39	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	294	294	0.01	0.04	0.73	308

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	0.22	0.19	0.20	1.93	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	331	331	0.02	0.01	0.03	336
Vendor	0.02	0.01	0.42	0.15	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	295	295	0.01	0.04	0.02	308
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	0.09	0.09	0.08	0.88	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	147	147	0.01	0.01	0.25	149
Vendor	0.01	< 0.005	0.18	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.14	132
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	0.02	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.9
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

3.8. Building Construction (2026) - Mitigated

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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.11	1.04	3.91	0.01	0.03	—	0.03	0.02	—	0.02	—	679	679	0.03	0.01	—	681
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	112	112	< 0.005	< 0.005	—	113
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	0.24	0.23	0.15	2.62	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	374	374	0.02	0.01	1.35	381
Vendor	0.02	0.01	0.39	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	294	294	0.01	0.04	0.73	308
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	0.22	0.19	0.20	1.93	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	331	331	0.02	0.01	0.03	336

Vendor	0.02	0.01	0.42	0.15	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	295	295	0.01	0.04	0.02	308
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	0.09	0.09	0.08	0.88	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	147	147	0.01	0.01	0.25	149
Vendor	0.01	< 0.005	0.18	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.14	132
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	0.02	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.9
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

3.9. Building Construction (2027) - 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	0.87	0.73	6.41	7.53	0.02	0.23	—	0.23	0.21	—	0.21	—	1,584	1,584	0.06	0.01	—	1,590
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	0.87	0.73	6.41	7.53	0.02	0.23	—	0.23	0.21	—	0.21	—	1,584	1,584	0.06	0.01	—	1,590

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	0.34	0.29	2.53	2.98	0.01	0.09	—	0.09	0.08	—	0.08	—	626	626	0.03	0.01	—	628
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	0.06	0.05	0.46	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	104	104	< 0.005	< 0.005	—	104
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	0.23	0.20	0.14	2.41	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	367	367	0.02	0.01	1.22	373
Vendor	0.02	0.01	0.38	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.65	302
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	0.19	0.18	0.18	1.77	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	324	324	0.01	0.01	0.03	329
Vendor	0.02	0.01	0.40	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.02	302
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	0.08	0.07	0.07	0.74	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	133	133	0.01	0.01	0.21	135
Vendor	0.01	< 0.005	0.16	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.11	119

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	0.01	0.01	0.01	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.03	22.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.9	18.9	< 0.005	< 0.005	0.02	19.8
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

3.10. Building Construction (2027) - Mitigated

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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.11	0.10	0.96	3.61	0.01	0.02	—	0.02	0.02	—	0.02	—	626	626	0.03	0.01	—	628

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	104	104	< 0.005	< 0.005	—	104
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	0.23	0.20	0.14	2.41	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	367	367	0.02	0.01	1.22	373
Vendor	0.02	0.01	0.38	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.65	302
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	0.19	0.18	0.18	1.77	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	324	324	0.01	0.01	0.03	329
Vendor	0.02	0.01	0.40	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.02	302
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	0.08	0.07	0.07	0.74	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	133	133	0.01	0.01	0.21	135
Vendor	0.01	< 0.005	0.16	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.11	119
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	0.01	0.01	0.01	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.03	22.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.9	18.9	< 0.005	< 0.005	0.02	19.8
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

3.11. Paving (2027) - 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	0.44	0.37	3.47	4.98	0.01	0.15	—	0.15	0.14	—	0.14	—	756	756	0.03	0.01	—	758
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.4	41.4	< 0.005	< 0.005	—	41.5
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.85	6.85	< 0.005	< 0.005	—	6.88
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.42	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.7	63.7	< 0.005	< 0.005	0.21	64.7
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	0.01	3.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
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

3.12. Paving (2027) - Mitigated

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	0.08	0.08	0.97	5.30	0.01	0.01	—	0.01	0.01	—	0.01	—	756	756	0.03	0.01	—	758
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.05	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.4	41.4	< 0.005	< 0.005	—	41.5
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.85	6.85	< 0.005	< 0.005	—	6.88
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.42	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.7	63.7	< 0.005	< 0.005	0.21	64.7
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	0.01	3.25

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
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

3.13. Architectural Coating (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
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	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.48	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.24	74.6
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	0.01	3.74
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	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
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

3.14. Architectural Coating (2027) - Mitigated

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-Roa Equipment	0.02	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
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-Roa d Equipm ent	< 0.005	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
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-Roa d Equipm ent	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.48	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.24	74.6
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	0.01	3.74

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	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.57	4.22	3.46	38.6	0.08	0.05	7.01	7.06	0.05	1.78	1.82	—	7,868	7,868	0.36	0.36	25.1	8,009
City Park	0.01	0.01	0.01	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.07	20.5
Total	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.02	3.66	4.06	30.4	0.07	0.05	7.01	7.06	0.05	1.78	1.82	—	7,083	7,083	0.41	0.39	0.65	7,211
City Park	0.01	0.01	0.01	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	< 0.005	18.8

Total	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.73	0.67	0.67	5.61	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,183	1,183	0.06	0.06	1.76	1,204
City Park	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.68
Total	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206

4.1.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.57	4.22	3.46	38.6	0.08	0.05	7.01	7.06	0.05	1.78	1.82	—	7,868	7,868	0.36	0.36	25.1	8,009
City Park	0.01	0.01	0.01	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.07	20.5
Total	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.02	3.66	4.06	30.4	0.07	0.05	7.01	7.06	0.05	1.78	1.82	—	7,083	7,083	0.41	0.39	0.65	7,211
City Park	0.01	0.01	0.01	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	< 0.005	18.8
Total	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.73	0.67	0.67	5.61	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,183	1,183	0.06	0.06	1.76	1,204
City Park	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.68
Total	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	335	335	0.02	< 0.005	—	336
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	335	335	0.02	< 0.005	—	336

4.2.2. Electricity Emissions By Land Use - Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	128	128	0.01	< 0.005	—	128

City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	128	128	0.01	< 0.005	—	128

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-1.87	-1.87	> -0.005	> -0.005	—	-1.88
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-1.87	-1.87	> -0.005	> -0.005	—	-1.88

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.63	0.60	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.2	18.2	< 0.005	< 0.005	—	18.3
Total	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	5.03	5.03	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.92	0.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.49
Total	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49

4.3.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.63	0.60	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.2	18.2	< 0.005	< 0.005	—	18.3
Total	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	5.03	5.03	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.92	0.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.49

Total	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.62	5.10	6.72	0.17	< 0.005	—	12.1
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.69	0.69	< 0.005	< 0.005	—	0.70
Total	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8

4.4.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.62	5.10	6.72	0.17	< 0.005	—	12.1
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.69	0.69	< 0.005	< 0.005	—	0.70
Total	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.8
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9

4.5.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.8
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28

4.6.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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
Demolition	Demolition	3/1/2026	3/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	3/30/2026	4/13/2026	5.00	10.0	—
Grading	Grading	4/14/2026	5/26/2026	5.00	30.0	—
Building Construction	Building Construction	5/27/2026	7/21/2027	5.00	300	—
Paving	Paving	7/22/2027	8/19/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	8/20/2027	9/17/2027	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Tier 4 Final	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40

Grading	Tractors/Loaders/Back	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Grading	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	1.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Back hoes	Diesel	Tier 4 Final	1.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Final	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.4	LDA,LDT1,LDT2
Demolition	Vendor	—	7.43	HHDT,MHDT
Demolition	Hauling	3.65	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.4	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.43	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—

Grading	Worker	15.0	11.4	LDA,LDT1,LDT2
Grading	Vendor	—	7.43	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.2	11.4	LDA,LDT1,LDT2
Building Construction	Vendor	12.8	7.43	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	11.4	LDA,LDT1,LDT2
Paving	Vendor	—	7.43	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.64	11.4	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.43	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.4	LDA,LDT1,LDT2
Demolition	Vendor	—	7.43	HHDT,MHDT
Demolition	Hauling	3.65	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	5.00	11.4	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.43	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.4	LDA,LDT1,LDT2
Grading	Vendor	—	7.43	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.2	11.4	LDA,LDT1,LDT2
Building Construction	Vendor	12.8	7.43	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	11.4	LDA,LDT1,LDT2
Paving	Vendor	—	7.43	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.64	11.4	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.43	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	6,300	—
Site Preparation	0.00	0.00	5.00	0.00	—
Grading	0.00	0.00	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.32

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.32	0%
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005
2027	0.00	532	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
Single Family Housing	1,133	1,145	1,026	408,529	9,850	9,955	8,922	3,552,360
City Park	0.66	1.67	1.86	357	8.45	21.2	23.7	4,545

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	1,133	1,145	1,026	408,529	9,850	9,955	8,922	3,552,360
City Park	0.66	1.67	1.86	357	8.45	21.2	23.7	4,545

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	120
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	120
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

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)
—	—	—	—	—

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

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)
Single Family Housing	1,386,288	532	0.0330	0.0040	0.00
City Park	0.00	532	0.0330	0.0040	0.00

5.11.2. Mitigated

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)
Single Family Housing	529,890	532	0.0330	0.0040	-35,284
City Park	0.00	532	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)
Single Family Housing	5,107,518	412,755
City Park	0.00	1,188,908

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	5,107,518	412,755
City Park	0.00	1,188,908

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	121	—
City Park	0.07	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	121	—
City Park	0.07	—

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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.4	annual days of extreme heat
Extreme Precipitation	0.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

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

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7

AQ-PM	97.9
AQ-DPM	22.7
Drinking Water	79.0
Lead Risk Housing	45.6
Pesticides	80.2
Toxic Releases	36.4
Traffic	4.76
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	30.9
Haz Waste Facilities/Generators	80.5
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	79.6
Cardio-vascular	93.1
Low Birth Weights	62.9
Socioeconomic Factor Indicators	—
Education	91.6
Housing	55.1
Linguistic	94.8
Poverty	84.9
Unemployment	63.4

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	12.83202874
Employed	20.45425382
Median HI	18.70909791
Education	—
Bachelor's or higher	2.746054151
High school enrollment	100
Preschool enrollment	44.86077249
Transportation	—
Auto Access	45.25856538
Active commuting	12.97318106
Social	—
2-parent households	42.39702297
Voting	12.19042731
Neighborhood	—
Alcohol availability	60.19504684
Park access	52.12370076
Retail density	9.072244322
Supermarket access	26.20300269
Tree canopy	4.812010779
Housing	—
Homeownership	45.46387784
Housing habitability	43.2567689
Low-inc homeowner severe housing cost burden	45.7590145
Low-inc renter severe housing cost burden	38.6629026
Uncrowded housing	24.97112794
Health Outcomes	—
Insured adults	24.03438984
Arthritis	0.0

Asthma ER Admissions	16.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	85.7
Physically Disabled	76.0
Heart Attack ER Admissions	13.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	14.1
Elderly	80.7
English Speaking	22.0
Foreign-born	57.2

Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	80.7
Traffic Density	10.6
Traffic Access	0.0
Other Indices	—
Hardship	86.9
Other Decision Support	—
2016 Voting	17.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	82.0
Healthy Places Index Score for Project Location (b)	16.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	This will be the electric provider
Land Use	The project includes 18.73 acres of residential and a .85 acre park
Construction: Off-Road Equipment	Project specific construction equipment list
Operations: Fleet Mix	District accepted fleet mix 2027 operational year
Operations: Hearths	No fireplaces or woodstoves included in this project
Operations: Energy Use	Homes are not connected to natural gas. Electric demand for all-electric homes is estimated to require 30% higher.

Attachment D

Health Risk Assessment

Technical Report

Health Risk Assessment
For California Environmental Quality Act (CEQA)

Project Name:

Fernandes Subdivision
Tulare, CA

Prepared for:

4Creeks, Inc.
Visalia, CA

Author:

Core Environmental Consulting
Clovis, CA

Lead Agency:

City of Tulare

Date of Preparation:

February 2025

THIS PAGE IS INTENTIONALLY BLANK.

Contents

1 Executive Summary 1
2 Project Description 2
3 Health Risk Assessment Setting 5
3.1 San Joaquin Valley Air Pollution Control District 5
3.2 Diesel Particulate Matter 6
3.3 Thresholds of Significance 7
4 HRA Methodology 8
5 HRA Results 10
5.1 Construction Risk 10
5.2 Mitigation 10
6 References 11

Tables

Table 1 SJVPACD Thresholds of Significance – Toxic Air Contaminants 7
Table 2 HRA Results Compared to SJVAPCD Thresholds of Significance 10

Figures

Figure 1 Vicinity Map 3
Figure 2 Tentative Subdivision Map 4

1 Executive Summary

This technical report has been prepared to summarize the background, methodology, and results of a Health Risk Assessment (HRA) for the Fernandes Subdivision project (Project) in Tulare, California. The Project proposes development of a 120-lot, single-family residential subdivision, on the northwest corner W. Paige Avenue and S. Canal Street.

The Project is subject to the California Environmental Quality Act (CEQA), with City of Tulare (City) serving as the Lead Agency pursuant to the *CEQA Statute and Guidelines*[1] (CEQA Guidelines). An Initial Study is in progress and this HRA was completed to assess the potential significance of Toxic Air Contaminants (TAC) on nearby sensitive receptors.

The Project site is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD), which oversees the assessment of health risk associated with Toxic Air Contaminant (TAC) emissions from new development in the San Joaquin Valley Air Basin (SJVAB). SJVAPCD lays out a basic framework for understanding and assessing health risk, under CEQA, in its *Guidance for Assessing and Mitigating Air Quality Impacts*[2] (GAMAQI). Projects that would either place a new source of TAC in the vicinity of existing sensitive receptors, or would place new sensitive receptors in the vicinity of existing sources of TAC, must be assessed to determine whether the resulting health risk to sensitive receptors would exceed SJVAPCD established thresholds of significance for carcinogenic, acute, and chronic risk.

This HRA was prepared in accordance with the guidelines outlined in the Office of Environmental Health Hazard Assessment (OEHHA) *Guidance Manual for Preparation of Health Risk Assessments*[3], SJVAPCD Policy *APR 1906 – Framework for Performing Health Risk Assessments*[4], and SJVAPCD *Guidance for Air Dispersion Modeling*[5].

Construction health risk, associated with diesel particulate matter (DPM) emissions from construction vehicle and equipment use, was modeled using the USEPA *American Meteorological Society/EPA Regulatory model* (AERMOD) and CARB Hotspots Analysis and Reporting Program (HARP2) *Air Dispersion Modeling and Risk Tool*[6] (ADMRT).

The calculated health risks for Project construction DPM are below the SJVAPCD thresholds of significance. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations, and related impacts would be *less than* significant. The control measures included in the CalEEMod analysis were selected during primary air quality analysis included in the Initial Study, prior to this HRA; no additional mitigation is required outside of those measures that were already selected.

[1] (Association of Environmental Professionals, 2025)
[2] (San Joaquin Valley Air Pollution Control District, 2015)
[3] (Office of Environmental Health Hazard Asssessment, 2015)
[4] (San Joaquin Valley Air Pollution Control District, 2020)
[5] (San Joaquin Valley Air Pollution Control District, 2022a)
[6] (California Air Resources Board, 2022a)

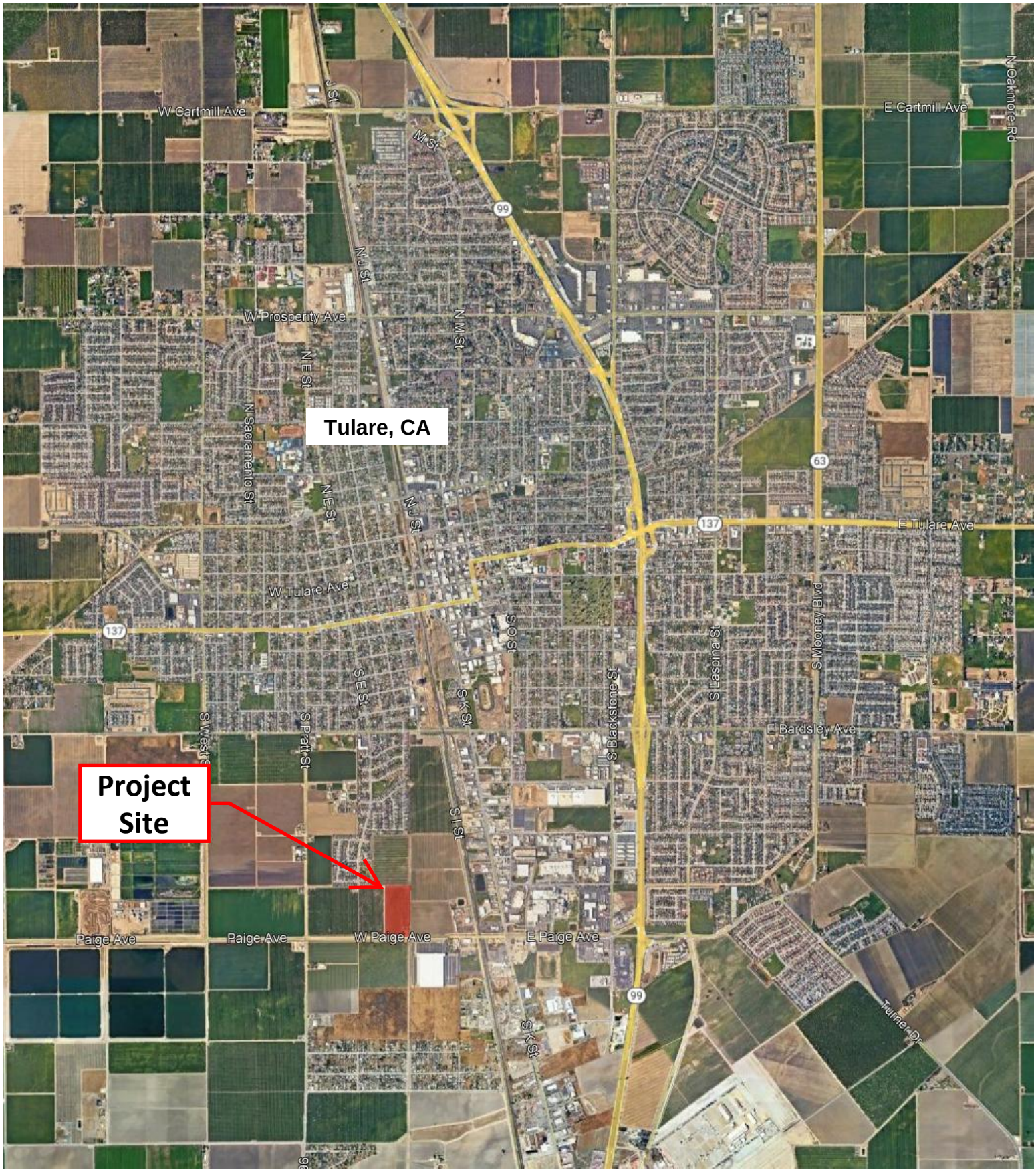
2 Project Description

The Project proposes development of a 120-lot, single-family residential subdivision in Tulare, California. The 19.6-acre project site is on the north side of W. Paige Avenue, approximately 0.4 miles east of S. Pratt Street. The current use is farmland, with one residence located in the southeast corner of the property. The Project would include all related infrastructure improvements including utilities, internal streets, a 0.85-acre city park, and a Class 1 mixed-use trail along Paige Avenue that will connect to planned infrastructure and provide future residents with improved access to citywide transportation networks and community amenities.

The Project site is topographically flat, with elevations ranging from 262 to 264 feet above mean seal level. The site is approximately 2 miles southwest of the center of Tulare, in a developing area. Surrounding land uses are primarily agricultural. Commercial uses are located to the east; residential uses to the north; and to the west and south are agricultural land.

According to the schedule included in the *California Emissions Estimator Model* (CalEEMod) analysis, construction is expected to last approximately 2 years, potentially starting as early as March 2026.

The Project will include a variety of features to lessen potential environmental impacts, all of which were selected outside of this HRA and described within the Initial Study; the CalEEMod analysis lists all measures that were included in the emissions calculations and a more detailed project description is provided in the Initial Study. A Vicinity Map and Tentative Subdivision Map are included below as Figure 1 and Figure 2, respectively.



CORE ENVIRONMENTAL CONSULTING Core Environmental Consulting Clovis, CA 93612 (559) 202-3941	PROJECT NAME **Fernandes Subdivision**	DATE **2/28/25**	SCALE **NOT TO SCALE**	**FIGURE 1** **VICINITY MAP**
	PROJECT NUMBER **24019**	DRAWN BY **JM**	LAT/LONG **36.183847, -119.349752**	

ARCHITECTURE | PLANNING | CIVIL | STRUCTURAL | SURVEYING

4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

FERNANDES SUBDIVISION

REQUIRED ENTITLEMENTS

- Tentative Subdivision Map
- Rezone
- Conditional Use Permit (Small Lot Residential)

SITE INFORMATION

APN:	174-030-008
Acreage:	±19.58 AC
Jurisdiction:	City of Tulare
Current Use:	Farmland, Single Family Residential
Proposed Use:	Single-Family Residential
Zoning (Existing):	R-1-5
Zoning (Proposed):	R-1-4
General Plan (Existing):	Low Density Residential
General Plan (Proposed):	Low Density Residential

UTILITIES

Water:	City of Tulare
Stormwater:	City of Tulare
Sewer:	Tie-in to existing 27" line in Paige Ave
Electricity:	Southern California Edison
Natural Gas:	Southern California Gas
Telephone:	AT&T

TYPICAL LOT SIZES

Number of Lots:	120
Average Lot Size:	3,825 SF (45' X 85')
Minimum Lot Size:	3,823 SF
Maximum Lot Size:	6,745 SF
Gross Density:	6.13 DU/Acre

PROJECT DIRECTORY

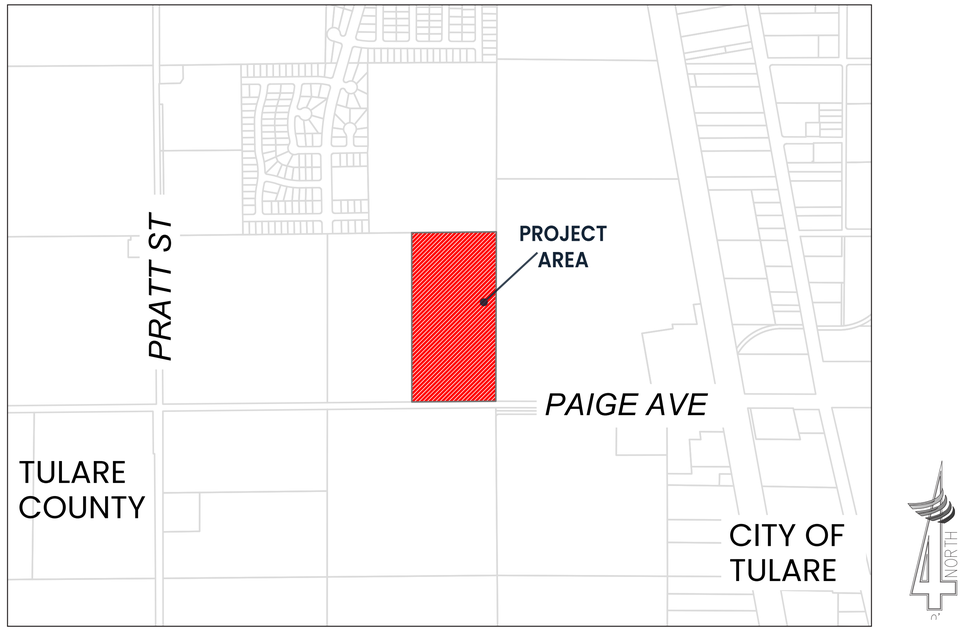
Applicant:
Artemis Partners, LLC
324 S. Santa Fe St., Ste. A
Visalia, CA 93292
Contact: Matt Ainley
Phone: (559) 737-3748

Owner:
BF Central Valley Holdings, LLC
18300 Redmond Way, Suite 120
Redmond, WA 98052
Contact: Shane Bouchard
Phone: (909) 600-4990

Agent:
Molly Baumeister, AICP (4Creeks, Inc.)
324 S Santa Fe St A
Visalia, CA 93292
Phone: (559) 802-3052
Contact: mollyb@4-creeks.com

Ellie Krantz (4Creeks, Inc.)
324 S Santa Fe St A
Visalia, CA 93292
Phone: (559) 802-3052
Contact: elliek@4-creeks.com

VICINITY MAP

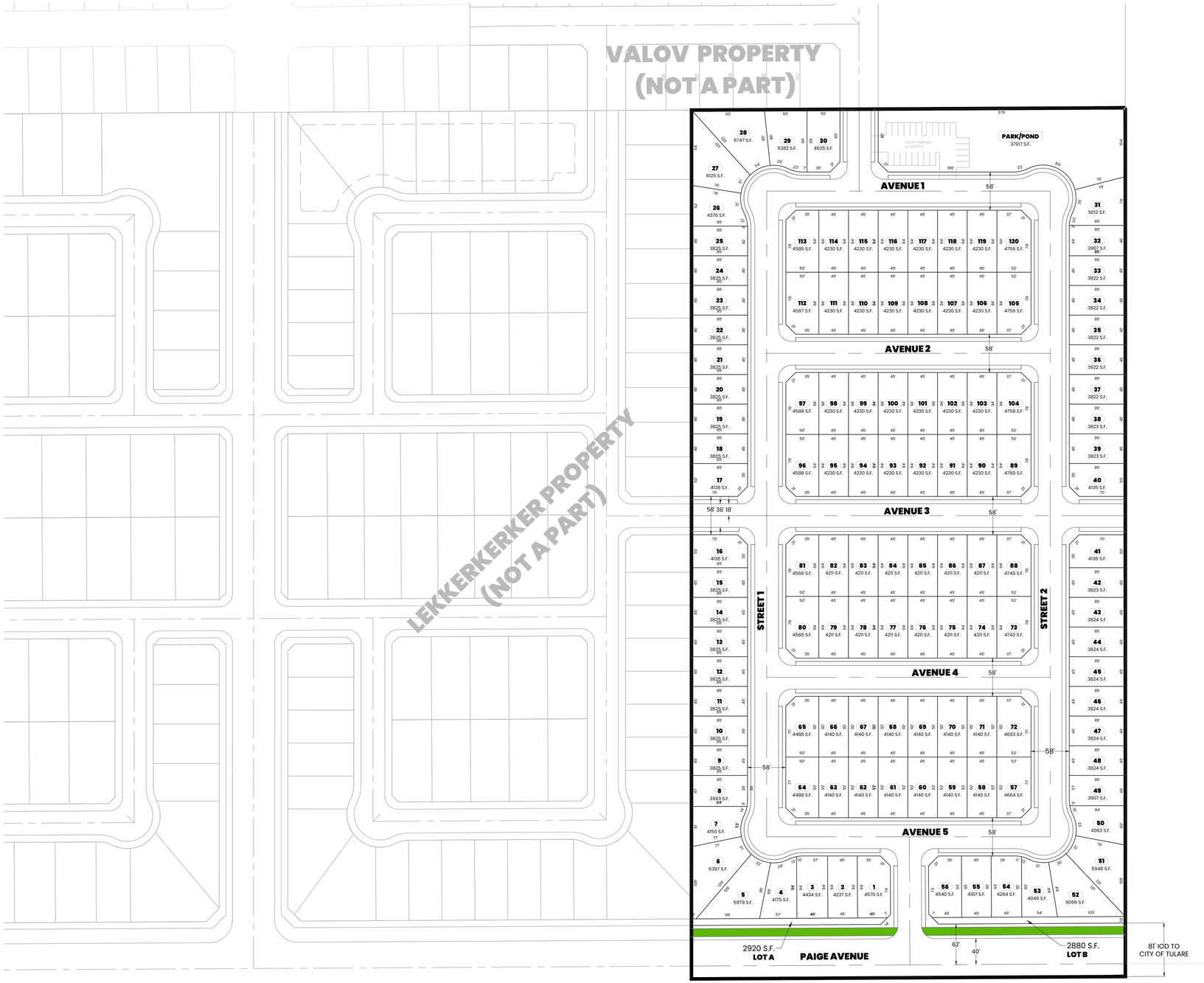


SHEET INDEX

P1.0 Tentative Subdivision Map
P2.0 Details

SET NOT FOR CONSTRUCTION

For planning purposes only, do not scale drawings



4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

SET NOT FOR CONSTRUCTION
For planning purposes only, do not scale drawings

TENTATIVE SUBDIVISION MAP

P1.0

3 Health Risk Assessment Setting

3.1 San Joaquin Valley Air Pollution Control District

The Project is located in the San Joaquin Valley Air Basin (SJVAB), which consists of eight counties: Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (biogenic) activities that produce emissions.

Area and stationary sources within SJVAB are under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). An overview of important air pollutants, and SJVPACD roles in controlling them, is provided in the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts*[7] (GAMAQI), along with in-depth discussions on the meteorology and geography that contribute to unhealthy levels of air pollution. This HRA focuses on Toxic Air Contaminants (TAC).

Toxic Air Contaminants (TAC), as defined by the California Health & Safety Code (CH&SC) §44321, are listed in Appendices AI and AII in AB 2588 Air Toxic "Hot Spots" and Assessment Act's Emissions Inventory Criteria and Guideline Regulation document. Potential health impacts from TACs are generally categorized into two groups: carcinogenic (cancer causing) effects and non-carcinogenic (non-cancer-causing) effects.

The non-carcinogenic effects can be further divided into long-term (chronic) health effects such as birth defects, neurological damage, or genetic damage; and short- term (acute) effects such as eye irritation, respiratory irritation, and nausea. The California TAC list identifies about 700 plus pollutants. Carcinogenic and/or non-carcinogenic toxicity criteria have been established for a subset of these pollutants by OEHHA, as required by CH&SC §44360. TACs used in determining the potential exposure to the public should not be confused with the 189 Hazardous Air Pollutants (HAP) listed in the Clean Air Act.

SJVAPCD oversees the assessment of health risk associated with TAC emissions from new development in the SJVAB. SJVAPCD lays out a basic framework for understanding and assessing health risk, under CEQA, in the GAMAQI.

The location of a development project is a major factor in determining whether the project will result in localized air quality impacts. The potential for adverse air quality impacts increases as the distance between the source of emissions and receptors decreases. Receptors include sensitive receptors and worker receptors. Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (these sensitive land uses may also be referred to as sensitive receptors). Worker receptors refer to employees and locations where people work. Impacts on sensitive receptors are of particular concern, because they are the people most vulnerable to the effects of air pollution.

[7] (San Joaquin Valley Air Pollution Control District, 2015)

From a health risk perspective there are two types of land use projects that have the potential to cause long-term public health risk impacts:

Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors.

Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxics sources.

Projects of either type must be assessed to determine whether the resulting health risk to sensitive receptors would exceed SJVAPCD established thresholds of significance for carcinogenic, non-carcinogenic acute, and non-carcinogenic chronic risk.

The OEHHA *Risk Assessment Guidelines* are the standards for estimating health risks. OEHHA is responsible for developing and providing toxicological and medical information relevant to decisions involving public health to state and local government agencies. Historically, state laws have required OEHHA to develop Risk Assessment Guidelines for estimating health risk associated with various sources of air pollution. Furthermore, the Children's Environmental Health Protection Act (SB 25, Escutia, 1999) requires OEHHA to biennially review risk assessment methods for air toxics, and related information, to ensure that they adequately protect infants and children.

The SJVAPCD risk management policy works in conjunction with the OEHHA *Risk Assessment Guidelines*. The SJVAPCD risk management policy further clarifies and provides guidance on the appropriate options to use, such as a longer exposure period and more conservative air dispersion modeling.

SJVAPCD staff members are considered leading statewide experts in the field of health risk assessment and have developed significant resources from guidance documents to database tools to assist other agencies, consultants, and regulated sources. Therefore, the SJVAPCD concludes that use of its risk management policy and the OEHHA *Risk Assessment Guidelines* is appropriate in determining significance within the environmental review process.

3.2 Diesel Particulate Matter[8]

As described in Section 4 (HRA Methodology), the Project could be a substantial source of Diesel Particulate Matter (DPM) during construction. DPM has been identified as a toxic air contaminant by ARB based on its potential exposures and health concerns. OEHHA evaluated over 30 human epidemiological studies on the carcinogenic effects of diesel exhaust. These studies found that long-term occupational exposures to diesel exhaust were associated with a 40 percent increase, on average, in the relative risk of lung cancer. These epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer.

A number of adverse long-term noncancer effects have been associated with exposure to diesel exhaust. Occupational studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed. Reductions in pulmonary function have also been reported following occupational exposures in chronic studies.

[8] (California Air Pollution Control Officers Association, 2024)

Adverse short-term health effects have also been associated with exposures to diesel exhaust. Occupational exposures to DPM have been associated with significant cross-shift decreases in lung function. Increased cough, labored breathing, chest tightness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A significant increase in airway resistance and increases in eye and nasal irritation were observed in human volunteers following one-hour chamber exposure to diesel exhaust.

3.3 Thresholds of Significance

This HRA focuses on answering the following question from the Air Quality section of Appendix G in the *CEQA Guidelines*[9]:

3. Would the Project expose sensitive receptors to substantial pollutant concentrations?

The *CEQA Guidelines* state that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination.

SJVAPCD has established the following thresholds of significance for risk exposure to TAC:

Table 1 SJVPACD Thresholds of Significance – Toxic Air Contaminants

CARCINOGENS	Maximally Exposed Individual risk equals or exceeds 20 in one million
NON CARCINOGENS	**Acute**: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Source: (San Joaquin Valley Air Pollution Control District, 2015)

Therefore, if the calculated risk exposure from Project TAC emissions is below the SJVAPCD thresholds of significance, it can be concluded that the Project would not expose sensitive receptors to substantial pollutant concentrations and this impact would be considered less than significant under CEQA.

[9] (Association of Environmental Professionals, 2025)

4 HRA Methodology

The Project could result in toxic air contaminant (TAC) emissions during construction and, to a limited extent, during operation. The primary TAC emissions resulting from Project construction would include diesel particulate matter (DPM), exhausted during the operation of on- and-off road diesel-fueled vehicles and equipment.

DPM is the particulate component of diesel exhaust and has been identified as a TAC by the California Air Resources Board (CARB) based on its potential exposures and health concerns. Epidemiological studies strongly suggest a relationship between occupational diesel exhaust exposure and lung cancer. A number of adverse acute and chronic effects have also been associated with exposure to diesel exhaust.[10]

The Project would develop a residential subdivision. Operation would not include any substantial sources of TAC.[11] Additional health risk could occur from the use of household cleaners, commercial products, and other hazardous materials used by individual residents. However, these sources would be intermittent, localized to the point of activity, and up to the discretion of individual residents. Determining the use of such TAC sources would be highly speculative, and compliance with existing federal, state, and local regulations, which are strictly enforced outside of CEQA, would ensure impacts from Project operation remain less than significant.

Because there are no other substantial sources of TAC expected, during construction or operation, this HRA is focused on the health risk associated with construction DPM.

Construction health risk was evaluated in the following steps:

1. Estimated DPM Emissions. Project air pollutant emissions were estimated using the *California Emissions Estimator Model*[12] (CalEEMod) (Version 2022.1.1.29). SJVAPCD considers exhaust particulate matter 2.5 microns and smaller (PM2.5) to be a reasonable surrogate for DPM, and the maximum (worst year) annual construction emissions were used for subsequent modeling and calculation (described below). Project-specific information was used where available; CalEEMod defaults were used for all other inputs. Control measures from the primary air quality analysis, described in the initial study, were incorporated into the emissions calculations, prior to this HRA; no additional mitigation was required as a result of this analysis. The CalEEMod results are attached as Appendix A.
2. Modeled air dispersion. The United States Environmental Protection Agency's (U.S. EPA) *American Meteorological Society/EPA Regulatory Model* (AERMOD) air dispersion model was used to model the annual downwind air concentration at nearby receptors, based on a normalized emission rate of one gram per second. Meteorological data were obtained from SJVAPCD (Visalia met site), along with required modeling parameters. Terrain was incorporated using the built-in WebGIS tool. Sensitive receptors include nearby residences to the northwest, with the closest being approximately 120 meters from the Project site perimeter. A total of 131

[10] (California Air Resources Board, 2024)
[11] As defined by the California Health & Safety Code (CH&SC) §44321 and listed in Appendices AI and AII in AB 2588 Air Toxic "Hot Spots" and Assessment Act's Emissions Inventory Criteria and Guideline Regulation document. (San Joaquin Valley Air Pollution Control District, 2015)
[12] (California Air Pollution Control Officers Association, 2022)

receptors (resident and worker) were selected for a representative analysis, within a modeling domain radius of 1 kilometer.

3. Calculated Risk. Normalized downwind air concentrations for each receptor (modeled in the step above) were imported into the CARB Hotspots Analysis and Reporting Program (HARP2) *Air Dispersion Modeling and Risk Tool*[13] (ADMRT) and combined with the toxic emissions data (DPM emissions from the CalEEMod step described above) to estimate the ground level concentrations of DPM at each receptor. Cancer risk and chronic hazard index (HI) were calculated in ADMRT using SJVAPCD-required exposure parameters and Project information. OEHHA has not established a Reference Exposure Level (REL) for 8-hour chronic, or acute health risk from DPM. Thus, the 8-hour chronic and acute HI are not calculated for HRA where the only substantial TAC is DPM, except in unusual situations such as when a sensitive receptor is located directly above the emission release point (e.g., on a hillside or in a multistory apartment building).[14]

Results of the AERMOD modeling and ADMRT calculations are attached in Appendix B and Appendix C, respectively, along with a map of receptors. Modeling input and output files will be made available to reviewing agencies upon request.

[13] (California Air Resources Board, 2022a)
[14] (California Air Resources Board, 2024)

5 HRA Results

5.1 Construction Risk

The CalEEMod results (Appendix A) show that maximum annual construction emissions of PM2.5 exhaust would be 0.01 metric tons per year (MT/yr), or approximately 22 pounds per year (lb/yr). The exposure period for sensitive receptors would be the construction duration of approximately 2 years.

Results of the construction risk assessments are compared to SJVAPCD thresholds of significance in the table below. The highest risk exposure occurred at receptor 1, approximately 120 meters northwest of the Project site.

Table 2 HRA Results Compared to SJVAPCD Thresholds of Significance

RISK	CARCINOGEN (risk in one million)	CHRONIC HAZARD INDEX
Construction	2.39	0.0014
Thresholds of Significance	20	1

Notes: *Calculation based on mitigated emissions. Hazard indices are for Maximally Exposed Individuals. No HI was calculated for 8-hour Chronic or Acute risk because OEHHA has not established REL.* (California Air Resources Board, 2024)

Sources: *Appendix C HARP2 ADMRT Results*

As shown in the Table above, construction risk would be below the SJVAPCD Thresholds of Significance. Therefore, consistent with the *CEQA Guidelines*[15], the Project would not expose sensitive receptors to substantial pollutant concentrations, and this impact would be considered *less than significant.*

5.2 Mitigation

Health risk impacts to sensitive receptors due to Project TAC emissions would be *less than significant*. The control measures included in the CalEEMod analysis were incorporated during the primary air quality analysis in the Initial Study, prior to this HRA. No additional mitigation is required outside of those measures that were already selected and included in the emissions estimates.

[15] (Association of Environmental Professionals, 2025)

6 References

Association of Environmental Professionals. (2025). *2025 California Environmental Quality Act (CEQA) Statute and Guidelines.*

California Air Pollution Control Officers Association. (2022). *California Emissions Estimator Model.* Retrieved from https://caleemod.com/.

California Air Pollution Control Officers Association. (2024). *Non-Vehicular Diesel Engine Risk Assessment Guidance.* Retrieved from https://ww2.arb.ca.gov/sites/default/files/classic/ab2588/2024%20DICE%20Screening%20Risk%20Guidelines.pdf.

California Air Resources Board. (2022a). *HARP Air Dispersion Modeling and Risk Tool.* Retrieved from https://ww2.arb.ca.gov/resources/documents/harp-air-dispersion-modeling-and-risk-tool.

California Air Resources Board. (2024). *Non-Vehicular Diesel Engine Risk Assessment Guidance.* Retrieved from https://ww2.arb.ca.gov/resources/documents/non-vehicular-diesel-engine-risk-assessment-guidance.

Office of Environmental Health Hazard Asssessment. (2015). *Risk Assessment Guidelines - Guidance Manual for Preparation of Health Risk Assessments.* Retrieved from https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

San Joaquin Valley Air Pollution Control District. (2015). *Guidance for Assessing and Mitigating Air Quality Impacts.* Retrieved from https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf.

San Joaquin Valley Air Pollution Control District. (2015). *Guidance for Assessing and Mitigating Air Quality Impacts.* Retrieved from https://www.valleyair.org/transportation/GAMAQI.pdf.

San Joaquin Valley Air Pollution Control District. (2020). *Policy APR 1906 - Framework for Performing Health Risk Assessments.* Retrieved from https://ww2.valleyair.org/media/0shm0mlk/apr-1906.pdf.

San Joaquin Valley Air Pollution Control District. (2022a). *Guidance for Air Dispersion Modeling.* Retrieved from https://ww2.valleyair.org/media/zlbhrg22/modeling_guidance.pdf.

Appendix A. CalEEMod Results

Prepared by 4Creeks, Inc.:

January 2025

Fernandes - District Rule 9510 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

3.2. Demolition (2026) - Mitigated

3.3. Site Preparation (2026) - Unmitigated

3.4. Site Preparation (2026) - Mitigated

3.5. Grading (2026) - Unmitigated

3.6. Grading (2026) - Mitigated

3.7. Building Construction (2026) - Unmitigated

3.8. Building Construction (2026) - Mitigated

3.9. Building Construction (2027) - Unmitigated

3.10. Building Construction (2027) - Mitigated

3.11. Paving (2027) - Unmitigated

3.12. Paving (2027) - Mitigated

3.13. Architectural Coating (2027) - Unmitigated

3.14. Architectural Coating (2027) - Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fernandes - District Rule 9510
Construction Start Date	3/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.90
Precipitation (days)	24.4
Location	36.18382092729347, -119.34975880649861
County	Tulare
City	Tulare
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2746
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

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
Single Family Housing	120	Dwelling Unit	18.7	234,000	23,400	—	406	—

City Park	0.85	Acre	0.85	0.00	37,071	37,071	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Transportation	T-32*	Orient Project Toward Transit, Bicycle, or Pedestrian Facility
Transportation	T-35*	Provide Tra c Calming Measures
Energy	E-10-B	Establish Onsite Renewable Energy Systems: Solar Power
Energy	E-12-A	Install Alternative Type of Water Heater in Place of Gas Storage Tank Heater in Residences
Energy	E-12-B	Install Electric Space Heater in Place of Natural Gas Heaters in Residences
Energy	E-13	Install Electric Ranges in Place of Gas Ranges

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	3.47	2.93	25.4	25.6	0.06	1.06	9.32	10.4	0.98	3.68	4.66	—	6,297	6,297	0.26	0.07	2.07	6,320
Mit.	0.67	0.67	3.67	33.2	0.06	0.12	3.71	3.83	0.12	1.45	1.57	—	6,297	6,297	0.26	0.07	2.07	6,320
% Reduced	81%	77%	86%	-30%	—	89%	60%	63%	88%	61%	66%	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.81	2.36	21.1	19.8	0.03	0.85	6.59	7.00	0.78	3.38	3.75	—	3,794	3,794	0.15	0.07	0.05	3,819
Mit.	0.51	0.45	4.91	18.9	0.03	0.07	2.60	2.63	0.07	1.32	1.35	—	3,794	3,794	0.15	0.07	0.05	3,819
% Reduced	82%	81%	77%	4%	—	92%	61%	62%	91%	61%	64%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.96	0.81	6.62	7.60	0.01	0.26	1.15	1.41	0.23	0.44	0.68	—	1,724	1,724	0.07	0.04	0.43	1,738
Mit.	0.30	0.28	1.88	8.86	0.01	0.04	0.58	0.63	0.04	0.20	0.24	—	1,724	1,724	0.07	0.04	0.43	1,738
% Reduced	69%	65%	72%	-17%	—	84%	49%	56%	83%	54%	64%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.15	1.21	1.39	< 0.005	0.05	0.21	0.26	0.04	0.08	0.12	—	285	285	0.01	0.01	0.07	288
Mit.	0.06	0.05	0.34	1.62	< 0.005	0.01	0.11	0.11	0.01	0.04	0.04	—	285	285	0.01	0.01	0.07	288
% Reduced	69%	65%	72%	-17%	—	84%	49%	56%	83%	54%	64%	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.47	2.93	25.4	25.6	0.06	1.06	9.32	10.4	0.98	3.68	4.66	—	6,297	6,297	0.26	0.07	2.07	6,320
2027	1.12	0.94	6.93	10.1	0.02	0.24	0.43	0.66	0.22	0.10	0.32	—	2,239	2,239	0.09	0.07	1.87	2,265
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2026	2.81	2.36	21.1	19.8	0.03	0.85	6.59	7.00	0.78	3.38	3.75	—	3,794	3,794	0.15	0.07	0.05	3,819
2027	1.08	0.92	6.99	9.43	0.02	0.24	0.43	0.66	0.22	0.10	0.32	—	2,197	2,197	0.08	0.07	0.05	2,220
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.96	0.81	6.62	7.60	0.01	0.26	1.15	1.41	0.23	0.44	0.68	—	1,724	1,724	0.07	0.04	0.43	1,738
2027	0.46	0.39	2.99	4.15	0.01	0.10	0.17	0.28	0.09	0.04	0.14	—	929	929	0.04	0.03	0.33	939
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.18	0.15	1.21	1.39	< 0.005	0.05	0.21	0.26	0.04	0.08	0.12	—	285	285	0.01	0.01	0.07	288
2027	0.08	0.07	0.55	0.76	< 0.005	0.02	0.03	0.05	0.02	0.01	0.02	—	154	154	0.01	< 0.005	0.05	155

2.3. Construction Emissions by Year, Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.67	0.67	3.67	33.2	0.06	0.12	3.71	3.83	0.12	1.45	1.57	—	6,297	6,297	0.26	0.07	2.07	6,320
2027	0.52	0.46	2.93	11.7	0.02	0.06	0.43	0.49	0.06	0.10	0.16	—	2,239	2,239	0.09	0.07	1.87	2,265
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.51	0.45	4.91	18.9	0.03	0.07	2.60	2.63	0.07	1.32	1.35	—	3,794	3,794	0.15	0.07	0.05	3,819
2027	0.48	0.44	3.00	11.0	0.02	0.06	0.43	0.49	0.06	0.10	0.16	—	2,197	2,197	0.08	0.07	0.05	2,220
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.30	0.28	1.88	8.86	0.01	0.04	0.58	0.63	0.04	0.20	0.24	—	1,724	1,724	0.07	0.04	0.43	1,738
2027	0.20	0.18	1.27	4.79	0.01	0.03	0.17	0.20	0.02	0.04	0.07	—	929	929	0.04	0.03	0.33	939
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.06	0.05	0.34	1.62	< 0.005	0.01	0.11	0.11	0.01	0.04	0.04	—	285	285	0.01	0.01	0.07	288
2027	0.04	0.03	0.23	0.87	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	154	154	0.01	< 0.005	0.05	155

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.	10.2	9.86	3.53	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,962	10,037	8.02	0.40	26.9	10,383
Mit.	10.2	9.86	3.52	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	8,702	8,777	7.95	0.39	26.9	9,119
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	13%	13%	1%	2%	—	12%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.05	8.69	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,157	9,232	8.07	0.43	2.33	9,565
Mit.	9.05	8.69	4.06	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	7,897	7,973	7.99	0.42	2.33	8,301
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	14%	14%	1%	2%	—	13%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	9,219	9,295	8.04	0.41	12.3	9,629
Mit.	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	7,960	8,035	7.96	0.40	12.3	8,365
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	14%	14%	1%	2%	—	13%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,526	1,539	1.33	0.07	2.04	1,594
Mit.	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,318	1,330	1.32	0.07	2.04	1,385
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	—	< 0.5%	2%	—	< 0.5%	—	14%	14%	1%	2%	—	13%

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	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Area	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	10.2	9.86	3.53	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,962	10,037	8.02	0.40	26.9	10,383
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Area	5.03	5.03	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.05	8.69	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,157	9,232	8.07	0.43	2.33	9,565
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.01	3.67	3.68	30.8	0.07	0.05	6.76	6.80	0.05	1.71	1.76	—	7,155	7,155	0.38	0.37	10.6	7,284
Area	5.34	5.32	0.03	3.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	8.98	8.98	< 0.005	< 0.005	—	9.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	9,219	9,295	8.04	0.41	12.3	9,629
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206
Area	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	335	335	0.02	< 0.005	—	336
Water	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
Total	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,526	1,539	1.33	0.07	2.04	1,594

2.6. Operations Emissions by Sector, Mitigated

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	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Area	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	10.2	9.86	3.52	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	8,702	8,777	7.95	0.39	26.9	9,119
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Area	5.03	5.03	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.05	8.69	4.06	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	7,897	7,973	7.99	0.42	2.33	8,301
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.01	3.67	3.68	30.8	0.07	0.05	6.76	6.80	0.05	1.71	1.76	—	7,155	7,155	0.38	0.37	10.6	7,284
Area	5.34	5.32	0.03	3.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	8.98	8.98	< 0.005	< 0.005	—	9.01
Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	7,960	8,035	7.96	0.40	12.3	8,365
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206
Area	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	126	126	0.01	< 0.005	—	126
Water	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
Total	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,318	1,330	1.32	0.07	2.04	1,385

3. Construction Emissions Details

3.1. Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.31	0.31	—	0.05	0.05	—	—	—	—	—	—	—
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	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.67	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	0.01	0.01	0.01	117
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	0.01	0.01	0.33	0.08	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	253	253	0.01	0.04	0.02	264
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.53	6.53	< 0.005	< 0.005	0.01	6.63
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	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.29	2.29	< 0.005	< 0.005	< 0.005	2.40

3.2. Demolition (2026) - Mitigated

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

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

Off-Road Equipment	0.36	0.36	4.51	18.2	0.03	0.06	—	0.06	0.06	—	0.06	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.31	0.31	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.25	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.05	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.67	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	0.01	0.01	0.01	117
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	0.01	0.01	0.33	0.08	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	253	253	0.01	0.04	0.02	264
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.53	6.53	< 0.005	< 0.005	0.01	6.63
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	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.29	2.29	< 0.005	< 0.005	< 0.005	2.40

3.3. Site Preparation (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	1.21	1.01	9.38	8.97	0.02	0.40	—	0.40	0.37	—	0.37	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	6.55	6.55	—	3.37	3.37	—	—	—	—	—	—	—
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 Equipm	1.21	1.01	9.38	8.97	0.02	0.40	—	0.40	0.37	—	0.37	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	6.55	6.55	—	3.37	3.37	—	—	—	—	—	—	—
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	0.03	0.03	0.26	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.7	45.7	< 0.005	< 0.005	—	45.9
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
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	0.30	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	0.16	44.0

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.3	38.3	< 0.005	< 0.005	< 0.005	38.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
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	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
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

3.4. Site Preparation (2026) - Mitigated

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	0.16	0.16	0.82	8.76	0.02	0.03	—	0.03	0.03	—	0.03	—	1,669	1,669	0.07	0.01	—	1,675

Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
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	0.16	0.16	0.82	8.76	0.02	0.03	—	0.03	0.03	—	0.03	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.02	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	45.7	45.7	< 0.005	< 0.005	—	45.9
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	0.16	44.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.3	38.3	< 0.005	< 0.005	< 0.005	38.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
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	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (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	3.39	2.85	25.4	24.6	0.06	1.06	—	1.06	0.98	—	0.98	—	6,167	6,167	0.25	0.05	—	6,188
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
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	0.28	0.23	2.09	2.03	< 0.005	0.09	—	0.09	0.08	—	0.08	—	507	507	0.02	< 0.005	—	509
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
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	0.05	0.04	0.38	0.37	< 0.005	0.02	—	0.02	0.01	—	0.01	—	83.9	83.9	< 0.005	< 0.005	—	84.2

Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
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	0.91	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	130	130	0.01	0.01	0.47	132
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	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	0.02	9.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.65
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

3.6. Grading (2026) - Mitigated

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	0.59	0.59	3.62	32.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,167	6,167	0.25	0.05	—	6,188
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—	—
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	0.05	0.05	0.30	2.66	< 0.005	0.01	—	0.01	0.01	—	0.01	—	507	507	0.02	< 0.005	—	509
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.12	0.12	—	—	—	—	—	—	—
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	0.05	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	83.9	83.9	< 0.005	< 0.005	—	84.2
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—

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	0.91	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	130	130	0.01	0.01	0.47	132
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	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	0.02	9.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (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	0.90	0.75	6.69	7.56	0.02	0.25	—	0.25	0.23	—	0.23	—	1,584	1,584	0.06	0.01	—	1,590
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	0.90	0.75	6.69	7.56	0.02	0.25	—	0.25	0.23	—	0.23	—	1,584	1,584	0.06	0.01	—	1,590
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	0.39	0.32	2.87	3.24	0.01	0.11	—	0.11	0.10	—	0.10	—	679	679	0.03	0.01	—	681
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	0.07	0.06	0.52	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	112	112	< 0.005	< 0.005	—	113
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	0.24	0.23	0.15	2.62	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	374	374	0.02	0.01	1.35	381
Vendor	0.02	0.01	0.39	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	294	294	0.01	0.04	0.73	308

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	0.22	0.19	0.20	1.93	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	331	331	0.02	0.01	0.03	336
Vendor	0.02	0.01	0.42	0.15	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	295	295	0.01	0.04	0.02	308
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	0.09	0.09	0.08	0.88	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	147	147	0.01	0.01	0.25	149
Vendor	0.01	< 0.005	0.18	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.14	132
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	0.02	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.9
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

3.8. Building Construction (2026) - Mitigated

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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.11	1.04	3.91	0.01	0.03	—	0.03	0.02	—	0.02	—	679	679	0.03	0.01	—	681
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	112	112	< 0.005	< 0.005	—	113
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	0.24	0.23	0.15	2.62	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	374	374	0.02	0.01	1.35	381
Vendor	0.02	0.01	0.39	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	294	294	0.01	0.04	0.73	308
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	0.22	0.19	0.20	1.93	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	331	331	0.02	0.01	0.03	336

Vendor	0.02	0.01	0.42	0.15	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	295	295	0.01	0.04	0.02	308
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	0.09	0.09	0.08	0.88	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	147	147	0.01	0.01	0.25	149
Vendor	0.01	< 0.005	0.18	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.14	132
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	0.02	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.9
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

3.9. Building Construction (2027) - 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	0.87	0.73	6.41	7.53	0.02	0.23	—	0.23	0.21	—	0.21	—	1,584	1,584	0.06	0.01	—	1,590
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	0.87	0.73	6.41	7.53	0.02	0.23	—	0.23	0.21	—	0.21	—	1,584	1,584	0.06	0.01	—	1,590

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	0.34	0.29	2.53	2.98	0.01	0.09	—	0.09	0.08	—	0.08	—	626	626	0.03	0.01	—	628
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	0.06	0.05	0.46	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	104	104	< 0.005	< 0.005	—	104
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	0.23	0.20	0.14	2.41	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	367	367	0.02	0.01	1.22	373
Vendor	0.02	0.01	0.38	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.65	302
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	0.19	0.18	0.18	1.77	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	324	324	0.01	0.01	0.03	329
Vendor	0.02	0.01	0.40	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.02	302
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	0.08	0.07	0.07	0.74	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	133	133	0.01	0.01	0.21	135
Vendor	0.01	< 0.005	0.16	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.11	119

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	0.01	0.01	0.01	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.03	22.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.9	18.9	< 0.005	< 0.005	0.02	19.8
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

3.10. Building Construction (2027) - Mitigated

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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.11	0.10	0.96	3.61	0.01	0.02	—	0.02	0.02	—	0.02	—	626	626	0.03	0.01	—	628

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	104	104	< 0.005	< 0.005	—	104
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	0.23	0.20	0.14	2.41	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	367	367	0.02	0.01	1.22	373
Vendor	0.02	0.01	0.38	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.65	302
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	0.19	0.18	0.18	1.77	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	324	324	0.01	0.01	0.03	329
Vendor	0.02	0.01	0.40	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.02	302
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	0.08	0.07	0.07	0.74	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	133	133	0.01	0.01	0.21	135
Vendor	0.01	< 0.005	0.16	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.11	119
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	0.01	0.01	0.01	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.03	22.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.9	18.9	< 0.005	< 0.005	0.02	19.8
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

3.11. Paving (2027) - 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	0.44	0.37	3.47	4.98	0.01	0.15	—	0.15	0.14	—	0.14	—	756	756	0.03	0.01	—	758
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.4	41.4	< 0.005	< 0.005	—	41.5
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.85	6.85	< 0.005	< 0.005	—	6.88
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.42	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.7	63.7	< 0.005	< 0.005	0.21	64.7
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	0.01	3.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
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

3.12. Paving (2027) - Mitigated

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	0.08	0.08	0.97	5.30	0.01	0.01	—	0.01	0.01	—	0.01	—	756	756	0.03	0.01	—	758
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.05	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.4	41.4	< 0.005	< 0.005	—	41.5
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.85	6.85	< 0.005	< 0.005	—	6.88
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.42	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.7	63.7	< 0.005	< 0.005	0.21	64.7
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	0.01	3.25

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
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

3.13. Architectural Coating (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
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	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.48	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.24	74.6
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	0.01	3.74
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	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
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

3.14. Architectural Coating (2027) - Mitigated

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-Roa Equipment	0.02	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
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-Roa d Equipm ent	< 0.005	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
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-Roa d Equipm ent	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.48	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.24	74.6
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	0.01	3.74

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	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.57	4.22	3.46	38.6	0.08	0.05	7.01	7.06	0.05	1.78	1.82	—	7,868	7,868	0.36	0.36	25.1	8,009
City Park	0.01	0.01	0.01	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.07	20.5
Total	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.02	3.66	4.06	30.4	0.07	0.05	7.01	7.06	0.05	1.78	1.82	—	7,083	7,083	0.41	0.39	0.65	7,211
City Park	0.01	0.01	0.01	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	< 0.005	18.8

Total	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.73	0.67	0.67	5.61	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,183	1,183	0.06	0.06	1.76	1,204
City Park	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.68
Total	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206

4.1.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.57	4.22	3.46	38.6	0.08	0.05	7.01	7.06	0.05	1.78	1.82	—	7,868	7,868	0.36	0.36	25.1	8,009
City Park	0.01	0.01	0.01	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.07	20.5
Total	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.02	3.66	4.06	30.4	0.07	0.05	7.01	7.06	0.05	1.78	1.82	—	7,083	7,083	0.41	0.39	0.65	7,211
City Park	0.01	0.01	0.01	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	< 0.005	18.8
Total	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.73	0.67	0.67	5.61	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,183	1,183	0.06	0.06	1.76	1,204
City Park	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.68
Total	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	335	335	0.02	< 0.005	—	336
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	335	335	0.02	< 0.005	—	336

4.2.2. Electricity Emissions By Land Use - Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	128	128	0.01	< 0.005	—	128

City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	128	128	0.01	< 0.005	—	128

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-1.87	-1.87	> -0.005	> -0.005	—	-1.88
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-1.87	-1.87	> -0.005	> -0.005	—	-1.88

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.63	0.60	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.2	18.2	< 0.005	< 0.005	—	18.3
Total	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	5.03	5.03	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.92	0.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.49
Total	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49

4.3.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.63	0.60	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.2	18.2	< 0.005	< 0.005	—	18.3
Total	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	5.03	5.03	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.92	0.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.49

Total	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.62	5.10	6.72	0.17	< 0.005	—	12.1
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.69	0.69	< 0.005	< 0.005	—	0.70
Total	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8

4.4.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.62	5.10	6.72	0.17	< 0.005	—	12.1
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.69	0.69	< 0.005	< 0.005	—	0.70
Total	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.8
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9

4.5.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.8
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28

4.6.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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
Demolition	Demolition	3/1/2026	3/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	3/30/2026	4/13/2026	5.00	10.0	—
Grading	Grading	4/14/2026	5/26/2026	5.00	30.0	—
Building Construction	Building Construction	5/27/2026	7/21/2027	5.00	300	—
Paving	Paving	7/22/2027	8/19/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	8/20/2027	9/17/2027	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Tier 4 Final	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40

Grading	Tractors/Loaders/Back	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Grading	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	1.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Back hoes	Diesel	Tier 4 Final	1.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Final	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.4	LDA,LDT1,LDT2
Demolition	Vendor	—	7.43	HHDT,MHDT
Demolition	Hauling	3.65	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.4	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.43	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—

Grading	Worker	15.0	11.4	LDA,LDT1,LDT2
Grading	Vendor	—	7.43	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.2	11.4	LDA,LDT1,LDT2
Building Construction	Vendor	12.8	7.43	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	11.4	LDA,LDT1,LDT2
Paving	Vendor	—	7.43	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.64	11.4	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.43	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.4	LDA,LDT1,LDT2
Demolition	Vendor	—	7.43	HHDT,MHDT
Demolition	Hauling	3.65	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	5.00	11.4	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.43	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.4	LDA,LDT1,LDT2
Grading	Vendor	—	7.43	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.2	11.4	LDA,LDT1,LDT2
Building Construction	Vendor	12.8	7.43	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	11.4	LDA,LDT1,LDT2
Paving	Vendor	—	7.43	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.64	11.4	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.43	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	6,300	—
Site Preparation	0.00	0.00	5.00	0.00	—
Grading	0.00	0.00	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.32

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.32	0%
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005
2027	0.00	532	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
Single Family Housing	1,133	1,145	1,026	408,529	9,850	9,955	8,922	3,552,360
City Park	0.66	1.67	1.86	357	8.45	21.2	23.7	4,545

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	1,133	1,145	1,026	408,529	9,850	9,955	8,922	3,552,360
City Park	0.66	1.67	1.86	357	8.45	21.2	23.7	4,545

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	120
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	120
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

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)
—	—	—	—	—

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

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)
Single Family Housing	1,386,288	532	0.0330	0.0040	0.00
City Park	0.00	532	0.0330	0.0040	0.00

5.11.2. Mitigated

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)
Single Family Housing	529,890	532	0.0330	0.0040	-35,284
City Park	0.00	532	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)
Single Family Housing	5,107,518	412,755
City Park	0.00	1,188,908

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	5,107,518	412,755
City Park	0.00	1,188,908

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	121	—
City Park	0.07	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	121	—
City Park	0.07	—

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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.4	annual days of extreme heat
Extreme Precipitation	0.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

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

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7

AQ-PM	97.9
AQ-DPM	22.7
Drinking Water	79.0
Lead Risk Housing	45.6
Pesticides	80.2
Toxic Releases	36.4
Traffic	4.76
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	30.9
Haz Waste Facilities/Generators	80.5
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	79.6
Cardio-vascular	93.1
Low Birth Weights	62.9
Socioeconomic Factor Indicators	—
Education	91.6
Housing	55.1
Linguistic	94.8
Poverty	84.9
Unemployment	63.4

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	12.83202874
Employed	20.45425382
Median HI	18.70909791
Education	—
Bachelor's or higher	2.746054151
High school enrollment	100
Preschool enrollment	44.86077249
Transportation	—
Auto Access	45.25856538
Active commuting	12.97318106
Social	—
2-parent households	42.39702297
Voting	12.19042731
Neighborhood	—
Alcohol availability	60.19504684
Park access	52.12370076
Retail density	9.072244322
Supermarket access	26.20300269
Tree canopy	4.812010779
Housing	—
Homeownership	45.46387784
Housing habitability	43.2567689
Low-inc homeowner severe housing cost burden	45.7590145
Low-inc renter severe housing cost burden	38.6629026
Uncrowded housing	24.97112794
Health Outcomes	—
Insured adults	24.03438984
Arthritis	0.0

Asthma ER Admissions	16.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	85.7
Physically Disabled	76.0
Heart Attack ER Admissions	13.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	14.1
Elderly	80.7
English Speaking	22.0
Foreign-born	57.2

Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	80.7
Traffic Density	10.6
Traffic Access	0.0
Other Indices	—
Hardship	86.9
Other Decision Support	—
2016 Voting	17.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	82.0
Healthy Places Index Score for Project Location (b)	16.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	This will be the electric provider
Land Use	The project includes 18.73 acres of residential and a .85 acre park
Construction: Off-Road Equipment	Project specific construction equipment list
Operations: Fleet Mix	District accepted fleet mix 2027 operational year
Operations: Hearths	No fireplaces or woodstoves included in this project
Operations: Energy Use	Homes are not connected to natural gas. Electric demand for all-electric homes is estimated to require 30% higher.

Appendix B. AERMOD Modeling Results

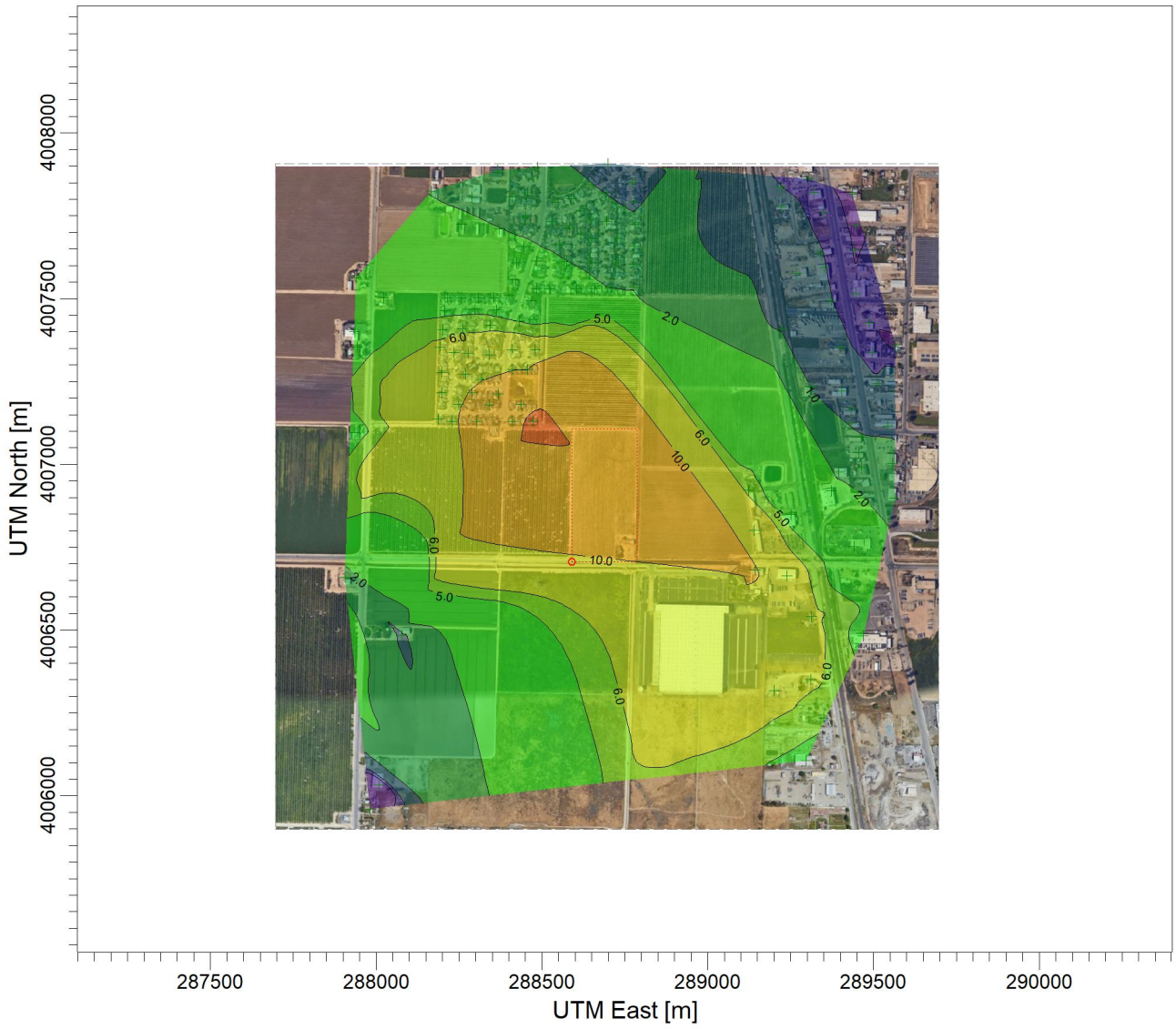
Prepared by Core Environmental Consulting:

Jesse Madsen, Owner, Principal Environmental Scientist
Clovis, CA

February 2025

PROJECT TITLE:

C:\Lakes\AERMOD View\Fernandes Subdivision\Fernandes Subdivision.isc



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 4 YEARS FOR SOURCE GROUP: ALL ug/m^3

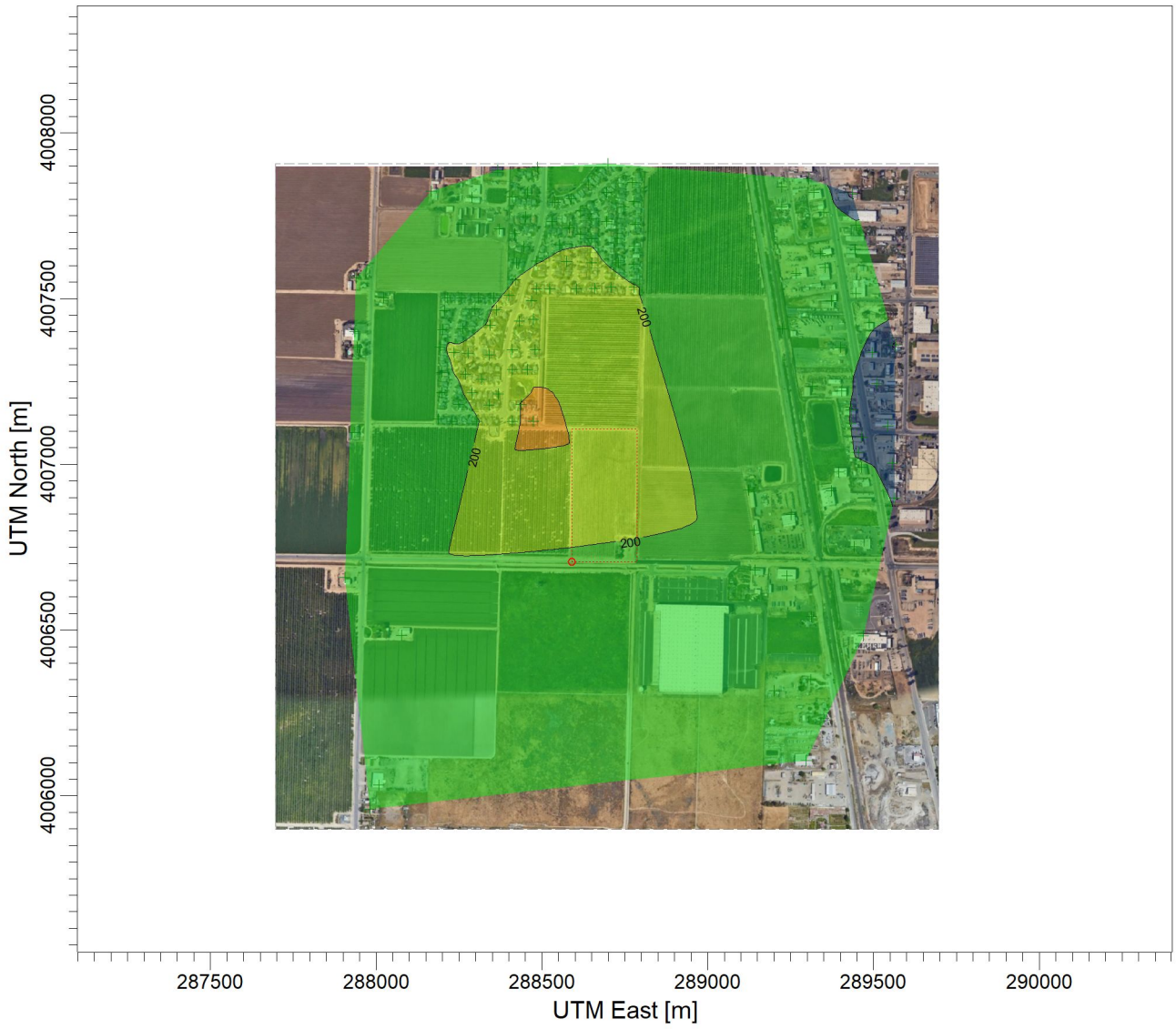
Max: 22.1 [ug/m^3] at (288473.99, 4007130.54)

0.3 0.5 0.6 1.0 2.0 5.0 6.0 10.0 20.0 22.1

COMMENTS:	SOURCES: **1**	COMPANY NAME:	
	RECEPTORS: **131**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:20,773 0 0.5 km	
	MAX: **22.1 ug/m^3**	DATE: **2/28/2025**	PROJECT NO.:

PROJECT TITLE:

C:\Lakes\AERMOD View\Fernandes Subdivision\Fernandes Subdivision.isc



PLOT FILE OF HIGH 1ST HIGH 1-HR VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 328 [ug/m^3] at (288473.99, 4007130.54)

88 90 100 200 300 328

COMMENTS:	SOURCES: **1**	COMPANY NAME:	
	RECEPTORS: **131**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:20,773 0 0.5 km	
	MAX: **328 ug/m^3**	DATE: **2/28/2025**	PROJECT NO.:

Appendix C. HARP 2 ADMRT Calculation Results

Prepared by Core Environmental Consulting:

Jesse Madsen, Owner, Principal Environmental Scientist
Clovis, CA

February 2025

**HARP - Air Dispersion Modeling and Risk Tool v22118

**2/28/2025

**Exported Risk Results

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INHAL_RISI
1	ALL	---	288474	4007131	2.39E-06	2YrCancerDerived_Inh	2.39E-06
2	ALL	---	288411.4	4007131	1.88E-06	2YrCancerDerived_Inh	1.88E-06
3	ALL	---	288303.3	4007131	1.29E-06	2YrCancerDerived_Inh	1.29E-06
4	ALL	---	288229.3	4007131	1.03E-06	2YrCancerDerived_Inh	1.03E-06
5	ALL	---	288186.6	4007136	9.09E-07	2YrCancerDerived_Inh	9.09E-07
6	ALL	---	287936.2	4007096	4.61E-07	2YrCancerDerived_Inh	4.61E-07
7	ALL	---	288437	4007182	1.78E-06	2YrCancerDerived_Inh	1.78E-06
8	ALL	---	288340.3	4007179	1.36E-06	2YrCancerDerived_Inh	1.36E-06
9	ALL	---	288249.2	4007182	1.05E-06	2YrCancerDerived_Inh	1.05E-06
10	ALL	---	288198	4007216	8.91E-07	2YrCancerDerived_Inh	8.91E-07
11	ALL	---	288289.1	4007216	1.11E-06	2YrCancerDerived_Inh	1.11E-06
12	ALL	---	288368.7	4007213	1.35E-06	2YrCancerDerived_Inh	1.35E-06
13	ALL	---	288198	4007279	8.16E-07	2YrCancerDerived_Inh	8.16E-07
14	ALL	---	288269.1	4007273	9.41E-07	2YrCancerDerived_Inh	9.41E-07
15	ALL	---	288317.5	4007256	1.07E-06	2YrCancerDerived_Inh	1.07E-06
16	ALL	---	288411.4	4007287	1.06E-06	2YrCancerDerived_Inh	1.06E-06
17	ALL	---	288456.9	4007287	1.07E-06	2YrCancerDerived_Inh	1.07E-06
18	ALL	---	288479.7	4007347	7.61E-07	2YrCancerDerived_Inh	7.61E-07
19	ALL	---	288411.4	4007347	8.04E-07	2YrCancerDerived_Inh	8.04E-07
20	ALL	---	288340.3	4007330	8.51E-07	2YrCancerDerived_Inh	8.51E-07
21	ALL	---	288277.7	4007335	7.93E-07	2YrCancerDerived_Inh	7.93E-07
22	ALL	---	288235	4007338	7.52E-07	2YrCancerDerived_Inh	7.52E-07
23	ALL	---	288192.3	4007352	6.88E-07	2YrCancerDerived_Inh	6.88E-07
24	ALL	---	287941.9	4007352	4.81E-07	2YrCancerDerived_Inh	4.81E-07
25	ALL	---	287936.2	4007401	4.54E-07	2YrCancerDerived_Inh	4.54E-07
26	ALL	---	287939.1	4007563	3.47E-07	2YrCancerDerived_Inh	3.47E-07
27	ALL	---	288021.6	4007503	4.14E-07	2YrCancerDerived_Inh	4.14E-07
28	ALL	---	288200.8	4007407	6.00E-07	2YrCancerDerived_Inh	6.00E-07
29	ALL	---	288260.6	4007409	6.18E-07	2YrCancerDerived_Inh	6.18E-07
30	ALL	---	288343.1	4007421	6.02E-07	2YrCancerDerived_Inh	6.02E-07
31	ALL	---	288431.3	4007432	5.38E-07	2YrCancerDerived_Inh	5.38E-07
32	ALL	---	288474	4007438	4.93E-07	2YrCancerDerived_Inh	4.93E-07
33	ALL	---	288363	4007466	5.03E-07	2YrCancerDerived_Inh	5.03E-07
34	ALL	---	288297.6	4007469	5.13E-07	2YrCancerDerived_Inh	5.13E-07
35	ALL	---	288206.5	4007463	5.13E-07	2YrCancerDerived_Inh	5.13E-07
36	ALL	---	288215.1	4007503	4.60E-07	2YrCancerDerived_Inh	4.60E-07
37	ALL	---	288257.8	4007503	4.62E-07	2YrCancerDerived_Inh	4.62E-07
38	ALL	---	288309	4007503	4.56E-07	2YrCancerDerived_Inh	4.56E-07
39	ALL	---	288354.5	4007503	4.41E-07	2YrCancerDerived_Inh	4.41E-07
40	ALL	---	288400	4007509	4.10E-07	2YrCancerDerived_Inh	4.10E-07

41	ALL	---	288468.3	4007495	3.91E-07	2YrCancerDerived_Inh	3.91E-07
42	ALL	---	288419.9	4007557	3.33E-07	2YrCancerDerived_Inh	3.33E-07
43	ALL	---	288422.8	4007609	2.78E-07	2YrCancerDerived_Inh	2.78E-07
44	ALL	---	288482.5	4007529	3.35E-07	2YrCancerDerived_Inh	3.35E-07
45	ALL	---	288522.4	4007529	3.13E-07	2YrCancerDerived_Inh	3.13E-07
46	ALL	---	288604.9	4007529	2.68E-07	2YrCancerDerived_Inh	2.68E-07
47	ALL	---	288658.9	4007532	2.36E-07	2YrCancerDerived_Inh	2.36E-07
48	ALL	---	288707.3	4007535	2.12E-07	2YrCancerDerived_Inh	2.12E-07
49	ALL	---	288778.4	4007535	1.85E-07	2YrCancerDerived_Inh	1.85E-07
50	ALL	---	288775.6	4007603	1.55E-07	2YrCancerDerived_Inh	1.55E-07
51	ALL	---	288730.1	4007609	1.64E-07	2YrCancerDerived_Inh	1.64E-07
52	ALL	---	288650.4	4007609	1.90E-07	2YrCancerDerived_Inh	1.90E-07
53	ALL	---	288573.6	4007611	2.19E-07	2YrCancerDerived_Inh	2.19E-07
54	ALL	---	288482.5	4007614	2.51E-07	2YrCancerDerived_Inh	2.51E-07
55	ALL	---	288445.5	4007657	2.32E-07	2YrCancerDerived_Inh	2.32E-07
56	ALL	---	288417.1	4007697	2.15E-07	2YrCancerDerived_Inh	2.15E-07
57	ALL	---	288371.6	4007711	2.18E-07	2YrCancerDerived_Inh	2.18E-07
58	ALL	---	288257.8	4007725	2.42E-07	2YrCancerDerived_Inh	2.42E-07
59	ALL	---	288166.7	4007825	2.04E-07	2YrCancerDerived_Inh	2.04E-07
60	ALL	---	288289.1	4007805	1.87E-07	2YrCancerDerived_Inh	1.87E-07
61	ALL	---	288365.9	4007887	1.43E-07	2YrCancerDerived_Inh	1.43E-07
62	ALL	---	288411.4	4007808	1.63E-07	2YrCancerDerived_Inh	1.63E-07
63	ALL	---	288451.2	4007748	1.81E-07	2YrCancerDerived_Inh	1.81E-07
64	ALL	---	288456.9	4007819	1.52E-07	2YrCancerDerived_Inh	1.52E-07
65	ALL	---	288485.4	4007896	1.24E-07	2YrCancerDerived_Inh	1.24E-07
66	ALL	---	288539.4	4007791	1.45E-07	2YrCancerDerived_Inh	1.45E-07
67	ALL	---	288587.8	4007802	1.32E-07	2YrCancerDerived_Inh	1.32E-07
68	ALL	---	288641.9	4007845	1.11E-07	2YrCancerDerived_Inh	1.11E-07
69	ALL	---	288698.8	4007907	9.03E-08	2YrCancerDerived_Inh	9.03E-08
70	ALL	---	288530.9	4007734	1.68E-07	2YrCancerDerived_Inh	1.68E-07
71	ALL	---	288553.7	4007663	1.96E-07	2YrCancerDerived_Inh	1.96E-07
72	ALL	---	288582.1	4007714	1.63E-07	2YrCancerDerived_Inh	1.63E-07
73	ALL	---	288616.3	4007765	1.37E-07	2YrCancerDerived_Inh	1.37E-07
74	ALL	---	288616.3	4007694	1.62E-07	2YrCancerDerived_Inh	1.62E-07
75	ALL	---	288650.4	4007680	1.57E-07	2YrCancerDerived_Inh	1.57E-07
76	ALL	---	288650.4	4007739	1.36E-07	2YrCancerDerived_Inh	1.36E-07
77	ALL	---	288695.9	4007822	1.06E-07	2YrCancerDerived_Inh	1.06E-07
78	ALL	---	288695.9	4007734	1.28E-07	2YrCancerDerived_Inh	1.28E-07
79	ALL	---	288727.2	4007683	1.37E-07	2YrCancerDerived_Inh	1.37E-07
80	ALL	---	288747.1	4007776	1.09E-07	2YrCancerDerived_Inh	1.09E-07
81	ALL	---	288772.8	4007850	9.14E-08	2YrCancerDerived_Inh	9.14E-08
82	ALL	---	288778.4	4007794	1.01E-07	2YrCancerDerived_Inh	1.01E-07
83	ALL	---	288781.3	4007725	1.16E-07	2YrCancerDerived_Inh	1.16E-07
84	ALL	---	288778.4	4007660	1.34E-07	2YrCancerDerived_Inh	1.34E-07

85	ALL	---	287904.9	4006658	1.45E-07	2YrCancerDerived_Inh	1.45E-07
86	ALL	---	288075.7	4006485	9.32E-08	2YrCancerDerived_Inh	9.32E-08
87	ALL	---	288007.4	4006032	3.21E-08	2YrCancerDerived_Inh	3.21E-08
88	ALL	---	287981.8	4005961	2.79E-08	2YrCancerDerived_Inh	2.79E-08
89	ALL	---	289142.6	4006681	1.12E-06	2YrCancerDerived_Inh	1.12E-06
90	ALL	---	289239.4	4006664	7.82E-07	2YrCancerDerived_Inh	7.82E-07
91	ALL	---	289139.8	4006800	8.73E-07	2YrCancerDerived_Inh	8.73E-07
92	ALL	---	289250.8	4006849	4.73E-07	2YrCancerDerived_Inh	4.73E-07
93	ALL	---	289122.7	4006923	6.01E-07	2YrCancerDerived_Inh	6.01E-07
94	ALL	---	289313.4	4006542	6.90E-07	2YrCancerDerived_Inh	6.90E-07
95	ALL	---	289310.5	4006351	6.81E-07	2YrCancerDerived_Inh	6.81E-07
96	ALL	---	289199.5	4006317	7.26E-07	2YrCancerDerived_Inh	7.26E-07
97	ALL	---	289350.3	4006234	5.58E-07	2YrCancerDerived_Inh	5.58E-07
98	ALL	---	289296.3	4006106	4.26E-07	2YrCancerDerived_Inh	4.26E-07
99	ALL	---	289469.9	4006482	4.64E-07	2YrCancerDerived_Inh	4.64E-07
100	ALL	---	289441.4	4006752	3.40E-07	2YrCancerDerived_Inh	3.40E-07
101	ALL	---	289373.1	4006920	2.56E-07	2YrCancerDerived_Inh	2.56E-07
102	ALL	---	289395.9	4006977	1.96E-07	2YrCancerDerived_Inh	1.96E-07
103	ALL	---	289464.2	4006991	1.59E-07	2YrCancerDerived_Inh	1.59E-07
104	ALL	---	289455.6	4007037	1.36E-07	2YrCancerDerived_Inh	1.36E-07
105	ALL	---	289464.2	4007082	1.12E-07	2YrCancerDerived_Inh	1.12E-07
106	ALL	---	289432.9	4007125	1.02E-07	2YrCancerDerived_Inh	1.02E-07
107	ALL	---	289432.9	4007165	8.99E-08	2YrCancerDerived_Inh	8.99E-08
108	ALL	---	289404.4	4007222	8.28E-08	2YrCancerDerived_Inh	8.28E-08
109	ALL	---	289316.2	4007236	9.69E-08	2YrCancerDerived_Inh	9.69E-08
110	ALL	---	289401.6	4007352	6.93E-08	2YrCancerDerived_Inh	6.93E-08
111	ALL	---	289225.2	4007409	9.84E-08	2YrCancerDerived_Inh	9.84E-08
112	ALL	---	289373.1	4007495	6.53E-08	2YrCancerDerived_Inh	6.53E-08
113	ALL	---	289353.2	4007594	6.55E-08	2YrCancerDerived_Inh	6.55E-08
114	ALL	---	289267.8	4007577	7.96E-08	2YrCancerDerived_Inh	7.96E-08
115	ALL	---	289339	4007637	6.61E-08	2YrCancerDerived_Inh	6.61E-08
116	ALL	---	289222.3	4007776	7.06E-08	2YrCancerDerived_Inh	7.06E-08
117	ALL	---	289222.3	4007836	6.52E-08	2YrCancerDerived_Inh	6.52E-08
118	ALL	---	289304.8	4007862	5.86E-08	2YrCancerDerived_Inh	5.86E-08
119	ALL	---	289319.1	4007822	5.99E-08	2YrCancerDerived_Inh	5.99E-08
120	ALL	---	289350.3	4007762	5.99E-08	2YrCancerDerived_Inh	5.99E-08
121	ALL	---	289435.7	4007816	5.03E-08	2YrCancerDerived_Inh	5.03E-08
122	ALL	---	289447.1	4007722	5.15E-08	2YrCancerDerived_Inh	5.15E-08
123	ALL	---	289444.2	4007648	5.32E-08	2YrCancerDerived_Inh	5.32E-08
124	ALL	---	289447.1	4007515	5.54E-08	2YrCancerDerived_Inh	5.54E-08
125	ALL	---	289486.9	4007426	5.48E-08	2YrCancerDerived_Inh	5.48E-08
126	ALL	---	289495.5	4007338	5.94E-08	2YrCancerDerived_Inh	5.94E-08
127	ALL	---	289509.7	4007244	6.63E-08	2YrCancerDerived_Inh	6.63E-08
128	ALL	---	289543.8	4007116	8.62E-08	2YrCancerDerived_Inh	8.62E-08

129	ALL	---	289558.1	4007003	1.26E-07	2YrCancerDerived_Inh	1.26E-07
130	ALL	---	289563.7	4006897	1.75E-07	2YrCancerDerived_Inh	1.75E-07

**HARP - Air Dispersion Modeling and Risk Tool v22118

**2/28/2025

**Exported Risk Results

REC	GRP	NETID	X	Y	SCENARIO	RESP	MAXHI
1	ALL	---	288474	4007131	NonCancerChronicDerived_Inh	0.001397	0.001397
2	ALL	---	288411.4	4007131	NonCancerChronicDerived_Inh	0.0011	0.0011
3	ALL	---	288303.3	4007131	NonCancerChronicDerived_Inh	0.000757	0.000757
4	ALL	---	288229.3	4007131	NonCancerChronicDerived_Inh	0.000602	0.000602
5	ALL	---	288186.6	4007136	NonCancerChronicDerived_Inh	0.000532	0.000532
6	ALL	---	287936.2	4007096	NonCancerChronicDerived_Inh	0.000269	0.000269
7	ALL	---	288437	4007182	NonCancerChronicDerived_Inh	0.001038	0.001038
8	ALL	---	288340.3	4007179	NonCancerChronicDerived_Inh	0.000796	0.000796
9	ALL	---	288249.2	4007182	NonCancerChronicDerived_Inh	0.000615	0.000615
10	ALL	---	288198	4007216	NonCancerChronicDerived_Inh	0.000521	0.000521
11	ALL	---	288289.1	4007216	NonCancerChronicDerived_Inh	0.00065	0.00065
12	ALL	---	288368.7	4007213	NonCancerChronicDerived_Inh	0.000791	0.000791
13	ALL	---	288198	4007279	NonCancerChronicDerived_Inh	0.000477	0.000477
14	ALL	---	288269.1	4007273	NonCancerChronicDerived_Inh	0.00055	0.00055
15	ALL	---	288317.5	4007256	NonCancerChronicDerived_Inh	0.000628	0.000628
16	ALL	---	288411.4	4007287	NonCancerChronicDerived_Inh	0.000622	0.000622
17	ALL	---	288456.9	4007287	NonCancerChronicDerived_Inh	0.000626	0.000626
18	ALL	---	288479.7	4007347	NonCancerChronicDerived_Inh	0.000445	0.000445
19	ALL	---	288411.4	4007347	NonCancerChronicDerived_Inh	0.00047	0.00047
20	ALL	---	288340.3	4007330	NonCancerChronicDerived_Inh	0.000498	0.000498
21	ALL	---	288277.7	4007335	NonCancerChronicDerived_Inh	0.000464	0.000464
22	ALL	---	288235	4007338	NonCancerChronicDerived_Inh	0.00044	0.00044
23	ALL	---	288192.3	4007352	NonCancerChronicDerived_Inh	0.000402	0.000402
24	ALL	---	287941.9	4007352	NonCancerChronicDerived_Inh	0.000281	0.000281
25	ALL	---	287936.2	4007401	NonCancerChronicDerived_Inh	0.000265	0.000265
26	ALL	---	287939.1	4007563	NonCancerChronicDerived_Inh	0.000203	0.000203
27	ALL	---	288021.6	4007503	NonCancerChronicDerived_Inh	0.000242	0.000242
28	ALL	---	288200.8	4007407	NonCancerChronicDerived_Inh	0.000351	0.000351
29	ALL	---	288260.6	4007409	NonCancerChronicDerived_Inh	0.000361	0.000361
30	ALL	---	288343.1	4007421	NonCancerChronicDerived_Inh	0.000352	0.000352
31	ALL	---	288431.3	4007432	NonCancerChronicDerived_Inh	0.000315	0.000315
32	ALL	---	288474	4007438	NonCancerChronicDerived_Inh	0.000288	0.000288
33	ALL	---	288363	4007466	NonCancerChronicDerived_Inh	0.000294	0.000294
34	ALL	---	288297.6	4007469	NonCancerChronicDerived_Inh	0.0003	0.0003
35	ALL	---	288206.5	4007463	NonCancerChronicDerived_Inh	0.0003	0.0003
36	ALL	---	288215.1	4007503	NonCancerChronicDerived_Inh	0.000269	0.000269
37	ALL	---	288257.8	4007503	NonCancerChronicDerived_Inh	0.00027	0.00027
38	ALL	---	288309	4007503	NonCancerChronicDerived_Inh	0.000267	0.000267
39	ALL	---	288354.5	4007503	NonCancerChronicDerived_Inh	0.000258	0.000258
40	ALL	---	288400	4007509	NonCancerChronicDerived_Inh	0.00024	0.00024

41	ALL	---	288468.3	4007495	NonCancerChronicDerived_Inh	0.000229	0.000229
42	ALL	---	288419.9	4007557	NonCancerChronicDerived_Inh	0.000195	0.000195
43	ALL	---	288422.8	4007609	NonCancerChronicDerived_Inh	0.000162	0.000162
44	ALL	---	288482.5	4007529	NonCancerChronicDerived_Inh	0.000196	0.000196
45	ALL	---	288522.4	4007529	NonCancerChronicDerived_Inh	0.000183	0.000183
46	ALL	---	288604.9	4007529	NonCancerChronicDerived_Inh	0.000157	0.000157
47	ALL	---	288658.9	4007532	NonCancerChronicDerived_Inh	0.000138	0.000138
48	ALL	---	288707.3	4007535	NonCancerChronicDerived_Inh	0.000124	0.000124
49	ALL	---	288778.4	4007535	NonCancerChronicDerived_Inh	0.000108	0.000108
50	ALL	---	288775.6	4007603	NonCancerChronicDerived_Inh	9.06E-05	9.06E-05
51	ALL	---	288730.1	4007609	NonCancerChronicDerived_Inh	9.59E-05	9.59E-05
52	ALL	---	288650.4	4007609	NonCancerChronicDerived_Inh	0.000111	0.000111
53	ALL	---	288573.6	4007611	NonCancerChronicDerived_Inh	0.000128	0.000128
54	ALL	---	288482.5	4007614	NonCancerChronicDerived_Inh	0.000147	0.000147
55	ALL	---	288445.5	4007657	NonCancerChronicDerived_Inh	0.000136	0.000136
56	ALL	---	288417.1	4007697	NonCancerChronicDerived_Inh	0.000126	0.000126
57	ALL	---	288371.6	4007711	NonCancerChronicDerived_Inh	0.000128	0.000128
58	ALL	---	288257.8	4007725	NonCancerChronicDerived_Inh	0.000141	0.000141
59	ALL	---	288166.7	4007825	NonCancerChronicDerived_Inh	0.00012	0.00012
60	ALL	---	288289.1	4007805	NonCancerChronicDerived_Inh	0.00011	0.00011
61	ALL	---	288365.9	4007887	NonCancerChronicDerived_Inh	8.38E-05	8.38E-05
62	ALL	---	288411.4	4007808	NonCancerChronicDerived_Inh	9.55E-05	9.55E-05
63	ALL	---	288451.2	4007748	NonCancerChronicDerived_Inh	0.000106	0.000106
64	ALL	---	288456.9	4007819	NonCancerChronicDerived_Inh	8.86E-05	8.86E-05
65	ALL	---	288485.4	4007896	NonCancerChronicDerived_Inh	7.27E-05	7.27E-05
66	ALL	---	288539.4	4007791	NonCancerChronicDerived_Inh	8.50E-05	8.50E-05
67	ALL	---	288587.8	4007802	NonCancerChronicDerived_Inh	7.70E-05	7.70E-05
68	ALL	---	288641.9	4007845	NonCancerChronicDerived_Inh	6.46E-05	6.46E-05
69	ALL	---	288698.8	4007907	NonCancerChronicDerived_Inh	5.28E-05	5.28E-05
70	ALL	---	288530.9	4007734	NonCancerChronicDerived_Inh	9.85E-05	9.85E-05
71	ALL	---	288553.7	4007663	NonCancerChronicDerived_Inh	0.000114	0.000114
72	ALL	---	288582.1	4007714	NonCancerChronicDerived_Inh	9.56E-05	9.56E-05
73	ALL	---	288616.3	4007765	NonCancerChronicDerived_Inh	7.99E-05	7.99E-05
74	ALL	---	288616.3	4007694	NonCancerChronicDerived_Inh	9.47E-05	9.47E-05
75	ALL	---	288650.4	4007680	NonCancerChronicDerived_Inh	9.21E-05	9.21E-05
76	ALL	---	288650.4	4007739	NonCancerChronicDerived_Inh	7.98E-05	7.98E-05
77	ALL	---	288695.9	4007822	NonCancerChronicDerived_Inh	6.23E-05	6.23E-05
78	ALL	---	288695.9	4007734	NonCancerChronicDerived_Inh	7.49E-05	7.49E-05
79	ALL	---	288727.2	4007683	NonCancerChronicDerived_Inh	8.02E-05	8.02E-05
80	ALL	---	288747.1	4007776	NonCancerChronicDerived_Inh	6.34E-05	6.34E-05
81	ALL	---	288772.8	4007850	NonCancerChronicDerived_Inh	5.34E-05	5.34E-05
82	ALL	---	288778.4	4007794	NonCancerChronicDerived_Inh	5.91E-05	5.91E-05
83	ALL	---	288781.3	4007725	NonCancerChronicDerived_Inh	6.76E-05	6.76E-05
84	ALL	---	288778.4	4007660	NonCancerChronicDerived_Inh	7.85E-05	7.85E-05

85	ALL	---	287904.9	4006658	NonCancerChronicDerived_Inh	8.51E-05	8.51E-05
86	ALL	---	288075.7	4006485	NonCancerChronicDerived_Inh	5.45E-05	5.45E-05
87	ALL	---	288007.4	4006032	NonCancerChronicDerived_Inh	1.88E-05	1.88E-05
88	ALL	---	287981.8	4005961	NonCancerChronicDerived_Inh	1.63E-05	1.63E-05
89	ALL	---	289142.6	4006681	NonCancerChronicDerived_Inh	0.000653	0.000653
90	ALL	---	289239.4	4006664	NonCancerChronicDerived_Inh	0.000457	0.000457
91	ALL	---	289139.8	4006800	NonCancerChronicDerived_Inh	0.00051	0.00051
92	ALL	---	289250.8	4006849	NonCancerChronicDerived_Inh	0.000276	0.000276
93	ALL	---	289122.7	4006923	NonCancerChronicDerived_Inh	0.000351	0.000351
94	ALL	---	289313.4	4006542	NonCancerChronicDerived_Inh	0.000403	0.000403
95	ALL	---	289310.5	4006351	NonCancerChronicDerived_Inh	0.000398	0.000398
96	ALL	---	289199.5	4006317	NonCancerChronicDerived_Inh	0.000424	0.000424
97	ALL	---	289350.3	4006234	NonCancerChronicDerived_Inh	0.000327	0.000327
98	ALL	---	289296.3	4006106	NonCancerChronicDerived_Inh	0.000249	0.000249
99	ALL	---	289469.9	4006482	NonCancerChronicDerived_Inh	0.000271	0.000271
100	ALL	---	289441.4	4006752	NonCancerChronicDerived_Inh	0.000199	0.000199
101	ALL	---	289373.1	4006920	NonCancerChronicDerived_Inh	0.00015	0.00015
102	ALL	---	289395.9	4006977	NonCancerChronicDerived_Inh	0.000115	0.000115
103	ALL	---	289464.2	4006991	NonCancerChronicDerived_Inh	9.29E-05	9.29E-05
104	ALL	---	289455.6	4007037	NonCancerChronicDerived_Inh	7.95E-05	7.95E-05
105	ALL	---	289464.2	4007082	NonCancerChronicDerived_Inh	6.55E-05	6.55E-05
106	ALL	---	289432.9	4007125	NonCancerChronicDerived_Inh	5.95E-05	5.95E-05
107	ALL	---	289432.9	4007165	NonCancerChronicDerived_Inh	5.25E-05	5.25E-05
108	ALL	---	289404.4	4007222	NonCancerChronicDerived_Inh	4.84E-05	4.84E-05
109	ALL	---	289316.2	4007236	NonCancerChronicDerived_Inh	5.66E-05	5.66E-05
110	ALL	---	289401.6	4007352	NonCancerChronicDerived_Inh	4.05E-05	4.05E-05
111	ALL	---	289225.2	4007409	NonCancerChronicDerived_Inh	5.75E-05	5.75E-05
112	ALL	---	289373.1	4007495	NonCancerChronicDerived_Inh	3.82E-05	3.82E-05
113	ALL	---	289353.2	4007594	NonCancerChronicDerived_Inh	3.83E-05	3.83E-05
114	ALL	---	289267.8	4007577	NonCancerChronicDerived_Inh	4.66E-05	4.66E-05
115	ALL	---	289339	4007637	NonCancerChronicDerived_Inh	3.86E-05	3.86E-05
116	ALL	---	289222.3	4007776	NonCancerChronicDerived_Inh	4.13E-05	4.13E-05
117	ALL	---	289222.3	4007836	NonCancerChronicDerived_Inh	3.81E-05	3.81E-05
118	ALL	---	289304.8	4007862	NonCancerChronicDerived_Inh	3.43E-05	3.43E-05
119	ALL	---	289319.1	4007822	NonCancerChronicDerived_Inh	3.50E-05	3.50E-05
120	ALL	---	289350.3	4007762	NonCancerChronicDerived_Inh	3.50E-05	3.50E-05
121	ALL	---	289435.7	4007816	NonCancerChronicDerived_Inh	2.94E-05	2.94E-05
122	ALL	---	289447.1	4007722	NonCancerChronicDerived_Inh	3.01E-05	3.01E-05
123	ALL	---	289444.2	4007648	NonCancerChronicDerived_Inh	3.11E-05	3.11E-05
124	ALL	---	289447.1	4007515	NonCancerChronicDerived_Inh	3.24E-05	3.24E-05
125	ALL	---	289486.9	4007426	NonCancerChronicDerived_Inh	3.20E-05	3.20E-05
126	ALL	---	289495.5	4007338	NonCancerChronicDerived_Inh	3.47E-05	3.47E-05
127	ALL	---	289509.7	4007244	NonCancerChronicDerived_Inh	3.88E-05	3.88E-05
128	ALL	---	289543.8	4007116	NonCancerChronicDerived_Inh	5.04E-05	5.04E-05

129	ALL	---	289558.1	4007003	NonCancerChronicDerived_Inh	7.34E-05	7.34E-05
130	ALL	---	289563.7	4006897	NonCancerChronicDerived_Inh	0.000103	0.000103

HARP Project Summary Report 2/28/2025 12:18:15 PM

PROJECT INFORMATION
HARP Version: 22118
Project Name: FERNANDES SUBDIVISION
Project Output Directory: C:\HARP2\Projects\FERNANDES SUBDIVISION
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:1
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	
Multi	Annual Ems	MaxHr Ems	MWAF		
	(lbs/yr)	(lbs/hr)			
AREA1	0	0	9901	DieselExhPM	1
	22	0	1		

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH22013
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	
InhChronicREL	OralChronicREL	InhChronic8HRREL			
9901	DieselExhPM	1.1			5

AIR DISPERSION MODELING INFORMATION
Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

LIST OF AIR DISPERSION FILES
AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list
_____

LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)
_____
AREA1CancerRisk.csv
AREA1CancerRiskSumByRec.csv
AREA1GLCList.csv
AREA1HRAInput.hra
AREA1NCAcuteRisk.csv
AREA1NCAcuteRiskSumByRec.csv
AREA1NCChronicRisk.csv
AREA1NCChronicRiskSumByRec.csv
AREA1Output.txt
AREA1PathwayRec.csv
AREA1PolDB.csv

Spatial averaging files (\sa\)
_____

Attachment E

Energy Calculations

Construction Equipment Energy Use

Diesel only

Phase Name	Off Road Equipment Type	Off Road Equipment Unit Amount[1]	Usage Hours Per Day[1]	Horse Power (lbs/sec)[1]	Load Factor[1]	Total Operational Hours	BSFC[2]	Fuel Used (gallons)[3]	MBTU[4]
Site Preparation	Rubber Tired Dozers	1	6	367	0.4	60	0.367	454.71	63.204741
Site Preparation	Tractors/Loaders/Backhoes	1	6	84	0.37	60	0.408	107.02	14.8764295
Grading	Graders	1	6	148	0.41	180	0.367	563.87	78.3773233
Grading	Rubber Tired Dozers	1	6	367	0.4	180	0.367	1364.13	189.614223
Grading	Excavators	1	6	36	0.38	180	0.367	127.12	17.6697723
Grading	Scrapers	2	6	423	0.48	360	0.367	3773.48	524.513241
Grading	Tractors/Loaders/Backhoes	1	6	97	0.84	180	0.408	841.73	117.001108
Building Construction	Cranes	1	6	367	0.29	1800	0.367	9889.95	1374.70312
Building Construction	Forklifts	1	6	82	0.2	1800	0.408	1694.21	235.495603
Building Construction	Generator Sets	1	6	14	0.74	1800	0.408	1070.25	148.764295
Building Construction	Tractors/Loaders/Backhoes	1	6	84	0.37	1800	0.408	3210.74	446.292886
Building Construction	Welders	1	6	46	0.45	1800	0.408	2138.43	297.241401
Paving	Pavers	1	6	81	0.42	120	0.367	210.75	29.2946225
Paving	Paving Equipment	1	6	89	0.36	120	0.367	198.49	27.5896445
Paving	Rollers	1	6	36	0.38	120	0.408	94.21	13.095853
Architectural Coating	Air Compressors	1	6	37	0.48	120	0.408	122.31	17.0016338
Total								25861.41	3594.74

Construction Phases

PhaseNumber	Phase Name	Phase Type	Phase Start Date[1]	Phase End Date[1]	Num Days Week[1]	Total Number of Days[1]
1	Site Preparation	Site Preparation	1/1/2025	1/15/2025	5	10
2	Grading	Grading	1/16/2025	5/7/2025	5	30
3	Building Construction	Building Constru	5/8/2025	2/18/2028	5	300
4	Paving	Paving	2/19/2028	2/24/2028	5	20
5	Architectural Coating	Architectural Co	2/25/2028	4/13/2028	5	20

Notes

1. CalEEMod Default Values Used
2. BSFC - Brake Specific Fuel Consumption (pounds per horsepower-hour) – If less than 100 Horsepower = 0.408, if greater than 100 Horsepower = 0.367
3. Fuel Used = Load Factor x Horsepower x Total Operational Hours x BSFC / Unit Conversion
4. MBTU calculated for comparison purposes. Assumed 1 gallon of diesel = 0.139 MBTU

Mobile Energy Use (Construction)

Worker Trips

	Daily Worker Trips[1]	Worker Trip Length[1]	VMT/Day	MPG Factor (EMFAC2017)	Gallons of Gas/Day	# of Days	Total Gallons of Gas	MBTU
Demolition	15	11.41	171.15	29.23	5.9	20	117	13.59480226
Site Preparation	5	11.41	57.05	29.23	2.0	10	20	2.265800376
Grading	15	11.41	171.15	29.23	5.9	30	176	20.39220339
Building Construction	43	11.41	490.63	29.23	16.8	300	5036	584.5764971
Paving	8	11.41	91.28	29.23	3.1	20	62	7.250561204
Architectural Coating	9	11.41	102.69	29.23	3.5	20	70	8.156881355
Total	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**400**	**5481**	**636.2367457**

Vendor Trips

	Daily Vendor Trips	Vendor Trip Length	VMT/Day	MPG Factor	Gallons of Diesel/Day	# of Days	Total Gallons of Diesel	MBTU
Building Construction	13	7.43	96.59	8.43	11.5	300	3437.366548	477.7939502

Fleet Characteristics

	Vehicle Class	Fleet Mix	2024 MPG Factor (EMFAC2017)	Average MPG Factor
Assumed Vehicle Fleet for Workers	LDA	33%	33.24	29.13
	LDT1	33%	28.07	
	LDT2	33%	26.07	
Assumed Vehicle Fleet for Vendor Trips	MHD	50%	9.74	8.43
	HHD	50%	7.12	

Notes
1. CalEEMod Default values used
2. MBTU calculated for comparison purposes. Assumed 1 gallon of gasoline = 0.11609 MBTU

Summary of Energy Use (Construction)

	Off-Road Equipment Fuel (Diesel)		On-Road Vehicle Fuel				Total MBTU
			Diesel		Gasoline		
	Gallons	MMBTU	Gallons	MMBTU	Gallons	MMBTU	
Development	25861	3595	3437	478	5481	636	4709
						Total Construction Energy Use	4709
						Average Annual Construction Energy Use	1471

Mobile Energy Use (Operations)

Total Annual VMT from Project (CalEEMod)	**3,556,905**

Fleet Mix & Fuel Calculations

Vehicle Class	Proportion of Fleet Mix[1]	Annual VMT by Vehicle Class	Proportion of vehicle class using gas or diesel (EMFAC2021)[2]		Annual VMT by Vehicle Class and Fuel Type		Fuel Efficiency (MPG) by Vehicle Class and Fuel Type (EMFAC2017)		Annual Fuel Use from Project (gallons)		MBTU/Year[3]
			Gas	Diesel	Gas	Diesel	Gas	Diesel	Gas	Diesel	
LDA	0.5159	1835007.3	99%	1%	1817682.10	17325.19	35.18	58.79	51668.1	294.7	6039.1
LDT1	0.2192	779673.6	100%	0%	779403.03	270.55	29.77	27.69	26180.8	9.8	3040.7
LDT2	0.1686	599694.2	99%	1%	595599.23	4094.95	28.32	43.82	21031.0	93.4	2454.5
MDV	0.0582	207011.9	97%	3%	201688.81	5323.06	21.79	30.63	9256.0	173.8	1098.7
LHD1	0.0008	2845.5	43%	57%	1232.30	1613.23	8.73	18.39	141.2	87.7	28.6
LHD2	0.0010	3556.9	27%	73%	973.68	2583.22	7.56	16.50	128.8	156.6	36.7
MHD	0.0074	26321.1	8%	92%	2067.65	24253.45	5.16	9.99	400.7	2427.8	384.0
HHD	0.0187	66514.1	0%	100%	10.29	66503.83	4.85	7.43	2.1	8950.7	1244.4
OBUS	0.0000	0.0	44%	56%	0.00	0.00	5.03	8.43	0.0	0.0	0.0
UBUS	0.0044	15650.4	77%	23%	11989.24	3661.14	4.80	10.00	2497.8	366.1	340.9
MCY	0.0025	8892.3	100%	0%	8892.26	0.00	37.99	NA	234.1	0.0	27.2
SBUS	0.0007	2489.8	20%	80%	507.63	1982.21	9.34	8.28	54.3	239.4	39.6
MH	0.0026	9248.0	65%	35%	6023.53	3224.42	5.06	10.02	1190.4	321.8	182.9
Total	**100.000000%**	**3556905.0**			**3426069.76**	**130835.24**			**112785.3**	**13121.8**	**14917.2**

Fleet Characteristics

District Accepted Fleet Mix for Residential Projects

	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
2013	0.5322	0.1901	0.1671	0.0628	0.0020	0.0011	0.0097	0.0243	0.0000	0.0047	0.0032	0.0012	0.0016
2014	0.5352	0.1905	0.1673	0.0609	0.0019	0.0010	0.0095	0.0232	0.0000	0.0047	0.0030	0.0012	0.0016
2015	0.5376	0.1911	0.1676	0.0591	0.0018	0.0010	0.0096	0.0219	0.0000	0.0047	0.0029	0.0011	0.0016
2016	0.5398	0.1917	0.1674	0.0576	0.0018	0.0010	0.0094	0.0213	0.0000	0.0046	0.0028	0.0011	0.0015
2017	0.5410	0.1927	0.1671	0.0563	0.0017	0.0010	0.0093	0.0210	0.0000	0.0045	0.0028	0.0011	0.0015
2018	0.5412	0.1941	0.1669	0.0553	0.0017	0.0009	0.0092	0.0209	0.0000	0.0045	0.0027	0.0011	0.0015
2019	0.5411	0.1955	0.1669	0.0545	0.0016	0.0009	0.0091	0.0208	0.0000	0.0044	0.0026	0.0011	0.0015
2020	0.5402	0.1972	0.1668	0.0540	0.0016	0.0009	0.0091	0.0206	0.0000	0.0044	0.0026	0.0011	0.0015
2021	0.5373	0.2000	0.1671	0.0542	0.0014	0.0009	0.0090	0.0206	0.0000	0.0044	0.0026	0.0009	0.0016
2022	0.5343	0.2030	0.1673	0.0545	0.0013	0.0009	0.0086	0.0207	0.0000	0.0044	0.0025	0.0007	0.0018
2023	0.5305	0.2058	0.1673	0.0550	0.0011	0.0009	0.0085	0.0218	0.0000	0.0043	0.0025	0.0004	0.0019
2024	0.5277	0.2090	0.1675	0.0556	0.0009	0.0009	0.0080	0.0214	0.0000	0.0043	0.0025	0.0002	0.0020
2025	0.5244	0.2120	0.1677	0.0563	0.0008	0.0009	0.0076	0.0212	0.0000	0.0043	0.0025	0.0001	0.0022
2026	0.5215	0.2146	0.1681	0.0569	0.0008	0.0009	0.0075	0.0203	0.0000	0.0044	0.0025	0.0002	0.0023
2027	0.5185	0.2170	0.1684	0.0575	0.0008	0.0010	0.0074	0.0195	0.0000	0.0044	0.0025	0.0005	0.0025
2028	0.5159	0.2192	0.1686	0.0582	0.0008	0.0010	0.0074	0.0187	0.0000	0.0044	0.0025	0.0007	0.0026
2029	0.5134	0.2212	0.1688	0.0587	0.0008	0.0010	0.0074	0.0181	0.0000	0.0044	0.0025	0.0009	0.0028
2030	0.5110	0.2231	0.1690	0.0593	0.0008	0.0010	0.0074	0.0173	0.0000	0.0044	0.0025	0.0012	0.0030
2031	0.5076	0.2254	0.1693	0.0598	0.0008	0.0010	0.0074	0.0174	0.0000	0.0044	0.0026	0.0012	0.0031
2032	0.5044	0.2274	0.1696	0.0602	0.0008	0.0010	0.0075	0.0176	0.0000	0.0044	0.0026	0.0012	0.0033
2033	0.5014	0.2291	0.1700	0.0606	0.0008	0.0010	0.0075	0.0178	0.0000	0.0044	0.0027	0.0012	0.0035
2034	0.4987	0.2308	0.1703	0.0609	0.0008	0.0010	0.0076	0.0180	0.0000	0.0044	0.0027	0.0012	0.0036
2035	0.4960	0.2323	0.1707	0.0613	0.0008	0.0010	0.0076	0.0182	0.0000	0.0044	0.0027	0.0012	0.0038
2036	0.4933	0.2333	0.1709	0.0615	0.0008	0.0010	0.0077	0.0191	0.0000	0.0044	0.0029	0.0012	0.0039
2037	0.4907	0.2341	0.1710	0.0618	0.0009	0.0010	0.0078	0.0202	0.0000	0.0044	0.0030	0.0011	0.0040
2038	0.4883	0.2348	0.1712	0.0620	0.0009	0.0010	0.0078	0.0213	0.0000	0.0044	0.0031	0.0011	0.0041
2039	0.4857	0.2356	0.1714	0.0623	0.0009	0.0010	0.0079	0.0223	0.0000	0.0043	0.0032	0.0011	0.0043
2040	0.4834	0.2363	0.1716	0.0625	0.0009	0.0010	0.0079	0.0233	0.0000	0.0043	0.0033	0.0011	0.0044

*used 2027 as operational year

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Tulare
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for VMT, trips/year for Trips, tons/year for Emissions, tons/year for Fuel Consumption

GASOLINE

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT (Annual)	Trips (Annual)	Fuel Consumption (tons/year)	Annual Fuel Consumption (gallons)	MPG
Tulare	2024	HHDT	Aggregate	Aggregate	Gasoline	1	40832	5642	20.78	8.69	4699.19
Tulare	2024	LDA	Aggregate	Aggregate	Gasoline	200092	2758210730	325924543	33135.62	82978.87	33239.92
Tulare	2024	LDT1	Aggregate	Aggregate	Gasoline	20489	250774265	31894273	2948.74	8932.61	28074.03
Tulare	2024	LDT2	Aggregate	Aggregate	Gasoline	66393	838611285	105810710	17680.41	31789.15	26380.43
Tulare	2024	LHDT1	Aggregate	Aggregate	Gasoline	5502	58348244	26803634	3808.07	6870.06	8493.13
Tulare	2024	LHDT2	Aggregate	Aggregate	Gasoline	905	9488315	4406586	531.73	1285.70	7379.91
Tulare	2024	MCY	Aggregate	Aggregate	Gasoline	9526	22280789	6611059	174.10	588.70	37847.58
Tulare	2024	MDV	Aggregate	Aggregate	Gasoline	68672	787150190	106279450	19692.36	38420.97	20487.51
Tulare	2024	MH	Aggregate	Aggregate	Gasoline	920	2631245	30111	277.79	536.98	4900.12
Tulare	2024	MHDT	Aggregate	Aggregate	Gasoline	423	7125304	2764314	837.27	1429.47	4984.57
Tulare	2024	OBUS	Aggregate	Aggregate	Gasoline	141	1996552	922982	323.76	410.91	4858.85
Tulare	2024	SBUS	Aggregate	Aggregate	Gasoline	84	1324045	109782	64.45	144.05	9191.53
Tulare	2024	UBUS	Aggregate	Aggregate	Gasoline	76	2232433	99041	21.38	483.67	4615.66

DIESEL

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT (annual)	Trips (annual)	Fuel Consumption (tons/year)	Annual Fuel Consumption (gallons)	MPG
Kings	2024	HHDT	Aggregate	Aggregate	Diesel	6329	263877277	22366793	37063.1	37063112	7.12
Kings	2024	LDA	Aggregate	Aggregate	Diesel	1810	26289809	2985204	474.4	474415	55.42
Kings	2024	LDT1	Aggregate	Aggregate	Diesel	13	87050	14634	3.3	3271	26.61
Kings	2024	LDT2	Aggregate	Aggregate	Diesel	390	5765743	658531	140.0	139970	41.19
Kings	2024	LHDT1	Aggregate	Aggregate	Diesel	7282	76385011	29952675	4256.6	4256603	17.95
Kings	2024	LHDT2	Aggregate	Aggregate	Diesel	2329	25172917	9581028	1564.9	1564922	16.09
Kings	2024	MDV	Aggregate	Aggregate	Diesel	1548	20774799	2543773	719.8	719773	28.86
Kings	2024	MH	Aggregate	Aggregate	Diesel	532	1408515	17405	143.3	143324	9.83
Kings	2024	MHDT	Aggregate	Aggregate	Diesel	4433	83579546	12100911	8579.8	8579805	9.74
Kings	2024	OBUS	Aggregate	Aggregate	Diesel	116	2577417	329811	319.0	319022	8.08
Kings	2024	SBUS	Aggregate	Aggregate	Diesel	509	5170191	1919120	636.3	636286	8.13
Kings	2024	UBUS	Aggregate	Aggregate	Diesel	22	681715	28821	68.3	68342	9.98
											19.91

Notes

1. CalEEMod Defaults Used
2. Proportion of diesel vs. gasoline vehicles calculated based on total annual VMT for each vehicle class
3. MBTU Calculated for comparison purposes. Assumed 1 gallon of gasoline = 0.116090 MBTU and 1 gallong of diesel = 0.139 MBTU

Summary of Energy Use (Operation)

Mobile Fuel Use		
	Gal/Year	**MMBTU**
Fernandes Property (Gaso	112785	13566
Fernandes Property (Diese	13122	1803
Electricity Use		
	kWh/Year	**MMBTU**
Fernandes Property	1,386,288	4730
Natural Gas Use		
	kBTU/Year	**MMBTU**
Fernandes Property	0	0
		MMBTU
Total Operational Energy Use		**20099**

Appendix B

Health Risk Assessment

Technical Report

Health Risk Assessment
For California Environmental Quality Act (CEQA)

Project Name:

Fernandes Subdivision
Tulare, CA

Prepared for:

4Creeks, Inc.
Visalia, CA

Author:

Core Environmental Consulting
Clovis, CA

Lead Agency:

City of Tulare

Date of Preparation:

February 2025

THIS PAGE IS INTENTIONALLY BLANK.

Contents

1 Executive Summary 1
2 Project Description 2
3 Health Risk Assessment Setting 5
3.1 San Joaquin Valley Air Pollution Control District 5
3.2 Diesel Particulate Matter 6
3.3 Thresholds of Significance 7
4 HRA Methodology 8
5 HRA Results 10
5.1 Construction Risk 10
5.2 Mitigation 10
6 References 11

Tables

Table 1 SJVPACD Thresholds of Significance – Toxic Air Contaminants 7
Table 2 HRA Results Compared to SJVAPCD Thresholds of Significance 10

Figures

Figure 1 Vicinity Map 3
Figure 2 Tentative Subdivision Map 4

1 Executive Summary

This technical report has been prepared to summarize the background, methodology, and results of a Health Risk Assessment (HRA) for the Fernandes Subdivision project (Project) in Tulare, California. The Project proposes development of a 120-lot, single-family residential subdivision, on the northwest corner W. Paige Avenue and S. Canal Street.

The Project is subject to the California Environmental Quality Act (CEQA), with City of Tulare (City) serving as the Lead Agency pursuant to the *CEQA Statute and Guidelines*[1] (CEQA Guidelines). An Initial Study is in progress and this HRA was completed to assess the potential significance of Toxic Air Contaminants (TAC) on nearby sensitive receptors.

The Project site is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD), which oversees the assessment of health risk associated with Toxic Air Contaminant (TAC) emissions from new development in the San Joaquin Valley Air Basin (SJVAB). SJVAPCD lays out a basic framework for understanding and assessing health risk, under CEQA, in its *Guidance for Assessing and Mitigating Air Quality Impacts*[2] (GAMAQI). Projects that would either place a new source of TAC in the vicinity of existing sensitive receptors, or would place new sensitive receptors in the vicinity of existing sources of TAC, must be assessed to determine whether the resulting health risk to sensitive receptors would exceed SJVAPCD established thresholds of significance for carcinogenic, acute, and chronic risk.

This HRA was prepared in accordance with the guidelines outlined in the Office of Environmental Health Hazard Assessment (OEHHA) *Guidance Manual for Preparation of Health Risk Assessments*[3], SJVAPCD Policy *APR 1906 – Framework for Performing Health Risk Assessments*[4], and SJVAPCD *Guidance for Air Dispersion Modeling*[5].

Construction health risk, associated with diesel particulate matter (DPM) emissions from construction vehicle and equipment use, was modeled using the USEPA *American Meteorological Society/EPA Regulatory model* (AERMOD) and CARB Hotspots Analysis and Reporting Program (HARP2) *Air Dispersion Modeling and Risk Tool*[6] (ADMRT).

The calculated health risks for Project construction DPM are below the SJVAPCD thresholds of significance. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations, and related impacts would be *less than* significant. The control measures included in the CalEEMod analysis were selected during primary air quality analysis included in the Initial Study, prior to this HRA; no additional mitigation is required outside of those measures that were already selected.

[1] (Association of Environmental Professionals, 2025)
[2] (San Joaquin Valley Air Pollution Control District, 2015)
[3] (Office of Environmental Health Hazard Asssessment, 2015)
[4] (San Joaquin Valley Air Pollution Control District, 2020)
[5] (San Joaquin Valley Air Pollution Control District, 2022a)
[6] (California Air Resources Board, 2022a)

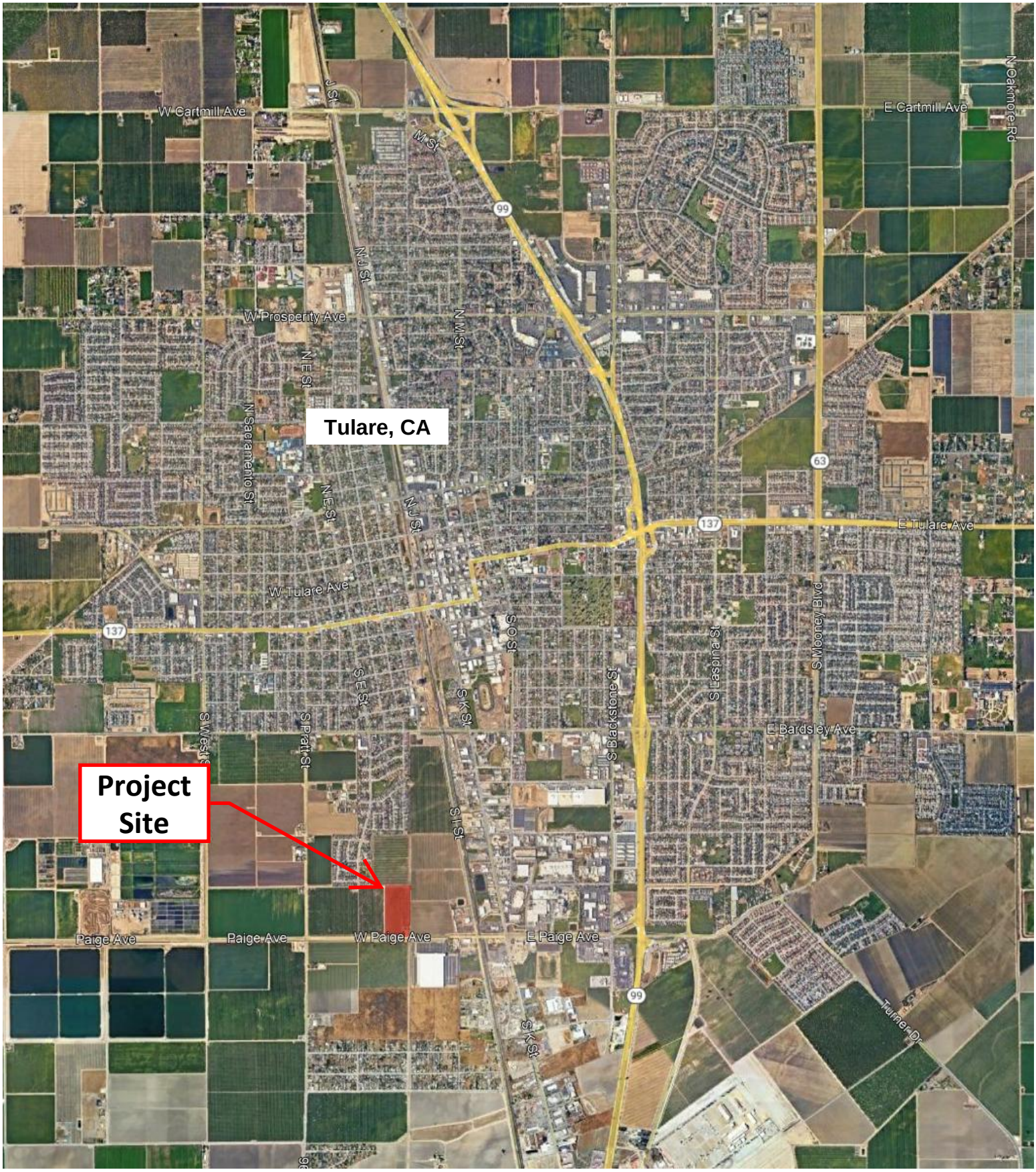
2 Project Description

The Project proposes development of a 120-lot, single-family residential subdivision in Tulare, California. The 19.6-acre project site is on the north side of W. Paige Avenue, approximately 0.4 miles east of S. Pratt Street. The current use is farmland, with one residence located in the southeast corner of the property. The Project would include all related infrastructure improvements including utilities, internal streets, a 0.85-acre city park, and a Class 1 mixed-use trail along Paige Avenue that will connect to planned infrastructure and provide future residents with improved access to citywide transportation networks and community amenities.

The Project site is topographically flat, with elevations ranging from 262 to 264 feet above mean seal level. The site is approximately 2 miles southwest of the center of Tulare, in a developing area. Surrounding land uses are primarily agricultural. Commercial uses are located to the east; residential uses to the north; and to the west and south are agricultural land.

According to the schedule included in the *California Emissions Estimator Model* (CalEEMod) analysis, construction is expected to last approximately 2 years, potentially starting as early as March 2026.

The Project will include a variety of features to lessen potential environmental impacts, all of which were selected outside of this HRA and described within the Initial Study; the CalEEMod analysis lists all measures that were included in the emissions calculations and a more detailed project description is provided in the Initial Study. A Vicinity Map and Tentative Subdivision Map are included below as Figure 1 and Figure 2, respectively.



CORE ENVIRONMENTAL CONSULTING Core Environmental Consulting Clovis, CA 93612 (559) 202-3941	PROJECT NAME **Fernandes Subdivision**	DATE **2/28/25**	SCALE **NOT TO SCALE**	**FIGURE 1** **VICINITY MAP**
	PROJECT NUMBER **24019**	DRAWN BY **JM**	LAT/LONG **36.183847, -119.349752**	

ARCHITECTURE | PLANNING | CIVIL | STRUCTURAL | SURVEYING

4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

FERNANDES SUBDIVISION

REQUIRED ENTITLEMENTS

- Tentative Subdivision Map
- Rezone
- Conditional Use Permit (Small Lot Residential)

SITE INFORMATION

APN:	174-030-008
Acreage:	±19.58 AC
Jurisdiction:	City of Tulare
Current Use:	Farmland, Single Family Residential
Proposed Use:	Single-Family Residential
Zoning (Existing):	R-1-5
Zoning (Proposed):	R-1-4
General Plan (Existing):	Low Density Residential
General Plan (Proposed):	Low Density Residential

UTILITIES

Water:	City of Tulare
Stormwater:	City of Tulare
Sewer:	Tie-in to existing 27" line in Paige Ave
Electricity:	Southern California Edison
Natural Gas:	Southern California Gas
Telephone:	AT&T

TYPICAL LOT SIZES

Number of Lots:	120
Average Lot Size:	3,825 SF (45' X 85')
Minimum Lot Size:	3,823 SF
Maximum Lot Size:	6,745 SF
Gross Density:	6.13 DU/Acre

PROJECT DIRECTORY

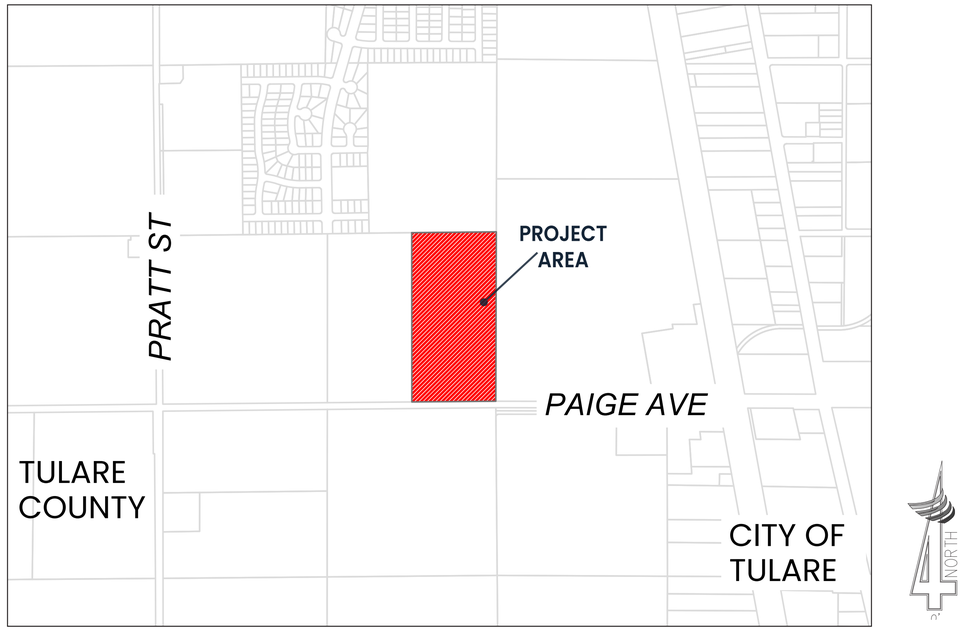
Applicant:
Artemis Partners, LLC
324 S. Santa Fe St., Ste. A
Visalia, CA 93292
Contact: Matt Ainley
Phone: (559) 737-3748

Owner:
BF Central Valley Holdings, LLC
18300 Redmond Way, Suite 120
Redmond, WA 98052
Contact: Shane Bouchard
Phone: (909) 600-4990

Agent:
Molly Baumeister, AICP (4Creeks, Inc.)
324 S Santa Fe St A
Visalia, CA 93292
Phone: (559) 802-3052
Contact: mollyb@4-creeks.com

Ellie Krantz (4Creeks, Inc.)
324 S Santa Fe St A
Visalia, CA 93292
Phone: (559) 802-3052
Contact: elliek@4-creeks.com

VICINITY MAP

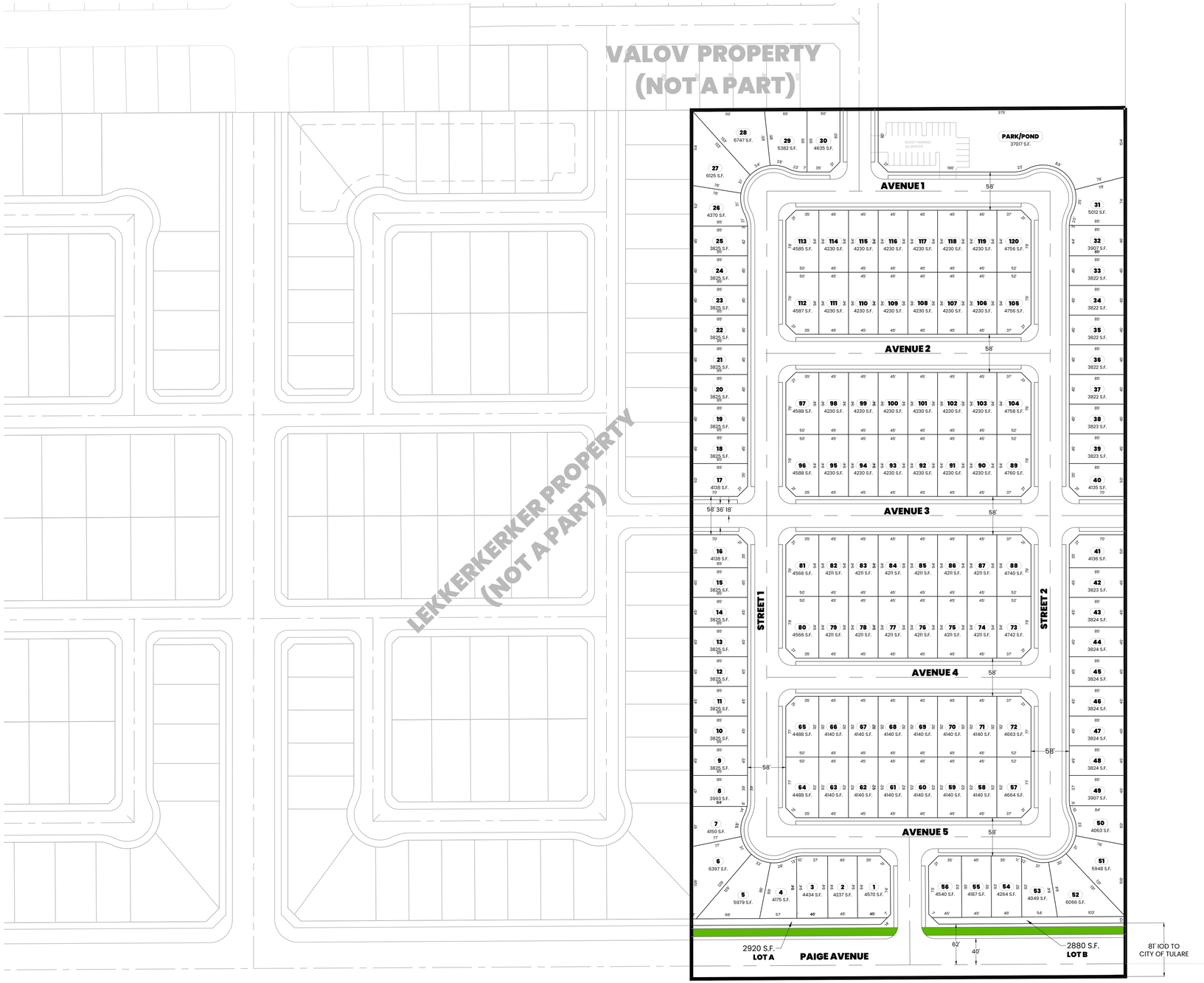


SHEET INDEX

P1.0 Tentative Subdivision Map
P2.0 Details

SET NOT FOR CONSTRUCTION

For planning purposes only, do not scale drawings



4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

SET NOT FOR CONSTRUCTION
For planning purposes only, do not scale drawings

TENTATIVE SUBDIVISION MAP

P1.0

3 Health Risk Assessment Setting

3.1 San Joaquin Valley Air Pollution Control District

The Project is located in the San Joaquin Valley Air Basin (SJVAB), which consists of eight counties: Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (biogenic) activities that produce emissions.

Area and stationary sources within SJVAB are under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). An overview of important air pollutants, and SJVPACD roles in controlling them, is provided in the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts*[7] (GAMAQI), along with in-depth discussions on the meteorology and geography that contribute to unhealthy levels of air pollution. This HRA focuses on Toxic Air Contaminants (TAC).

Toxic Air Contaminants (TAC), as defined by the California Health & Safety Code (CH&SC) §44321, are listed in Appendices AI and AII in AB 2588 Air Toxic "Hot Spots" and Assessment Act's Emissions Inventory Criteria and Guideline Regulation document. Potential health impacts from TACs are generally categorized into two groups: carcinogenic (cancer causing) effects and non-carcinogenic (non-cancer-causing) effects.

The non-carcinogenic effects can be further divided into long-term (chronic) health effects such as birth defects, neurological damage, or genetic damage; and short- term (acute) effects such as eye irritation, respiratory irritation, and nausea. The California TAC list identifies about 700 plus pollutants. Carcinogenic and/or non-carcinogenic toxicity criteria have been established for a subset of these pollutants by OEHHA, as required by CH&SC §44360. TACs used in determining the potential exposure to the public should not be confused with the 189 Hazardous Air Pollutants (HAP) listed in the Clean Air Act.

SJVAPCD oversees the assessment of health risk associated with TAC emissions from new development in the SJVAB. SJVAPCD lays out a basic framework for understanding and assessing health risk, under CEQA, in the GAMAQI.

The location of a development project is a major factor in determining whether the project will result in localized air quality impacts. The potential for adverse air quality impacts increases as the distance between the source of emissions and receptors decreases. Receptors include sensitive receptors and worker receptors. Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (these sensitive land uses may also be referred to as sensitive receptors). Worker receptors refer to employees and locations where people work. Impacts on sensitive receptors are of particular concern, because they are the people most vulnerable to the effects of air pollution.

[7] (San Joaquin Valley Air Pollution Control District, 2015)

From a health risk perspective there are two types of land use projects that have the potential to cause long-term public health risk impacts:

Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors.

Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxics sources.

Projects of either type must be assessed to determine whether the resulting health risk to sensitive receptors would exceed SJVAPCD established thresholds of significance for carcinogenic, non-carcinogenic acute, and non-carcinogenic chronic risk.

The OEHHA *Risk Assessment Guidelines* are the standards for estimating health risks. OEHHA is responsible for developing and providing toxicological and medical information relevant to decisions involving public health to state and local government agencies. Historically, state laws have required OEHHA to develop Risk Assessment Guidelines for estimating health risk associated with various sources of air pollution. Furthermore, the Children's Environmental Health Protection Act (SB 25, Escutia, 1999) requires OEHHA to biennially review risk assessment methods for air toxics, and related information, to ensure that they adequately protect infants and children.

The SJVAPCD risk management policy works in conjunction with the OEHHA *Risk Assessment Guidelines*. The SJVAPCD risk management policy further clarifies and provides guidance on the appropriate options to use, such as a longer exposure period and more conservative air dispersion modeling.

SJVAPCD staff members are considered leading statewide experts in the field of health risk assessment and have developed significant resources from guidance documents to database tools to assist other agencies, consultants, and regulated sources. Therefore, the SJVAPCD concludes that use of its risk management policy and the OEHHA *Risk Assessment Guidelines* is appropriate in determining significance within the environmental review process.

3.2 Diesel Particulate Matter[8]

As described in Section 4 (HRA Methodology), the Project could be a substantial source of Diesel Particulate Matter (DPM) during construction. DPM has been identified as a toxic air contaminant by ARB based on its potential exposures and health concerns. OEHHA evaluated over 30 human epidemiological studies on the carcinogenic effects of diesel exhaust. These studies found that long-term occupational exposures to diesel exhaust were associated with a 40 percent increase, on average, in the relative risk of lung cancer. These epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer.

A number of adverse long-term noncancer effects have been associated with exposure to diesel exhaust. Occupational studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed. Reductions in pulmonary function have also been reported following occupational exposures in chronic studies.

[8] (California Air Pollution Control Officers Association, 2024)

Adverse short-term health effects have also been associated with exposures to diesel exhaust. Occupational exposures to DPM have been associated with significant cross-shift decreases in lung function. Increased cough, labored breathing, chest tightness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A significant increase in airway resistance and increases in eye and nasal irritation were observed in human volunteers following one-hour chamber exposure to diesel exhaust.

3.3 Thresholds of Significance

This HRA focuses on answering the following question from the Air Quality section of Appendix G in the *CEQA Guidelines*[9]:

3. Would the Project expose sensitive receptors to substantial pollutant concentrations?

The *CEQA Guidelines* state that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination.

SJVAPCD has established the following thresholds of significance for risk exposure to TAC:

Table 1 SJVPACD Thresholds of Significance – Toxic Air Contaminants

CARCINOGENS	Maximally Exposed Individual risk equals or exceeds 20 in one million
NON CARCINOGENS	**Acute**: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Source: (San Joaquin Valley Air Pollution Control District, 2015)

Therefore, if the calculated risk exposure from Project TAC emissions is below the SJVAPCD thresholds of significance, it can be concluded that the Project would not expose sensitive receptors to substantial pollutant concentrations and this impact would be considered less than significant under CEQA.

[9] (Association of Environmental Professionals, 2025)

4 HRA Methodology

The Project could result in toxic air contaminant (TAC) emissions during construction and, to a limited extent, during operation. The primary TAC emissions resulting from Project construction would include diesel particulate matter (DPM), exhausted during the operation of on- and-off road diesel-fueled vehicles and equipment.

DPM is the particulate component of diesel exhaust and has been identified as a TAC by the California Air Resources Board (CARB) based on its potential exposures and health concerns. Epidemiological studies strongly suggest a relationship between occupational diesel exhaust exposure and lung cancer. A number of adverse acute and chronic effects have also been associated with exposure to diesel exhaust.[10]

The Project would develop a residential subdivision. Operation would not include any substantial sources of TAC.[11] Additional health risk could occur from the use of household cleaners, commercial products, and other hazardous materials used by individual residents. However, these sources would be intermittent, localized to the point of activity, and up to the discretion of individual residents. Determining the use of such TAC sources would be highly speculative, and compliance with existing federal, state, and local regulations, which are strictly enforced outside of CEQA, would ensure impacts from Project operation remain less than significant.

Because there are no other substantial sources of TAC expected, during construction or operation, this HRA is focused on the health risk associated with construction DPM.

Construction health risk was evaluated in the following steps:

1. Estimated DPM Emissions. Project air pollutant emissions were estimated using the *California Emissions Estimator Model*[12] (CalEEMod) (Version 2022.1.1.29). SJVAPCD considers exhaust particulate matter 2.5 microns and smaller (PM2.5) to be a reasonable surrogate for DPM, and the maximum (worst year) annual construction emissions were used for subsequent modeling and calculation (described below). Project-specific information was used where available; CalEEMod defaults were used for all other inputs. Control measures from the primary air quality analysis, described in the initial study, were incorporated into the emissions calculations, prior to this HRA; no additional mitigation was required as a result of this analysis. The CalEEMod results are attached as Appendix A.
2. Modeled air dispersion. The United States Environmental Protection Agency's (U.S. EPA) *American Meteorological Society/EPA Regulatory Model* (AERMOD) air dispersion model was used to model the annual downwind air concentration at nearby receptors, based on a normalized emission rate of one gram per second. Meteorological data were obtained from SJVAPCD (Visalia met site), along with required modeling parameters. Terrain was incorporated using the built-in WebGIS tool. Sensitive receptors include nearby residences to the northwest, with the closest being approximately 120 meters from the Project site perimeter. A total of 131

[10] (California Air Resources Board, 2024)
[11] As defined by the California Health & Safety Code (CH&SC) §44321 and listed in Appendices AI and AII in AB 2588 Air Toxic "Hot Spots" and Assessment Act's Emissions Inventory Criteria and Guideline Regulation document. (San Joaquin Valley Air Pollution Control District, 2015)
[12] (California Air Pollution Control Officers Association, 2022)

receptors (resident and worker) were selected for a representative analysis, within a modeling domain radius of 1 kilometer.

3. Calculated Risk. Normalized downwind air concentrations for each receptor (modeled in the step above) were imported into the CARB Hotspots Analysis and Reporting Program (HARP2) *Air Dispersion Modeling and Risk Tool*[13] (ADMRT) and combined with the toxic emissions data (DPM emissions from the CalEEMod step described above) to estimate the ground level concentrations of DPM at each receptor. Cancer risk and chronic hazard index (HI) were calculated in ADMRT using SJVAPCD-required exposure parameters and Project information. OEHHA has not established a Reference Exposure Level (REL) for 8-hour chronic, or acute health risk from DPM. Thus, the 8-hour chronic and acute HI are not calculated for HRA where the only substantial TAC is DPM, except in unusual situations such as when a sensitive receptor is located directly above the emission release point (e.g., on a hillside or in a multistory apartment building).[14]

Results of the AERMOD modeling and ADMRT calculations are attached in Appendix B and Appendix C, respectively, along with a map of receptors. Modeling input and output files will be made available to reviewing agencies upon request.

[13] (California Air Resources Board, 2022a)
[14] (California Air Resources Board, 2024)

5 HRA Results

5.1 Construction Risk

The CalEEMod results (Appendix A) show that maximum annual construction emissions of PM2.5 exhaust would be 0.01 metric tons per year (MT/yr), or approximately 22 pounds per year (lb/yr). The exposure period for sensitive receptors would be the construction duration of approximately 2 years.

Results of the construction risk assessments are compared to SJVAPCD thresholds of significance in the table below. The highest risk exposure occurred at receptor 1, approximately 120 meters northwest of the Project site.

Table 2 HRA Results Compared to SJVAPCD Thresholds of Significance

RISK	CARCINOGEN (risk in one million)	CHRONIC HAZARD INDEX
Construction	2.39	0.0014
Thresholds of Significance	20	1

Notes: *Calculation based on mitigated emissions. Hazard indices are for Maximally Exposed Individuals. No HI was calculated for 8-hour Chronic or Acute risk because OEHHA has not established REL.* (California Air Resources Board, 2024)

Sources: *Appendix C HARP2 ADMRT Results*

As shown in the Table above, construction risk would be below the SJVAPCD Thresholds of Significance. Therefore, consistent with the *CEQA Guidelines*[15], the Project would not expose sensitive receptors to substantial pollutant concentrations, and this impact would be considered *less than significant.*

5.2 Mitigation

Health risk impacts to sensitive receptors due to Project TAC emissions would be *less than significant*. The control measures included in the CalEEMod analysis were incorporated during the primary air quality analysis in the Initial Study, prior to this HRA. No additional mitigation is required outside of those measures that were already selected and included in the emissions estimates.

[15] (Association of Environmental Professionals, 2025)

6 References

Association of Environmental Professionals. (2025). *2025 California Environmental Quality Act (CEQA) Statute and Guidelines.*

California Air Pollution Control Officers Association. (2022). *California Emissions Estimator Model.* Retrieved from https://caleemod.com/.

California Air Pollution Control Officers Association. (2024). *Non-Vehicular Diesel Engine Risk Assessment Guidance.* Retrieved from https://ww2.arb.ca.gov/sites/default/files/classic/ab2588/2024%20DICE%20Screening%20Risk%20Guidelines.pdf.

California Air Resources Board. (2022a). *HARP Air Dispersion Modeling and Risk Tool.* Retrieved from https://ww2.arb.ca.gov/resources/documents/harp-air-dispersion-modeling-and-risk-tool.

California Air Resources Board. (2024). *Non-Vehicular Diesel Engine Risk Assessment Guidance.* Retrieved from https://ww2.arb.ca.gov/resources/documents/non-vehicular-diesel-engine-risk-assessment-guidance.

Office of Environmental Health Hazard Asssessment. (2015). *Risk Assessment Guidelines - Guidance Manual for Preparation of Health Risk Assessments.* Retrieved from https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

San Joaquin Valley Air Pollution Control District. (2015). *Guidance for Assessing and Mitigating Air Quality Impacts.* Retrieved from https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf.

San Joaquin Valley Air Pollution Control District. (2015). *Guidance for Assessing and Mitigating Air Quality Impacts.* Retrieved from https://www.valleyair.org/transportation/GAMAQI.pdf.

San Joaquin Valley Air Pollution Control District. (2020). *Policy APR 1906 - Framework for Performing Health Risk Assessments.* Retrieved from https://ww2.valleyair.org/media/0shm0mlk/apr-1906.pdf.

San Joaquin Valley Air Pollution Control District. (2022a). *Guidance for Air Dispersion Modeling.* Retrieved from https://ww2.valleyair.org/media/zlbhrg22/modeling_guidance.pdf.

Appendix A. CalEEMod Results

Prepared by 4Creeks, Inc.:

January 2025

Fernandes - District Rule 9510 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

1.2. Land Use Types

1.3. User-Selected Emission Reduction Measures by Emissions Sector

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

3.2. Demolition (2026) - Mitigated

3.3. Site Preparation (2026) - Unmitigated

3.4. Site Preparation (2026) - Mitigated

3.5. Grading (2026) - Unmitigated

3.6. Grading (2026) - Mitigated

3.7. Building Construction (2026) - Unmitigated

3.8. Building Construction (2026) - Mitigated

3.9. Building Construction (2027) - Unmitigated

3.10. Building Construction (2027) - Mitigated

3.11. Paving (2027) - Unmitigated

3.12. Paving (2027) - Mitigated

3.13. Architectural Coating (2027) - Unmitigated

3.14. Architectural Coating (2027) - Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fernandes - District Rule 9510
Construction Start Date	3/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.90
Precipitation (days)	24.4
Location	36.18382092729347, -119.34975880649861
County	Tulare
City	Tulare
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2746
EDFZ	9
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.29

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
Single Family Housing	120	Dwelling Unit	18.7	234,000	23,400	—	406	—

City Park	0.85	Acre	0.85	0.00	37,071	37,071	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Transportation	T-32*	Orient Project Toward Transit, Bicycle, or Pedestrian Facility
Transportation	T-35*	Provide Tra c Calming Measures
Energy	E-10-B	Establish Onsite Renewable Energy Systems: Solar Power
Energy	E-12-A	Install Alternative Type of Water Heater in Place of Gas Storage Tank Heater in Residences
Energy	E-12-B	Install Electric Space Heater in Place of Natural Gas Heaters in Residences
Energy	E-13	Install Electric Ranges in Place of Gas Ranges

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

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.	3.47	2.93	25.4	25.6	0.06	1.06	9.32	10.4	0.98	3.68	4.66	—	6,297	6,297	0.26	0.07	2.07	6,320
Mit.	0.67	0.67	3.67	33.2	0.06	0.12	3.71	3.83	0.12	1.45	1.57	—	6,297	6,297	0.26	0.07	2.07	6,320
% Reduced	81%	77%	86%	-30%	—	89%	60%	63%	88%	61%	66%	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.81	2.36	21.1	19.8	0.03	0.85	6.59	7.00	0.78	3.38	3.75	—	3,794	3,794	0.15	0.07	0.05	3,819
Mit.	0.51	0.45	4.91	18.9	0.03	0.07	2.60	2.63	0.07	1.32	1.35	—	3,794	3,794	0.15	0.07	0.05	3,819
% Reduced	82%	81%	77%	4%	—	92%	61%	62%	91%	61%	64%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.96	0.81	6.62	7.60	0.01	0.26	1.15	1.41	0.23	0.44	0.68	—	1,724	1,724	0.07	0.04	0.43	1,738
Mit.	0.30	0.28	1.88	8.86	0.01	0.04	0.58	0.63	0.04	0.20	0.24	—	1,724	1,724	0.07	0.04	0.43	1,738
% Reduced	69%	65%	72%	-17%	—	84%	49%	56%	83%	54%	64%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.15	1.21	1.39	< 0.005	0.05	0.21	0.26	0.04	0.08	0.12	—	285	285	0.01	0.01	0.07	288
Mit.	0.06	0.05	0.34	1.62	< 0.005	0.01	0.11	0.11	0.01	0.04	0.04	—	285	285	0.01	0.01	0.07	288
% Reduced	69%	65%	72%	-17%	—	84%	49%	56%	83%	54%	64%	—	—	—	—	—	—	—

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.47	2.93	25.4	25.6	0.06	1.06	9.32	10.4	0.98	3.68	4.66	—	6,297	6,297	0.26	0.07	2.07	6,320
2027	1.12	0.94	6.93	10.1	0.02	0.24	0.43	0.66	0.22	0.10	0.32	—	2,239	2,239	0.09	0.07	1.87	2,265
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2026	2.81	2.36	21.1	19.8	0.03	0.85	6.59	7.00	0.78	3.38	3.75	—	3,794	3,794	0.15	0.07	0.05	3,819
2027	1.08	0.92	6.99	9.43	0.02	0.24	0.43	0.66	0.22	0.10	0.32	—	2,197	2,197	0.08	0.07	0.05	2,220
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.96	0.81	6.62	7.60	0.01	0.26	1.15	1.41	0.23	0.44	0.68	—	1,724	1,724	0.07	0.04	0.43	1,738
2027	0.46	0.39	2.99	4.15	0.01	0.10	0.17	0.28	0.09	0.04	0.14	—	929	929	0.04	0.03	0.33	939
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.18	0.15	1.21	1.39	< 0.005	0.05	0.21	0.26	0.04	0.08	0.12	—	285	285	0.01	0.01	0.07	288
2027	0.08	0.07	0.55	0.76	< 0.005	0.02	0.03	0.05	0.02	0.01	0.02	—	154	154	0.01	< 0.005	0.05	155

2.3. Construction Emissions by Year, Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.67	0.67	3.67	33.2	0.06	0.12	3.71	3.83	0.12	1.45	1.57	—	6,297	6,297	0.26	0.07	2.07	6,320
2027	0.52	0.46	2.93	11.7	0.02	0.06	0.43	0.49	0.06	0.10	0.16	—	2,239	2,239	0.09	0.07	1.87	2,265
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.51	0.45	4.91	18.9	0.03	0.07	2.60	2.63	0.07	1.32	1.35	—	3,794	3,794	0.15	0.07	0.05	3,819
2027	0.48	0.44	3.00	11.0	0.02	0.06	0.43	0.49	0.06	0.10	0.16	—	2,197	2,197	0.08	0.07	0.05	2,220
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.30	0.28	1.88	8.86	0.01	0.04	0.58	0.63	0.04	0.20	0.24	—	1,724	1,724	0.07	0.04	0.43	1,738
2027	0.20	0.18	1.27	4.79	0.01	0.03	0.17	0.20	0.02	0.04	0.07	—	929	929	0.04	0.03	0.33	939
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.06	0.05	0.34	1.62	< 0.005	0.01	0.11	0.11	0.01	0.04	0.04	—	285	285	0.01	0.01	0.07	288
2027	0.04	0.03	0.23	0.87	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	154	154	0.01	< 0.005	0.05	155

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.	10.2	9.86	3.53	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,962	10,037	8.02	0.40	26.9	10,383
Mit.	10.2	9.86	3.52	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	8,702	8,777	7.95	0.39	26.9	9,119
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	13%	13%	1%	2%	—	12%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.05	8.69	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,157	9,232	8.07	0.43	2.33	9,565
Mit.	9.05	8.69	4.06	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	7,897	7,973	7.99	0.42	2.33	8,301
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	14%	14%	1%	2%	—	13%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	9,219	9,295	8.04	0.41	12.3	9,629
Mit.	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	7,960	8,035	7.96	0.40	12.3	8,365
% Reduced	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	14%	14%	1%	2%	—	13%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,526	1,539	1.33	0.07	2.04	1,594
Mit.	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,318	1,330	1.32	0.07	2.04	1,385
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	—	< 0.5%	2%	—	< 0.5%	—	14%	14%	1%	2%	—	13%

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	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Area	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	10.2	9.86	3.53	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,962	10,037	8.02	0.40	26.9	10,383
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Area	5.03	5.03	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.05	8.69	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	9,157	9,232	8.07	0.43	2.33	9,565
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.01	3.67	3.68	30.8	0.07	0.05	6.76	6.80	0.05	1.71	1.76	—	7,155	7,155	0.38	0.37	10.6	7,284
Area	5.34	5.32	0.03	3.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	8.98	8.98	< 0.005	< 0.005	—	9.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	2,020	2,020	0.13	0.02	—	2,028
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	9,219	9,295	8.04	0.41	12.3	9,629
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206
Area	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	335	335	0.02	< 0.005	—	336
Water	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
Total	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,526	1,539	1.33	0.07	2.04	1,594

2.6. Operations Emissions by Sector, Mitigated

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	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Area	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	10.2	9.86	3.52	45.5	0.08	0.05	7.03	7.08	0.05	1.78	1.83	75.1	8,702	8,777	7.95	0.39	26.9	9,119
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Area	5.03	5.03	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.05	8.69	4.06	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	75.1	7,897	7,973	7.99	0.42	2.33	8,301
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.01	3.67	3.68	30.8	0.07	0.05	6.76	6.80	0.05	1.71	1.76	—	7,155	7,155	0.38	0.37	10.6	7,284
Area	5.34	5.32	0.03	3.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	8.98	8.98	< 0.005	< 0.005	—	9.01
Energy	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	761	761	0.05	0.01	—	764
Water	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Waste	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Total	9.35	8.99	3.71	34.1	0.07	0.05	6.76	6.81	0.05	1.71	1.76	75.1	7,960	8,035	7.96	0.40	12.3	8,365
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206
Area	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49
Energy	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	126	126	0.01	< 0.005	—	126
Water	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
Total	1.71	1.64	0.68	6.23	0.01	0.01	1.23	1.24	0.01	0.31	0.32	12.4	1,318	1,330	1.32	0.07	2.04	1,385

3. Construction Emissions Details

3.1. Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.31	0.31	—	0.05	0.05	—	—	—	—	—	—	—
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	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.67	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	0.01	0.01	0.01	117
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	0.01	0.01	0.33	0.08	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	253	253	0.01	0.04	0.02	264
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.53	6.53	< 0.005	< 0.005	0.01	6.63
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	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.29	2.29	< 0.005	< 0.005	< 0.005	2.40

3.2. Demolition (2026) - Mitigated

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

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

Off-Road Equipment	0.36	0.36	4.51	18.2	0.03	0.06	—	0.06	0.06	—	0.06	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.31	0.31	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.25	1.00	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.05	0.18	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.67	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	0.01	0.01	0.01	117
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	0.01	0.01	0.33	0.08	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	253	253	0.01	0.04	0.02	264
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.53	6.53	< 0.005	< 0.005	0.01	6.63
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	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.8	13.8	< 0.005	< 0.005	0.01	14.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.10
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.29	2.29	< 0.005	< 0.005	< 0.005	2.40

3.3. Site Preparation (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	1.21	1.01	9.38	8.97	0.02	0.40	—	0.40	0.37	—	0.37	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	6.55	6.55	—	3.37	3.37	—	—	—	—	—	—	—
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 Equipm	1.21	1.01	9.38	8.97	0.02	0.40	—	0.40	0.37	—	0.37	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	6.55	6.55	—	3.37	3.37	—	—	—	—	—	—	—
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	0.03	0.03	0.26	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	45.7	45.7	< 0.005	< 0.005	—	45.9
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.09	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	0.02	0.02	—	—	—	—	—	—	—
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	0.30	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	0.16	44.0

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.3	38.3	< 0.005	< 0.005	< 0.005	38.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
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	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
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

3.4. Site Preparation (2026) - Mitigated

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	0.16	0.16	0.82	8.76	0.02	0.03	—	0.03	0.03	—	0.03	—	1,669	1,669	0.07	0.01	—	1,675

Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
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	0.16	0.16	0.82	8.76	0.02	0.03	—	0.03	0.03	—	0.03	—	1,669	1,669	0.07	0.01	—	1,675
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.02	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	45.7	45.7	< 0.005	< 0.005	—	45.9
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.57	7.57	< 0.005	< 0.005	—	7.60

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	0.16	44.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	38.3	38.3	< 0.005	< 0.005	< 0.005	38.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	—	1.09	1.09	< 0.005	< 0.005	< 0.005	1.11
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	—	0.18	0.18	< 0.005	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (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	3.39	2.85	25.4	24.6	0.06	1.06	—	1.06	0.98	—	0.98	—	6,167	6,167	0.25	0.05	—	6,188
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
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	0.28	0.23	2.09	2.03	< 0.005	0.09	—	0.09	0.08	—	0.08	—	507	507	0.02	< 0.005	—	509
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
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	0.05	0.04	0.38	0.37	< 0.005	0.02	—	0.02	0.01	—	0.01	—	83.9	83.9	< 0.005	< 0.005	—	84.2

Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
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	0.91	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	130	130	0.01	0.01	0.47	132
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	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	0.02	9.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.65
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

3.6. Grading (2026) - Mitigated

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	0.59	0.59	3.62	32.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,167	6,167	0.25	0.05	—	6,188
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—	—
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	0.05	0.05	0.30	2.66	< 0.005	0.01	—	0.01	0.01	—	0.01	—	507	507	0.02	< 0.005	—	509
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.12	0.12	—	—	—	—	—	—	—
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	0.05	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	83.9	83.9	< 0.005	< 0.005	—	84.2
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—

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	0.91	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	130	130	0.01	0.01	0.47	132
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	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	0.02	9.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (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	0.90	0.75	6.69	7.56	0.02	0.25	—	0.25	0.23	—	0.23	—	1,584	1,584	0.06	0.01	—	1,590
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	0.90	0.75	6.69	7.56	0.02	0.25	—	0.25	0.23	—	0.23	—	1,584	1,584	0.06	0.01	—	1,590
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	0.39	0.32	2.87	3.24	0.01	0.11	—	0.11	0.10	—	0.10	—	679	679	0.03	0.01	—	681
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	0.07	0.06	0.52	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	112	112	< 0.005	< 0.005	—	113
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	0.24	0.23	0.15	2.62	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	374	374	0.02	0.01	1.35	381
Vendor	0.02	0.01	0.39	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	294	294	0.01	0.04	0.73	308

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	0.22	0.19	0.20	1.93	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	331	331	0.02	0.01	0.03	336
Vendor	0.02	0.01	0.42	0.15	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	295	295	0.01	0.04	0.02	308
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	0.09	0.09	0.08	0.88	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	147	147	0.01	0.01	0.25	149
Vendor	0.01	< 0.005	0.18	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.14	132
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	0.02	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.9
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

3.8. Building Construction (2026) - Mitigated

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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.11	1.04	3.91	0.01	0.03	—	0.03	0.02	—	0.02	—	679	679	0.03	0.01	—	681
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	0.71	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	112	112	< 0.005	< 0.005	—	113
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	0.24	0.23	0.15	2.62	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	374	374	0.02	0.01	1.35	381
Vendor	0.02	0.01	0.39	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	294	294	0.01	0.04	0.73	308
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	0.22	0.19	0.20	1.93	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	331	331	0.02	0.01	0.03	336

Vendor	0.02	0.01	0.42	0.15	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	295	295	0.01	0.04	0.02	308
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	0.09	0.09	0.08	0.88	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	147	147	0.01	0.01	0.25	149
Vendor	0.01	< 0.005	0.18	0.06	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.14	132
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	0.02	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.4	24.4	< 0.005	< 0.005	0.04	24.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.02	21.9
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

3.9. Building Construction (2027) - 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	0.87	0.73	6.41	7.53	0.02	0.23	—	0.23	0.21	—	0.21	—	1,584	1,584	0.06	0.01	—	1,590
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	0.87	0.73	6.41	7.53	0.02	0.23	—	0.23	0.21	—	0.21	—	1,584	1,584	0.06	0.01	—	1,590

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	0.34	0.29	2.53	2.98	0.01	0.09	—	0.09	0.08	—	0.08	—	626	626	0.03	0.01	—	628
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	0.06	0.05	0.46	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	104	104	< 0.005	< 0.005	—	104
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	0.23	0.20	0.14	2.41	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	367	367	0.02	0.01	1.22	373
Vendor	0.02	0.01	0.38	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.65	302
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	0.19	0.18	0.18	1.77	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	324	324	0.01	0.01	0.03	329
Vendor	0.02	0.01	0.40	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.02	302
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	0.08	0.07	0.07	0.74	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	133	133	0.01	0.01	0.21	135
Vendor	0.01	< 0.005	0.16	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.11	119

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	0.01	0.01	0.01	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.03	22.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.9	18.9	< 0.005	< 0.005	0.02	19.8
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

3.10. Building Construction (2027) - Mitigated

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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.27	0.25	2.42	9.13	0.02	0.06	—	0.06	0.06	—	0.06	—	1,584	1,584	0.06	0.01	—	1,590
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	0.11	0.10	0.96	3.61	0.01	0.02	—	0.02	0.02	—	0.02	—	626	626	0.03	0.01	—	628

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	104	104	< 0.005	< 0.005	—	104
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	0.23	0.20	0.14	2.41	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	367	367	0.02	0.01	1.22	373
Vendor	0.02	0.01	0.38	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.65	302
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	0.19	0.18	0.18	1.77	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	324	324	0.01	0.01	0.03	329
Vendor	0.02	0.01	0.40	0.14	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	288	288	0.01	0.04	0.02	302
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	0.08	0.07	0.07	0.74	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	133	133	0.01	0.01	0.21	135
Vendor	0.01	< 0.005	0.16	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.11	119
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	0.01	0.01	0.01	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.0	22.0	< 0.005	< 0.005	0.03	22.4
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.9	18.9	< 0.005	< 0.005	0.02	19.8
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

3.11. Paving (2027) - 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	0.44	0.37	3.47	4.98	0.01	0.15	—	0.15	0.14	—	0.14	—	756	756	0.03	0.01	—	758
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.19	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.4	41.4	< 0.005	< 0.005	—	41.5
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.85	6.85	< 0.005	< 0.005	—	6.88
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.42	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.7	63.7	< 0.005	< 0.005	0.21	64.7
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	0.01	3.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
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

3.12. Paving (2027) - Mitigated

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	0.08	0.08	0.97	5.30	0.01	0.01	—	0.01	0.01	—	0.01	—	756	756	0.03	0.01	—	758
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.05	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	41.4	41.4	< 0.005	< 0.005	—	41.5
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.85	6.85	< 0.005	< 0.005	—	6.88
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.42	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	63.7	63.7	< 0.005	< 0.005	0.21	64.7
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.20	3.20	< 0.005	< 0.005	0.01	3.25

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	< 0.005	0.54
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

3.13. Architectural Coating (2027) - 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	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
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	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.48	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.24	74.6
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	0.01	3.74
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	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
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

3.14. Architectural Coating (2027) - Mitigated

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-Roa Equipment	0.02	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
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-Roa d Equipm ent	< 0.005	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
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-Roa d Equipm ent	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.48	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.3	73.3	< 0.005	< 0.005	0.24	74.6
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	0.01	3.74

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	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.57	4.22	3.46	38.6	0.08	0.05	7.01	7.06	0.05	1.78	1.82	—	7,868	7,868	0.36	0.36	25.1	8,009
City Park	0.01	0.01	0.01	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.07	20.5
Total	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.02	3.66	4.06	30.4	0.07	0.05	7.01	7.06	0.05	1.78	1.82	—	7,083	7,083	0.41	0.39	0.65	7,211
City Park	0.01	0.01	0.01	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	< 0.005	18.8

Total	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.73	0.67	0.67	5.61	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,183	1,183	0.06	0.06	1.76	1,204
City Park	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.68
Total	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206

4.1.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.57	4.22	3.46	38.6	0.08	0.05	7.01	7.06	0.05	1.78	1.82	—	7,868	7,868	0.36	0.36	25.1	8,009
City Park	0.01	0.01	0.01	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	20.2	20.2	< 0.005	< 0.005	0.07	20.5
Total	4.58	4.23	3.47	38.7	0.08	0.05	7.03	7.08	0.05	1.78	1.83	—	7,888	7,888	0.36	0.36	25.2	8,030
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.02	3.66	4.06	30.4	0.07	0.05	7.01	7.06	0.05	1.78	1.82	—	7,083	7,083	0.41	0.39	0.65	7,211
City Park	0.01	0.01	0.01	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	< 0.005	18.8
Total	4.03	3.66	4.07	30.5	0.07	0.05	7.03	7.08	0.05	1.78	1.83	—	7,101	7,101	0.41	0.39	0.65	7,229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.73	0.67	0.67	5.61	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,183	1,183	0.06	0.06	1.76	1,204
City Park	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.68
Total	0.73	0.67	0.67	5.62	0.01	0.01	1.23	1.24	0.01	0.31	0.32	—	1,185	1,185	0.06	0.06	1.76	1,206

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,020	2,020	0.13	0.02	—	2,028
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	335	335	0.02	< 0.005	—	336
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	335	335	0.02	< 0.005	—	336

4.2.2. Electricity Emissions By Land Use - Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	772	772	0.05	0.01	—	775
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	128	128	0.01	< 0.005	—	128

City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	128	128	0.01	< 0.005	—	128

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	-0.01	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-11.3	-11.3	> -0.005	> -0.005	—	-11.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-1.87	-1.87	> -0.005	> -0.005	—	-1.88
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	> -0.005	—	> -0.005	> -0.005	—	> -0.005	—	-1.87	-1.87	> -0.005	> -0.005	—	-1.88

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.63	0.60	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.2	18.2	< 0.005	< 0.005	—	18.3
Total	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	5.03	5.03	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.92	0.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.49
Total	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49

4.3.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.63	0.60	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.2	18.2	< 0.005	< 0.005	—	18.3
Total	5.66	5.63	0.07	6.81	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	18.2	18.2	< 0.005	< 0.005	—	18.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	5.03	5.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	5.03	5.03	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	0.92	0.92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.05	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.49	1.49	< 0.005	< 0.005	—	1.49

Total	0.97	0.97	0.01	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.49	1.49	< 0.005	< 0.005	—	1.49

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.62	5.10	6.72	0.17	< 0.005	—	12.1
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.69	0.69	< 0.005	< 0.005	—	0.70
Total	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8

4.4.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	9.79	30.8	40.6	1.01	0.02	—	72.9
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	4.19	4.19	< 0.005	< 0.005	—	4.21
Total	—	—	—	—	—	—	—	—	—	—	—	9.79	35.0	44.8	1.01	0.02	—	77.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.62	5.10	6.72	0.17	< 0.005	—	12.1
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.69	0.69	< 0.005	< 0.005	—	0.70
Total	—	—	—	—	—	—	—	—	—	—	—	1.62	5.79	7.41	0.17	< 0.005	—	12.8

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.8
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9

4.5.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	228
City Park	—	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.14
Total	—	—	—	—	—	—	—	—	—	—	—	65.3	0.00	65.3	6.53	0.00	—	229
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.8
City Park	—	—	—	—	—	—	—	—	—	—	—	0.01	0.00	0.01	< 0.005	0.00	—	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.08	0.00	—	37.9

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28

4.6.2. Mitigated

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.68	1.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.28	0.28

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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
Demolition	Demolition	3/1/2026	3/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	3/30/2026	4/13/2026	5.00	10.0	—
Grading	Grading	4/14/2026	5/26/2026	5.00	30.0	—
Building Construction	Building Construction	5/27/2026	7/21/2027	5.00	300	—
Paving	Paving	7/22/2027	8/19/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	8/20/2027	9/17/2027	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Tier 4 Final	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40

Grading	Tractors/Loaders/Back	Diesel	Tier 4 Final	1.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Grading	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	1.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Back hoes	Diesel	Tier 4 Final	1.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Final	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.4	LDA,LDT1,LDT2
Demolition	Vendor	—	7.43	HHDT,MHDT
Demolition	Hauling	3.65	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.4	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.43	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—

Grading	Worker	15.0	11.4	LDA,LDT1,LDT2
Grading	Vendor	—	7.43	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.2	11.4	LDA,LDT1,LDT2
Building Construction	Vendor	12.8	7.43	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	11.4	LDA,LDT1,LDT2
Paving	Vendor	—	7.43	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.64	11.4	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.43	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	11.4	LDA,LDT1,LDT2
Demolition	Vendor	—	7.43	HHDT,MHDT
Demolition	Hauling	3.65	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	5.00	11.4	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.43	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.4	LDA,LDT1,LDT2
Grading	Vendor	—	7.43	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	43.2	11.4	LDA,LDT1,LDT2
Building Construction	Vendor	12.8	7.43	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	7.50	11.4	LDA,LDT1,LDT2
Paving	Vendor	—	7.43	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	8.64	11.4	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.43	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	6,300	—
Site Preparation	0.00	0.00	5.00	0.00	—
Grading	0.00	0.00	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.32

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.32	0%
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	532	0.03	< 0.005
2027	0.00	532	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
Single Family Housing	1,133	1,145	1,026	408,529	9,850	9,955	8,922	3,552,360
City Park	0.66	1.67	1.86	357	8.45	21.2	23.7	4,545

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	1,133	1,145	1,026	408,529	9,850	9,955	8,922	3,552,360
City Park	0.66	1.67	1.86	357	8.45	21.2	23.7	4,545

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	120
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	120
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

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)
—	—	—	—	—

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

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)
Single Family Housing	1,386,288	532	0.0330	0.0040	0.00
City Park	0.00	532	0.0330	0.0040	0.00

5.11.2. Mitigated

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)
Single Family Housing	529,890	532	0.0330	0.0040	-35,284
City Park	0.00	532	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)
Single Family Housing	5,107,518	412,755
City Park	0.00	1,188,908

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	5,107,518	412,755
City Park	0.00	1,188,908

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	121	—
City Park	0.07	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	121	—
City Park	0.07	—

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
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	32.4	annual days of extreme heat
Extreme Precipitation	0.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

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

6.2. Initial Climate Risk Scores

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

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

6.3. Adjusted Climate Risk Scores

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

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7

AQ-PM	97.9
AQ-DPM	22.7
Drinking Water	79.0
Lead Risk Housing	45.6
Pesticides	80.2
Toxic Releases	36.4
Traffic	4.76
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	30.9
Haz Waste Facilities/Generators	80.5
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	79.6
Cardio-vascular	93.1
Low Birth Weights	62.9
Socioeconomic Factor Indicators	—
Education	91.6
Housing	55.1
Linguistic	94.8
Poverty	84.9
Unemployment	63.4

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	12.83202874
Employed	20.45425382
Median HI	18.70909791
Education	—
Bachelor's or higher	2.746054151
High school enrollment	100
Preschool enrollment	44.86077249
Transportation	—
Auto Access	45.25856538
Active commuting	12.97318106
Social	—
2-parent households	42.39702297
Voting	12.19042731
Neighborhood	—
Alcohol availability	60.19504684
Park access	52.12370076
Retail density	9.072244322
Supermarket access	26.20300269
Tree canopy	4.812010779
Housing	—
Homeownership	45.46387784
Housing habitability	43.2567689
Low-inc homeowner severe housing cost burden	45.7590145
Low-inc renter severe housing cost burden	38.6629026
Uncrowded housing	24.97112794
Health Outcomes	—
Insured adults	24.03438984
Arthritis	0.0

Asthma ER Admissions	16.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	1.8
Cognitively Disabled	85.7
Physically Disabled	76.0
Heart Attack ER Admissions	13.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	14.1
Elderly	80.7
English Speaking	22.0
Foreign-born	57.2

Outdoor Workers	24.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	80.7
Traffic Density	10.6
Traffic Access	0.0
Other Indices	—
Hardship	86.9
Other Decision Support	—
2016 Voting	17.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	82.0
Healthy Places Index Score for Project Location (b)	16.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	This will be the electric provider
Land Use	The project includes 18.73 acres of residential and a .85 acre park
Construction: Off-Road Equipment	Project specific construction equipment list
Operations: Fleet Mix	District accepted fleet mix 2027 operational year
Operations: Hearths	No fireplaces or woodstoves included in this project
Operations: Energy Use	Homes are not connected to natural gas. Electric demand for all-electric homes is estimated to require 30% higher.

Appendix B. AERMOD Modeling Results

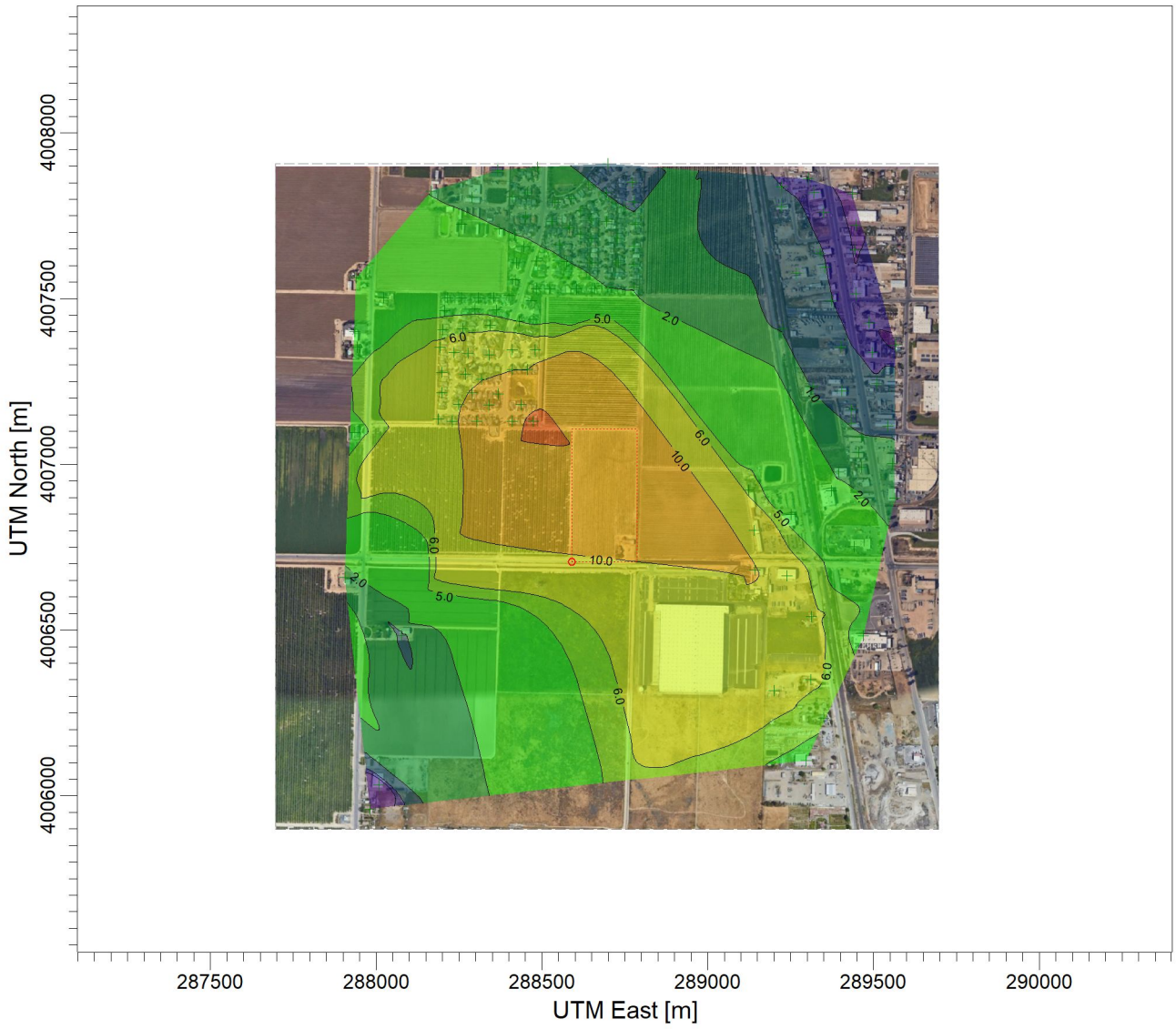
Prepared by Core Environmental Consulting:

Jesse Madsen, Owner, Principal Environmental Scientist
Clovis, CA

February 2025

PROJECT TITLE:

C:\Lakes\AERMOD View\Fernandes Subdivision\Fernandes Subdivision.isc



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 4 YEARS FOR SOURCE GROUP: ALL ug/m^3

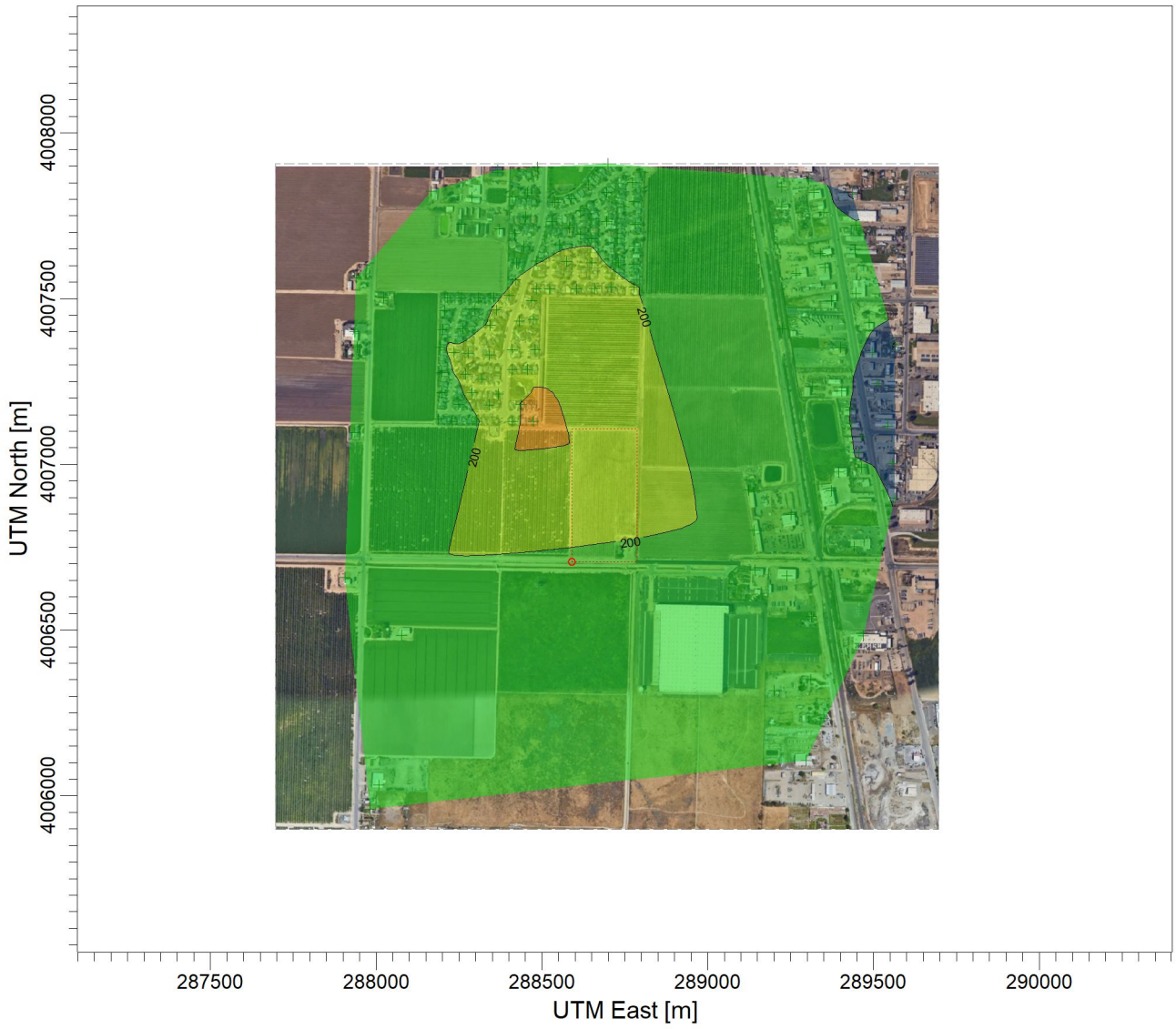
Max: 22.1 [ug/m^3] at (288473.99, 4007130.54)

0.3 0.5 0.6 1.0 2.0 5.0 6.0 10.0 20.0 22.1

COMMENTS:	SOURCES: **1**	COMPANY NAME:	
	RECEPTORS: **131**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:20,773 0 0.5 km	
	MAX: **22.1 ug/m^3**	DATE: **2/28/2025**	PROJECT NO.:

PROJECT TITLE:

C:\Lakes\AERMOD View\Fernandes Subdivision\Fernandes Subdivision.isc



PLOT FILE OF HIGH 1ST HIGH 1-HR VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 328 [ug/m^3] at (288473.99, 4007130.54)

88 90 100 200 300 328

COMMENTS:	SOURCES: **1**	COMPANY NAME:	
	RECEPTORS: **131**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:20,773 0 0.5 km	
	MAX: **328 ug/m^3**	DATE: **2/28/2025**	PROJECT NO.:

Appendix C. HARP 2 ADMRT Calculation Results

Prepared by Core Environmental Consulting:

Jesse Madsen, Owner, Principal Environmental Scientist
Clovis, CA

February 2025

**HARP - Air Dispersion Modeling and Risk Tool v22118

**2/28/2025

**Exported Risk Results

REC	GRP	NETID	X	Y	RISK_SUM	SCENARIO	INHAL_RISI
1	ALL	---	288474	4007131	2.39E-06	2YrCancerDerived_Inh	2.39E-06
2	ALL	---	288411.4	4007131	1.88E-06	2YrCancerDerived_Inh	1.88E-06
3	ALL	---	288303.3	4007131	1.29E-06	2YrCancerDerived_Inh	1.29E-06
4	ALL	---	288229.3	4007131	1.03E-06	2YrCancerDerived_Inh	1.03E-06
5	ALL	---	288186.6	4007136	9.09E-07	2YrCancerDerived_Inh	9.09E-07
6	ALL	---	287936.2	4007096	4.61E-07	2YrCancerDerived_Inh	4.61E-07
7	ALL	---	288437	4007182	1.78E-06	2YrCancerDerived_Inh	1.78E-06
8	ALL	---	288340.3	4007179	1.36E-06	2YrCancerDerived_Inh	1.36E-06
9	ALL	---	288249.2	4007182	1.05E-06	2YrCancerDerived_Inh	1.05E-06
10	ALL	---	288198	4007216	8.91E-07	2YrCancerDerived_Inh	8.91E-07
11	ALL	---	288289.1	4007216	1.11E-06	2YrCancerDerived_Inh	1.11E-06
12	ALL	---	288368.7	4007213	1.35E-06	2YrCancerDerived_Inh	1.35E-06
13	ALL	---	288198	4007279	8.16E-07	2YrCancerDerived_Inh	8.16E-07
14	ALL	---	288269.1	4007273	9.41E-07	2YrCancerDerived_Inh	9.41E-07
15	ALL	---	288317.5	4007256	1.07E-06	2YrCancerDerived_Inh	1.07E-06
16	ALL	---	288411.4	4007287	1.06E-06	2YrCancerDerived_Inh	1.06E-06
17	ALL	---	288456.9	4007287	1.07E-06	2YrCancerDerived_Inh	1.07E-06
18	ALL	---	288479.7	4007347	7.61E-07	2YrCancerDerived_Inh	7.61E-07
19	ALL	---	288411.4	4007347	8.04E-07	2YrCancerDerived_Inh	8.04E-07
20	ALL	---	288340.3	4007330	8.51E-07	2YrCancerDerived_Inh	8.51E-07
21	ALL	---	288277.7	4007335	7.93E-07	2YrCancerDerived_Inh	7.93E-07
22	ALL	---	288235	4007338	7.52E-07	2YrCancerDerived_Inh	7.52E-07
23	ALL	---	288192.3	4007352	6.88E-07	2YrCancerDerived_Inh	6.88E-07
24	ALL	---	287941.9	4007352	4.81E-07	2YrCancerDerived_Inh	4.81E-07
25	ALL	---	287936.2	4007401	4.54E-07	2YrCancerDerived_Inh	4.54E-07
26	ALL	---	287939.1	4007563	3.47E-07	2YrCancerDerived_Inh	3.47E-07
27	ALL	---	288021.6	4007503	4.14E-07	2YrCancerDerived_Inh	4.14E-07
28	ALL	---	288200.8	4007407	6.00E-07	2YrCancerDerived_Inh	6.00E-07
29	ALL	---	288260.6	4007409	6.18E-07	2YrCancerDerived_Inh	6.18E-07
30	ALL	---	288343.1	4007421	6.02E-07	2YrCancerDerived_Inh	6.02E-07
31	ALL	---	288431.3	4007432	5.38E-07	2YrCancerDerived_Inh	5.38E-07
32	ALL	---	288474	4007438	4.93E-07	2YrCancerDerived_Inh	4.93E-07
33	ALL	---	288363	4007466	5.03E-07	2YrCancerDerived_Inh	5.03E-07
34	ALL	---	288297.6	4007469	5.13E-07	2YrCancerDerived_Inh	5.13E-07
35	ALL	---	288206.5	4007463	5.13E-07	2YrCancerDerived_Inh	5.13E-07
36	ALL	---	288215.1	4007503	4.60E-07	2YrCancerDerived_Inh	4.60E-07
37	ALL	---	288257.8	4007503	4.62E-07	2YrCancerDerived_Inh	4.62E-07
38	ALL	---	288309	4007503	4.56E-07	2YrCancerDerived_Inh	4.56E-07
39	ALL	---	288354.5	4007503	4.41E-07	2YrCancerDerived_Inh	4.41E-07
40	ALL	---	288400	4007509	4.10E-07	2YrCancerDerived_Inh	4.10E-07

41	ALL	---	288468.3	4007495	3.91E-07	2YrCancerDerived_Inh	3.91E-07
42	ALL	---	288419.9	4007557	3.33E-07	2YrCancerDerived_Inh	3.33E-07
43	ALL	---	288422.8	4007609	2.78E-07	2YrCancerDerived_Inh	2.78E-07
44	ALL	---	288482.5	4007529	3.35E-07	2YrCancerDerived_Inh	3.35E-07
45	ALL	---	288522.4	4007529	3.13E-07	2YrCancerDerived_Inh	3.13E-07
46	ALL	---	288604.9	4007529	2.68E-07	2YrCancerDerived_Inh	2.68E-07
47	ALL	---	288658.9	4007532	2.36E-07	2YrCancerDerived_Inh	2.36E-07
48	ALL	---	288707.3	4007535	2.12E-07	2YrCancerDerived_Inh	2.12E-07
49	ALL	---	288778.4	4007535	1.85E-07	2YrCancerDerived_Inh	1.85E-07
50	ALL	---	288775.6	4007603	1.55E-07	2YrCancerDerived_Inh	1.55E-07
51	ALL	---	288730.1	4007609	1.64E-07	2YrCancerDerived_Inh	1.64E-07
52	ALL	---	288650.4	4007609	1.90E-07	2YrCancerDerived_Inh	1.90E-07
53	ALL	---	288573.6	4007611	2.19E-07	2YrCancerDerived_Inh	2.19E-07
54	ALL	---	288482.5	4007614	2.51E-07	2YrCancerDerived_Inh	2.51E-07
55	ALL	---	288445.5	4007657	2.32E-07	2YrCancerDerived_Inh	2.32E-07
56	ALL	---	288417.1	4007697	2.15E-07	2YrCancerDerived_Inh	2.15E-07
57	ALL	---	288371.6	4007711	2.18E-07	2YrCancerDerived_Inh	2.18E-07
58	ALL	---	288257.8	4007725	2.42E-07	2YrCancerDerived_Inh	2.42E-07
59	ALL	---	288166.7	4007825	2.04E-07	2YrCancerDerived_Inh	2.04E-07
60	ALL	---	288289.1	4007805	1.87E-07	2YrCancerDerived_Inh	1.87E-07
61	ALL	---	288365.9	4007887	1.43E-07	2YrCancerDerived_Inh	1.43E-07
62	ALL	---	288411.4	4007808	1.63E-07	2YrCancerDerived_Inh	1.63E-07
63	ALL	---	288451.2	4007748	1.81E-07	2YrCancerDerived_Inh	1.81E-07
64	ALL	---	288456.9	4007819	1.52E-07	2YrCancerDerived_Inh	1.52E-07
65	ALL	---	288485.4	4007896	1.24E-07	2YrCancerDerived_Inh	1.24E-07
66	ALL	---	288539.4	4007791	1.45E-07	2YrCancerDerived_Inh	1.45E-07
67	ALL	---	288587.8	4007802	1.32E-07	2YrCancerDerived_Inh	1.32E-07
68	ALL	---	288641.9	4007845	1.11E-07	2YrCancerDerived_Inh	1.11E-07
69	ALL	---	288698.8	4007907	9.03E-08	2YrCancerDerived_Inh	9.03E-08
70	ALL	---	288530.9	4007734	1.68E-07	2YrCancerDerived_Inh	1.68E-07
71	ALL	---	288553.7	4007663	1.96E-07	2YrCancerDerived_Inh	1.96E-07
72	ALL	---	288582.1	4007714	1.63E-07	2YrCancerDerived_Inh	1.63E-07
73	ALL	---	288616.3	4007765	1.37E-07	2YrCancerDerived_Inh	1.37E-07
74	ALL	---	288616.3	4007694	1.62E-07	2YrCancerDerived_Inh	1.62E-07
75	ALL	---	288650.4	4007680	1.57E-07	2YrCancerDerived_Inh	1.57E-07
76	ALL	---	288650.4	4007739	1.36E-07	2YrCancerDerived_Inh	1.36E-07
77	ALL	---	288695.9	4007822	1.06E-07	2YrCancerDerived_Inh	1.06E-07
78	ALL	---	288695.9	4007734	1.28E-07	2YrCancerDerived_Inh	1.28E-07
79	ALL	---	288727.2	4007683	1.37E-07	2YrCancerDerived_Inh	1.37E-07
80	ALL	---	288747.1	4007776	1.09E-07	2YrCancerDerived_Inh	1.09E-07
81	ALL	---	288772.8	4007850	9.14E-08	2YrCancerDerived_Inh	9.14E-08
82	ALL	---	288778.4	4007794	1.01E-07	2YrCancerDerived_Inh	1.01E-07
83	ALL	---	288781.3	4007725	1.16E-07	2YrCancerDerived_Inh	1.16E-07
84	ALL	---	288778.4	4007660	1.34E-07	2YrCancerDerived_Inh	1.34E-07

85	ALL	---	287904.9	4006658	1.45E-07	2YrCancerDerived_Inh	1.45E-07
86	ALL	---	288075.7	4006485	9.32E-08	2YrCancerDerived_Inh	9.32E-08
87	ALL	---	288007.4	4006032	3.21E-08	2YrCancerDerived_Inh	3.21E-08
88	ALL	---	287981.8	4005961	2.79E-08	2YrCancerDerived_Inh	2.79E-08
89	ALL	---	289142.6	4006681	1.12E-06	2YrCancerDerived_Inh	1.12E-06
90	ALL	---	289239.4	4006664	7.82E-07	2YrCancerDerived_Inh	7.82E-07
91	ALL	---	289139.8	4006800	8.73E-07	2YrCancerDerived_Inh	8.73E-07
92	ALL	---	289250.8	4006849	4.73E-07	2YrCancerDerived_Inh	4.73E-07
93	ALL	---	289122.7	4006923	6.01E-07	2YrCancerDerived_Inh	6.01E-07
94	ALL	---	289313.4	4006542	6.90E-07	2YrCancerDerived_Inh	6.90E-07
95	ALL	---	289310.5	4006351	6.81E-07	2YrCancerDerived_Inh	6.81E-07
96	ALL	---	289199.5	4006317	7.26E-07	2YrCancerDerived_Inh	7.26E-07
97	ALL	---	289350.3	4006234	5.58E-07	2YrCancerDerived_Inh	5.58E-07
98	ALL	---	289296.3	4006106	4.26E-07	2YrCancerDerived_Inh	4.26E-07
99	ALL	---	289469.9	4006482	4.64E-07	2YrCancerDerived_Inh	4.64E-07
100	ALL	---	289441.4	4006752	3.40E-07	2YrCancerDerived_Inh	3.40E-07
101	ALL	---	289373.1	4006920	2.56E-07	2YrCancerDerived_Inh	2.56E-07
102	ALL	---	289395.9	4006977	1.96E-07	2YrCancerDerived_Inh	1.96E-07
103	ALL	---	289464.2	4006991	1.59E-07	2YrCancerDerived_Inh	1.59E-07
104	ALL	---	289455.6	4007037	1.36E-07	2YrCancerDerived_Inh	1.36E-07
105	ALL	---	289464.2	4007082	1.12E-07	2YrCancerDerived_Inh	1.12E-07
106	ALL	---	289432.9	4007125	1.02E-07	2YrCancerDerived_Inh	1.02E-07
107	ALL	---	289432.9	4007165	8.99E-08	2YrCancerDerived_Inh	8.99E-08
108	ALL	---	289404.4	4007222	8.28E-08	2YrCancerDerived_Inh	8.28E-08
109	ALL	---	289316.2	4007236	9.69E-08	2YrCancerDerived_Inh	9.69E-08
110	ALL	---	289401.6	4007352	6.93E-08	2YrCancerDerived_Inh	6.93E-08
111	ALL	---	289225.2	4007409	9.84E-08	2YrCancerDerived_Inh	9.84E-08
112	ALL	---	289373.1	4007495	6.53E-08	2YrCancerDerived_Inh	6.53E-08
113	ALL	---	289353.2	4007594	6.55E-08	2YrCancerDerived_Inh	6.55E-08
114	ALL	---	289267.8	4007577	7.96E-08	2YrCancerDerived_Inh	7.96E-08
115	ALL	---	289339	4007637	6.61E-08	2YrCancerDerived_Inh	6.61E-08
116	ALL	---	289222.3	4007776	7.06E-08	2YrCancerDerived_Inh	7.06E-08
117	ALL	---	289222.3	4007836	6.52E-08	2YrCancerDerived_Inh	6.52E-08
118	ALL	---	289304.8	4007862	5.86E-08	2YrCancerDerived_Inh	5.86E-08
119	ALL	---	289319.1	4007822	5.99E-08	2YrCancerDerived_Inh	5.99E-08
120	ALL	---	289350.3	4007762	5.99E-08	2YrCancerDerived_Inh	5.99E-08
121	ALL	---	289435.7	4007816	5.03E-08	2YrCancerDerived_Inh	5.03E-08
122	ALL	---	289447.1	4007722	5.15E-08	2YrCancerDerived_Inh	5.15E-08
123	ALL	---	289444.2	4007648	5.32E-08	2YrCancerDerived_Inh	5.32E-08
124	ALL	---	289447.1	4007515	5.54E-08	2YrCancerDerived_Inh	5.54E-08
125	ALL	---	289486.9	4007426	5.48E-08	2YrCancerDerived_Inh	5.48E-08
126	ALL	---	289495.5	4007338	5.94E-08	2YrCancerDerived_Inh	5.94E-08
127	ALL	---	289509.7	4007244	6.63E-08	2YrCancerDerived_Inh	6.63E-08
128	ALL	---	289543.8	4007116	8.62E-08	2YrCancerDerived_Inh	8.62E-08

129	ALL	---	289558.1	4007003	1.26E-07	2YrCancerDerived_Inh	1.26E-07
130	ALL	---	289563.7	4006897	1.75E-07	2YrCancerDerived_Inh	1.75E-07

**HARP - Air Dispersion Modeling and Risk Tool v22118

**2/28/2025

**Exported Risk Results

REC	GRP	NETID	X	Y	SCENARIO	RESP	MAXHI
1	ALL	---	288474	4007131	NonCancerChronicDerived_Inh	0.001397	0.001397
2	ALL	---	288411.4	4007131	NonCancerChronicDerived_Inh	0.0011	0.0011
3	ALL	---	288303.3	4007131	NonCancerChronicDerived_Inh	0.000757	0.000757
4	ALL	---	288229.3	4007131	NonCancerChronicDerived_Inh	0.000602	0.000602
5	ALL	---	288186.6	4007136	NonCancerChronicDerived_Inh	0.000532	0.000532
6	ALL	---	287936.2	4007096	NonCancerChronicDerived_Inh	0.000269	0.000269
7	ALL	---	288437	4007182	NonCancerChronicDerived_Inh	0.001038	0.001038
8	ALL	---	288340.3	4007179	NonCancerChronicDerived_Inh	0.000796	0.000796
9	ALL	---	288249.2	4007182	NonCancerChronicDerived_Inh	0.000615	0.000615
10	ALL	---	288198	4007216	NonCancerChronicDerived_Inh	0.000521	0.000521
11	ALL	---	288289.1	4007216	NonCancerChronicDerived_Inh	0.00065	0.00065
12	ALL	---	288368.7	4007213	NonCancerChronicDerived_Inh	0.000791	0.000791
13	ALL	---	288198	4007279	NonCancerChronicDerived_Inh	0.000477	0.000477
14	ALL	---	288269.1	4007273	NonCancerChronicDerived_Inh	0.00055	0.00055
15	ALL	---	288317.5	4007256	NonCancerChronicDerived_Inh	0.000628	0.000628
16	ALL	---	288411.4	4007287	NonCancerChronicDerived_Inh	0.000622	0.000622
17	ALL	---	288456.9	4007287	NonCancerChronicDerived_Inh	0.000626	0.000626
18	ALL	---	288479.7	4007347	NonCancerChronicDerived_Inh	0.000445	0.000445
19	ALL	---	288411.4	4007347	NonCancerChronicDerived_Inh	0.00047	0.00047
20	ALL	---	288340.3	4007330	NonCancerChronicDerived_Inh	0.000498	0.000498
21	ALL	---	288277.7	4007335	NonCancerChronicDerived_Inh	0.000464	0.000464
22	ALL	---	288235	4007338	NonCancerChronicDerived_Inh	0.00044	0.00044
23	ALL	---	288192.3	4007352	NonCancerChronicDerived_Inh	0.000402	0.000402
24	ALL	---	287941.9	4007352	NonCancerChronicDerived_Inh	0.000281	0.000281
25	ALL	---	287936.2	4007401	NonCancerChronicDerived_Inh	0.000265	0.000265
26	ALL	---	287939.1	4007563	NonCancerChronicDerived_Inh	0.000203	0.000203
27	ALL	---	288021.6	4007503	NonCancerChronicDerived_Inh	0.000242	0.000242
28	ALL	---	288200.8	4007407	NonCancerChronicDerived_Inh	0.000351	0.000351
29	ALL	---	288260.6	4007409	NonCancerChronicDerived_Inh	0.000361	0.000361
30	ALL	---	288343.1	4007421	NonCancerChronicDerived_Inh	0.000352	0.000352
31	ALL	---	288431.3	4007432	NonCancerChronicDerived_Inh	0.000315	0.000315
32	ALL	---	288474	4007438	NonCancerChronicDerived_Inh	0.000288	0.000288
33	ALL	---	288363	4007466	NonCancerChronicDerived_Inh	0.000294	0.000294
34	ALL	---	288297.6	4007469	NonCancerChronicDerived_Inh	0.0003	0.0003
35	ALL	---	288206.5	4007463	NonCancerChronicDerived_Inh	0.0003	0.0003
36	ALL	---	288215.1	4007503	NonCancerChronicDerived_Inh	0.000269	0.000269
37	ALL	---	288257.8	4007503	NonCancerChronicDerived_Inh	0.00027	0.00027
38	ALL	---	288309	4007503	NonCancerChronicDerived_Inh	0.000267	0.000267
39	ALL	---	288354.5	4007503	NonCancerChronicDerived_Inh	0.000258	0.000258
40	ALL	---	288400	4007509	NonCancerChronicDerived_Inh	0.00024	0.00024

41	ALL	---	288468.3	4007495	NonCancerChronicDerived_Inh	0.000229	0.000229
42	ALL	---	288419.9	4007557	NonCancerChronicDerived_Inh	0.000195	0.000195
43	ALL	---	288422.8	4007609	NonCancerChronicDerived_Inh	0.000162	0.000162
44	ALL	---	288482.5	4007529	NonCancerChronicDerived_Inh	0.000196	0.000196
45	ALL	---	288522.4	4007529	NonCancerChronicDerived_Inh	0.000183	0.000183
46	ALL	---	288604.9	4007529	NonCancerChronicDerived_Inh	0.000157	0.000157
47	ALL	---	288658.9	4007532	NonCancerChronicDerived_Inh	0.000138	0.000138
48	ALL	---	288707.3	4007535	NonCancerChronicDerived_Inh	0.000124	0.000124
49	ALL	---	288778.4	4007535	NonCancerChronicDerived_Inh	0.000108	0.000108
50	ALL	---	288775.6	4007603	NonCancerChronicDerived_Inh	9.06E-05	9.06E-05
51	ALL	---	288730.1	4007609	NonCancerChronicDerived_Inh	9.59E-05	9.59E-05
52	ALL	---	288650.4	4007609	NonCancerChronicDerived_Inh	0.000111	0.000111
53	ALL	---	288573.6	4007611	NonCancerChronicDerived_Inh	0.000128	0.000128
54	ALL	---	288482.5	4007614	NonCancerChronicDerived_Inh	0.000147	0.000147
55	ALL	---	288445.5	4007657	NonCancerChronicDerived_Inh	0.000136	0.000136
56	ALL	---	288417.1	4007697	NonCancerChronicDerived_Inh	0.000126	0.000126
57	ALL	---	288371.6	4007711	NonCancerChronicDerived_Inh	0.000128	0.000128
58	ALL	---	288257.8	4007725	NonCancerChronicDerived_Inh	0.000141	0.000141
59	ALL	---	288166.7	4007825	NonCancerChronicDerived_Inh	0.00012	0.00012
60	ALL	---	288289.1	4007805	NonCancerChronicDerived_Inh	0.00011	0.00011
61	ALL	---	288365.9	4007887	NonCancerChronicDerived_Inh	8.38E-05	8.38E-05
62	ALL	---	288411.4	4007808	NonCancerChronicDerived_Inh	9.55E-05	9.55E-05
63	ALL	---	288451.2	4007748	NonCancerChronicDerived_Inh	0.000106	0.000106
64	ALL	---	288456.9	4007819	NonCancerChronicDerived_Inh	8.86E-05	8.86E-05
65	ALL	---	288485.4	4007896	NonCancerChronicDerived_Inh	7.27E-05	7.27E-05
66	ALL	---	288539.4	4007791	NonCancerChronicDerived_Inh	8.50E-05	8.50E-05
67	ALL	---	288587.8	4007802	NonCancerChronicDerived_Inh	7.70E-05	7.70E-05
68	ALL	---	288641.9	4007845	NonCancerChronicDerived_Inh	6.46E-05	6.46E-05
69	ALL	---	288698.8	4007907	NonCancerChronicDerived_Inh	5.28E-05	5.28E-05
70	ALL	---	288530.9	4007734	NonCancerChronicDerived_Inh	9.85E-05	9.85E-05
71	ALL	---	288553.7	4007663	NonCancerChronicDerived_Inh	0.000114	0.000114
72	ALL	---	288582.1	4007714	NonCancerChronicDerived_Inh	9.56E-05	9.56E-05
73	ALL	---	288616.3	4007765	NonCancerChronicDerived_Inh	7.99E-05	7.99E-05
74	ALL	---	288616.3	4007694	NonCancerChronicDerived_Inh	9.47E-05	9.47E-05
75	ALL	---	288650.4	4007680	NonCancerChronicDerived_Inh	9.21E-05	9.21E-05
76	ALL	---	288650.4	4007739	NonCancerChronicDerived_Inh	7.98E-05	7.98E-05
77	ALL	---	288695.9	4007822	NonCancerChronicDerived_Inh	6.23E-05	6.23E-05
78	ALL	---	288695.9	4007734	NonCancerChronicDerived_Inh	7.49E-05	7.49E-05
79	ALL	---	288727.2	4007683	NonCancerChronicDerived_Inh	8.02E-05	8.02E-05
80	ALL	---	288747.1	4007776	NonCancerChronicDerived_Inh	6.34E-05	6.34E-05
81	ALL	---	288772.8	4007850	NonCancerChronicDerived_Inh	5.34E-05	5.34E-05
82	ALL	---	288778.4	4007794	NonCancerChronicDerived_Inh	5.91E-05	5.91E-05
83	ALL	---	288781.3	4007725	NonCancerChronicDerived_Inh	6.76E-05	6.76E-05
84	ALL	---	288778.4	4007660	NonCancerChronicDerived_Inh	7.85E-05	7.85E-05

85	ALL	---	287904.9	4006658	NonCancerChronicDerived_Inh	8.51E-05	8.51E-05
86	ALL	---	288075.7	4006485	NonCancerChronicDerived_Inh	5.45E-05	5.45E-05
87	ALL	---	288007.4	4006032	NonCancerChronicDerived_Inh	1.88E-05	1.88E-05
88	ALL	---	287981.8	4005961	NonCancerChronicDerived_Inh	1.63E-05	1.63E-05
89	ALL	---	289142.6	4006681	NonCancerChronicDerived_Inh	0.000653	0.000653
90	ALL	---	289239.4	4006664	NonCancerChronicDerived_Inh	0.000457	0.000457
91	ALL	---	289139.8	4006800	NonCancerChronicDerived_Inh	0.00051	0.00051
92	ALL	---	289250.8	4006849	NonCancerChronicDerived_Inh	0.000276	0.000276
93	ALL	---	289122.7	4006923	NonCancerChronicDerived_Inh	0.000351	0.000351
94	ALL	---	289313.4	4006542	NonCancerChronicDerived_Inh	0.000403	0.000403
95	ALL	---	289310.5	4006351	NonCancerChronicDerived_Inh	0.000398	0.000398
96	ALL	---	289199.5	4006317	NonCancerChronicDerived_Inh	0.000424	0.000424
97	ALL	---	289350.3	4006234	NonCancerChronicDerived_Inh	0.000327	0.000327
98	ALL	---	289296.3	4006106	NonCancerChronicDerived_Inh	0.000249	0.000249
99	ALL	---	289469.9	4006482	NonCancerChronicDerived_Inh	0.000271	0.000271
100	ALL	---	289441.4	4006752	NonCancerChronicDerived_Inh	0.000199	0.000199
101	ALL	---	289373.1	4006920	NonCancerChronicDerived_Inh	0.00015	0.00015
102	ALL	---	289395.9	4006977	NonCancerChronicDerived_Inh	0.000115	0.000115
103	ALL	---	289464.2	4006991	NonCancerChronicDerived_Inh	9.29E-05	9.29E-05
104	ALL	---	289455.6	4007037	NonCancerChronicDerived_Inh	7.95E-05	7.95E-05
105	ALL	---	289464.2	4007082	NonCancerChronicDerived_Inh	6.55E-05	6.55E-05
106	ALL	---	289432.9	4007125	NonCancerChronicDerived_Inh	5.95E-05	5.95E-05
107	ALL	---	289432.9	4007165	NonCancerChronicDerived_Inh	5.25E-05	5.25E-05
108	ALL	---	289404.4	4007222	NonCancerChronicDerived_Inh	4.84E-05	4.84E-05
109	ALL	---	289316.2	4007236	NonCancerChronicDerived_Inh	5.66E-05	5.66E-05
110	ALL	---	289401.6	4007352	NonCancerChronicDerived_Inh	4.05E-05	4.05E-05
111	ALL	---	289225.2	4007409	NonCancerChronicDerived_Inh	5.75E-05	5.75E-05
112	ALL	---	289373.1	4007495	NonCancerChronicDerived_Inh	3.82E-05	3.82E-05
113	ALL	---	289353.2	4007594	NonCancerChronicDerived_Inh	3.83E-05	3.83E-05
114	ALL	---	289267.8	4007577	NonCancerChronicDerived_Inh	4.66E-05	4.66E-05
115	ALL	---	289339	4007637	NonCancerChronicDerived_Inh	3.86E-05	3.86E-05
116	ALL	---	289222.3	4007776	NonCancerChronicDerived_Inh	4.13E-05	4.13E-05
117	ALL	---	289222.3	4007836	NonCancerChronicDerived_Inh	3.81E-05	3.81E-05
118	ALL	---	289304.8	4007862	NonCancerChronicDerived_Inh	3.43E-05	3.43E-05
119	ALL	---	289319.1	4007822	NonCancerChronicDerived_Inh	3.50E-05	3.50E-05
120	ALL	---	289350.3	4007762	NonCancerChronicDerived_Inh	3.50E-05	3.50E-05
121	ALL	---	289435.7	4007816	NonCancerChronicDerived_Inh	2.94E-05	2.94E-05
122	ALL	---	289447.1	4007722	NonCancerChronicDerived_Inh	3.01E-05	3.01E-05
123	ALL	---	289444.2	4007648	NonCancerChronicDerived_Inh	3.11E-05	3.11E-05
124	ALL	---	289447.1	4007515	NonCancerChronicDerived_Inh	3.24E-05	3.24E-05
125	ALL	---	289486.9	4007426	NonCancerChronicDerived_Inh	3.20E-05	3.20E-05
126	ALL	---	289495.5	4007338	NonCancerChronicDerived_Inh	3.47E-05	3.47E-05
127	ALL	---	289509.7	4007244	NonCancerChronicDerived_Inh	3.88E-05	3.88E-05
128	ALL	---	289543.8	4007116	NonCancerChronicDerived_Inh	5.04E-05	5.04E-05

129	ALL	---	289558.1	4007003	NonCancerChronicDerived_Inh	7.34E-05	7.34E-05
130	ALL	---	289563.7	4006897	NonCancerChronicDerived_Inh	0.000103	0.000103

HARP Project Summary Report 2/28/2025 12:18:15 PM

PROJECT INFORMATION
HARP Version: 22118
Project Name: FERNANDES SUBDIVISION
Project Output Directory: C:\HARP2\Projects\FERNANDES SUBDIVISION
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:1
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	
Multi	Annual Ems	MaxHr Ems	MWAF		
	(lbs/yr)	(lbs/hr)			
AREA1	0	0	9901	DieselExhPM	1
	22	0	1		

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH22013
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	
InhChronicREL	OralChronicREL	InhChronic8HRREL			
9901	DieselExhPM	1.1			5

AIR DISPERSION MODELING INFORMATION
Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

LIST OF AIR DISPERSION FILES
AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list
_____

LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)
_____
AREA1CancerRisk.csv
AREA1CancerRiskSumByRec.csv
AREA1GLCList.csv
AREA1HRAInput.hra
AREA1NCAcuteRisk.csv
AREA1NCAcuteRiskSumByRec.csv
AREA1NCChronicRisk.csv
AREA1NCChronicRiskSumByRec.csv
AREA1Output.txt
AREA1PathwayRec.csv
AREA1PolDB.csv

Spatial averaging files (\sa\)
_____

Appendix C

Biological Habitat Assessment

1401 Fulton Street, Suite 918 Fresno, CA 93721
www.soarhere.com • 559.547.8884

Biological Habitat Assessment

Fernandes Subdivision Development Project

Assessor Parcel Number 174-030-008

Paige Avenue between S. Pratt Street and S. I Street in the City of Tulare



Prepared for
4Creeks, Inc.
324 S. Santa Fe Street, Suite A
Visalia, CA 93292

Prepared by

1322 East Shaw Avenue, Suite 400
Fresno, CA 93710

February 7, 2025

Executive Summary

Soar Environmental Consulting Inc. (Soar Environmental) was retained by 4Creeks, Inc. (Client) to conduct a literature review and reconnaissance-level survey for the proposed Fernandes Subdivision. The Projectis located on Paige Avenue between S. Pratt Street and S. I Street in the City of Tulare, USGS 7.5 Minute Quad: Tulare, SW Corner Section 15 Township 20S, Range 24E (Project). The survey identified vegetation communities and the potential for the occurrence of special-status species or habitats that could support special-status wildlife species, and recorded all plants and animals observed or detected within the Project boundary. This Habitat Assessment is designed to address potential effects of the proposed Projecton any species currently listed or formally proposed for listing as endangered or threatened under the Federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA) or species designated as sensitive by the California Department of Fish and Wildlife (CDFW) or the California Native Plant Society (CNPS). The information in this document is in accordance with accepted scientific and technical standards and is consistent with the requirements of the United States Fish and Wildlife Service (USFWS) and CDFW. Additionally, the site was surveyed for drainage features that would meet the definition of the Waters of the U.S. (WOUS), Waters of the State (WOS), or CDFW jurisdiction.

This Habitat Assessment was conducted in accordance with CEQA guidelines §15060. The objectives of the assessment are to 1) provide a general characterization of biological resources for the property; 2) inventory plant and wildlife species; 3) evaluate the potential for federally listed plant and animal species to occur or be adversely affected; and 4) describe the property's sensitive biological resources.

This Habitat Assessment provides information about the biological resources within the Project area. Prior to field activities, Soar Environmental researched the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California, to compile a list of special-status species that could potentially be present in the vicinity of the Project area. Soar Environmental researched specific species and habitat requirements for the species noted in the CNDDB, IPaC, and CNPS databases and included species listing status and proximal species observations in this report.

Based on documented occurrences of special-status species from the data record search and Literature Review section of this report, it was determined there may be low potential for Swainson's hawk (*Buteo swainsoni*) and San Joaquin kit fox (*Vulpes macrotis mutica*) to occur within the vicinity of the Project area. No other listed species were found to have potential to occur, and none of the identified special-status plant or wildlife species were observed in the Project area during the Habitat Assessment survey conducted on January 27, 2025. Based on the findings of this assessment, the proposed development of this property is unlikely to adversely affect any of the listed species identified in this report. Ground-disturbing activities are expected to commence outside of the nesting bird breeding season (February 1 and September 15). Therefore, no impact on nesting bird species will result from project-related activities. If vegetation and ground disturbance should occur during the active nesting season (February to September), avoidance and minimization measures for nesting birds and raptors should be implemented.

Contents

Executive Summary 1
1. Introduction 4
1.1 Regulatory Background 5
1.1.1 Federal Endangered Species Act 5
1.1.2 California Endangered Species Act 5
1.1.3 California Environmental Quality Act (CEQA) 5
1.1.4 Migratory Bird Treaty Act 6
1.2 Project Location 6
2. Project Description 7
2.1 Existing Conditions 8
Wetland Habitats 8
3. Methods 9
3.1 Literature Review 9
3.2 Field Reconnaissance Methodology 9
4. Habitat Assessment Results 10
5. Special-Status Species 13
5.1 Special-Status Wildlife Species Descriptions 18
Bird Species 18
Mammal Species 19
5.2 Special-Status Plant Species 19
6. Findings 19
Project Impacts 20
7. Conclusion 20
8. Recommendations 21
9. Study Limitations 21
Literature Cited 22

Figures

Figure 1. Project Location 6
Figure 2. Site Plan 7

Figure 3. Project Site Map 10
Figure 4. Map of CNDDB Occurrences 17

Tables

Table 1. Wildlife Species Observed in the Project Area 11
Table 2. Plant Species Observed in the Project Area 12
Table 3. Potentially Occurring Listed Wildlife Species 14
Table 4. Regionally Occurring Special-Status Plant Species 16

Appendices

APPENDIX A: Project Site Photographs 23
APPENDIX B: United States Fish and Wildlife Service IPaC Resource List 47
APPENDIX C: California Department of Fish and Wildlife RareFind 48
APPENDIX D: California Native Plant Society Rare Plant Inventory 49
APPENDIX E: United States Fish and Wildlife Service: National Wetland Inventory Map 50
APPENDIX F: Project Site Plan 51

1. Introduction

The proposed Project is the development of a 120-lot subdivision on a 19.58-acre property located at 122 West Paige Avenue in the City of Tulare, California, Assessor Parcel Number (APN) 174-030-008. The Project includes a zone change to R-1-4, allowing for smaller residential lots that provide more affordable homeownership opportunities. Soar Environmental Consulting Inc. (Soar Environmental) has been tasked to prepare technical studies to support the California Environmental Quality Act (CEQA) compliance on behalf of the City of Tulare, Tulare County, CA.

The Project area consists entirely of disturbed, agricultural, and ruderal habitat types. The property contains a contiguous immature pistachio orchard interspersed with disturbed bare ground and non-native weeds and grasses, subjected to mowing and herbicide application. A single-family residence and barn exist on the southeast corner of the property. Most vegetation is non-native and ruderal weeds, with some ornamental plants and trees associated with the single-family residence. Compacted farm roads surround the site except for the southern boundary, bordered by the paved Paige Avenue and Tulare Irrigation Canal on the opposite side of the roadway. A large, non-native grassland also occurs south of the canal on the opposite side of the roadway and will not be impacted by the project. The Projectis surrounded by contiguous agricultural orchards on all other sides.

This Habitat Assessment presents the findings of our Literature Review (**Section 3.1**) based on the California Department of Fish and Wildlife (CDFW) Natural Diversity Data Base (CNDDB), the California Native Plant Society (CNPS) online electronic inventory of rare and endangered California plants, the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) for reported occurrences of special-status vegetation communities, plants, and animals.

Based on the proximity of documented occurrences of special-status species from the Literature Review and Habitat Assessment, the following special-status species were identified as having low potential to occur in the vicinity of the Project area and were considered for further analysis:

Potentially Occurring Special-Status Wildlife Species

Species with Low Potential for Occurrence:

1) Swainson's hawk (*Buteo swainsoni*)
2) San Joaquin kit fox (*Vulpes macrotis mutica*)

****Tables 3 & 4** provide a complete list of special-status species considered in this report's analysis.*

A qualified biologist from Soar Environmental conducted a habitat assessment on January 27, 2025. During the assessment, no special-status plant or wildlife species were observed in the Project area, and no suitable habitat features conducive to any identified listed species were observed within the Project site. Based on the findings of the Habitat Assessment, the proposed development of this Project is not likely to adversely affect any of the special-status species identified in the Literature Review section of this report.

1.1 Regulatory Background

1.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (ESA) prohibits the "take" of federally listed endangered or threatened wildlife species. "Take" is defined to include harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). Actions that result in take can result in civil or criminal penalties. The federal ESA and Section 404 guidelines prohibit the issuance of wetland permits for projects that would jeopardize the existence of threatened or endangered species. The US Army Corps of Engineers (ACOE or Corps) must consult with the U.S. Fish and Wildlife Service (USFWS) and possibly the National Marine Fisheries Service (NMFS) when threatened or endangered species may be affected by the proposed project to determine whether issuance of a Section 404 permit would jeopardize the continued existence species. In the context of the project site, the federal ESA would be triggered if development resulted in the take of a threatened or endangered species or if the issuance of a Section 404 permit or other federal agency action could adversely affect or jeopardize a threatened or endangered species.

1.1.2 California Endangered Species Act

The state ESA is similar to the federal ESA but pertains to state-listed endangered and threatened species. It required state agencies to consult with the California Department of Fish and Game when preparing California Environmental Quality Act (CEQA) documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. It directs agencies to consult with DFG on projects or actions that could affect listed species, directs DFG to determine whether jeopardy would occur, and allows DFG to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that there are "overriding considerations"; the agencies are prohibited from approving projects that would result in the extinction of a listed species. The state ESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. DFG exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. DFG may authorize "take" if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. DFG required preparation of mitigation plans in accordance with published guidelines.

1.1.3 California Environmental Quality Act (CEQA)

CEQA applies to public agencies in California with discretionary authority over project approvals and permits. CEQA requires that the impacts of proposed projects be assessed before the project is approved. projects with significant environmental impacts can only be approved with adequate mitigation or compensation unless a finding of overriding consideration is made. Discretionary approval from public agencies may require avoidance measures or compensatory mitigation. CEQA also provides that less than significant impacts of an individual project can be treated as significant if they contribute to significant cumulative impacts on the environment.

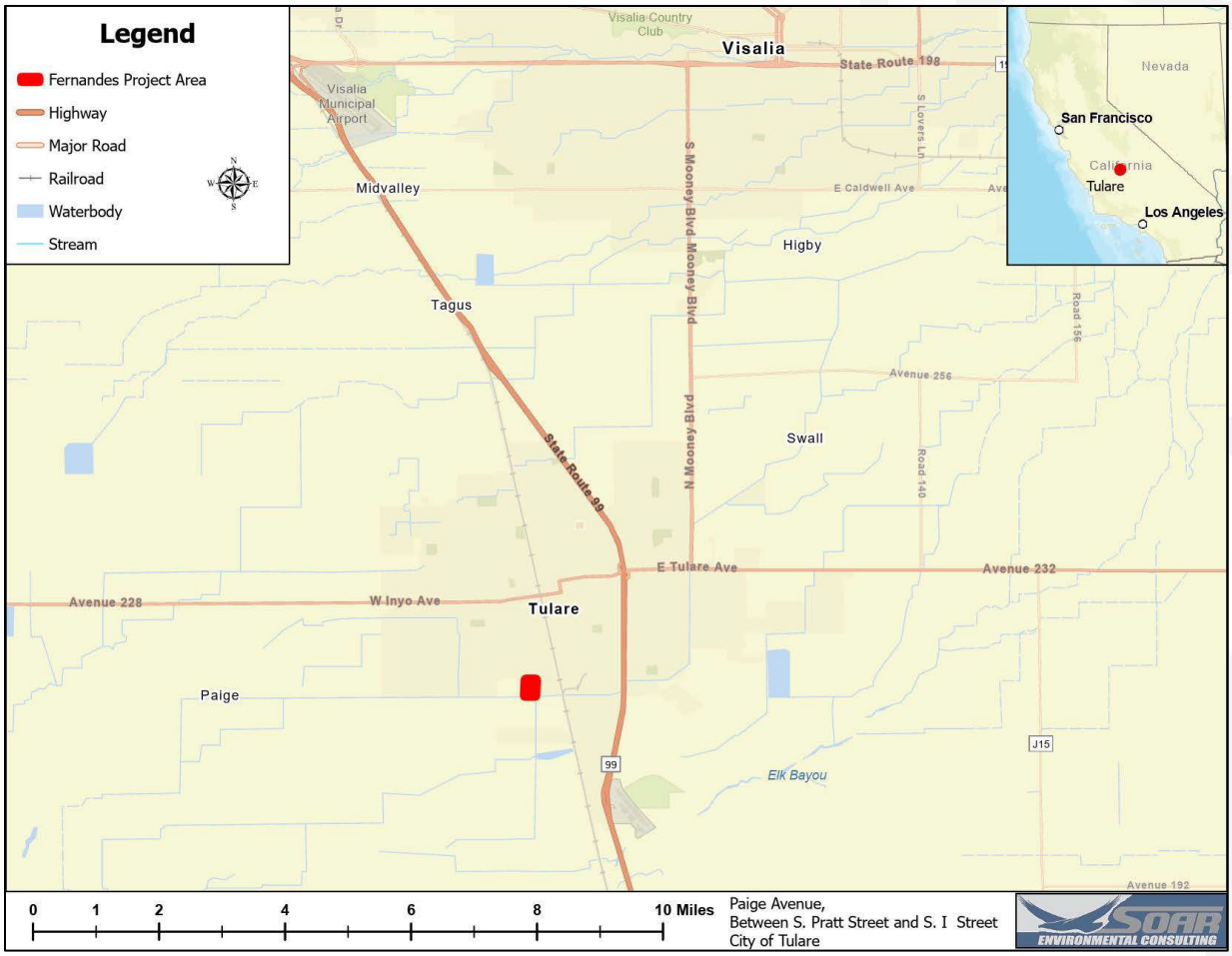
1.1.4 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was first enacted in 1918 and authorized the Secretary of Interior to regulate the "taking" of migratory birds. Specifically, the MBTA states that it shall be unlawful, except as permitted by regulations, to "at any time, by any means, or in any manner, to pursue, take, kill, possess, sale, purchase, ship, transport, carry, or export, at any time, or in any manner, any migratory bird, or any part, nest, or egg of any such bird" (16 USC 703). The current list of species protected by the MBTA is located in Title 50, CFR Section 10.13.

1.2 Project Location

The Project is located on the outskirts of Tulare, California, north of Paige Avenue, between S. Pratt Street and S. I Street. It is comprised of Assessor Parcel Number (APN) 174-030-008, at an elevation of approximately 258 feet. The Project area is on the southwestern side of the city, approximately one mile (1.1 mi) west of California State Route (SR) 99. The Project area is in the U.S.G.S. 7.5 Minute Quad: *Tulare*, SW Corner Section 15, Township 20S, Range 24E.

Figure 1. Project Location



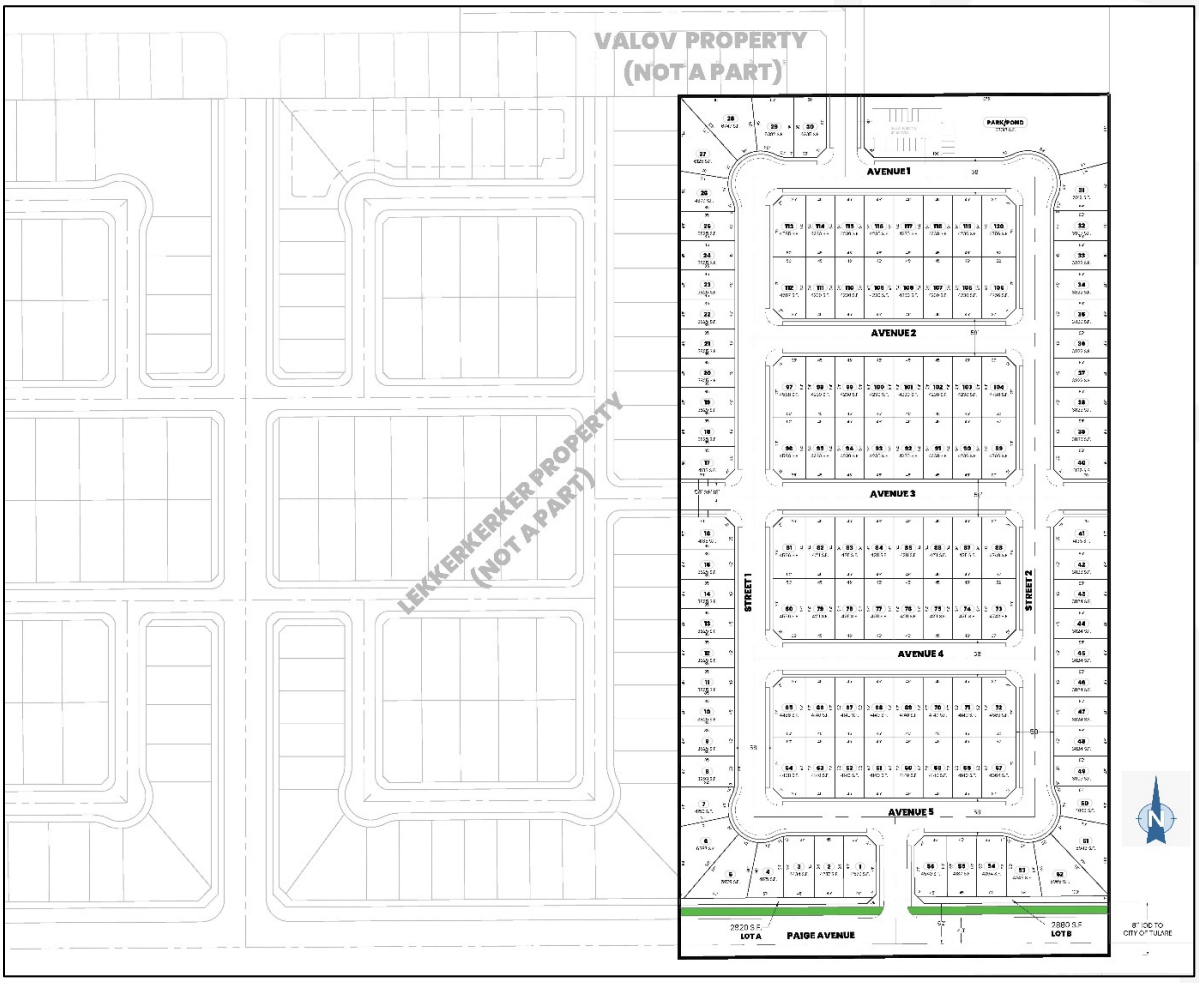
122 West Paige Avenue, between S. Pratt Street and S. I Street in Tulare, California Assessor Parcel Number (APN) 174-030-008.

2. Project Description

The Project proposes the development of a 120-lot subdivision in the City of Tulare, with average lot sizes of 3,825 square feet. The Project site is a 19.58-acre agricultural orchard consisting of Assessor Parcel Number (APN) 174-030-008. The Project includes a zone change to R-1-4, allowing for smaller residential lots that provide more affordable homeownership opportunities. The Project also proposes development of a 37,017 square foot park or pond, and a 24-space guest parking lot on the northeast corner of the Project site.

The proposed Project would be integrated with two other neighboring development projects (Leckerkerker and Valov subdivisions). The Project includes a Class I mixed-use trail along Paige Avenue designed to enhance multimodal connectivity for pedestrians and cyclists, promoting active transportation and reducing vehicle reliance. The trail will connect to planned infrastructure, providing future residents with improved access to citywide transportation networks and community amenities. The project's design aims to contribute to the city's long-term goals of creating vibrant, inclusive communities. Project activities will be limited to the property boundary. Upon completion, the development site will be bordered by decorative landscaping.

Figure 2. Site Plan



A detailed site plan is shown in Appendix F.

2.1 Existing Conditions

The Project area is a 19.58-acre rectangular-shaped, active pistachio orchard located on the city's southern edge, at an elevation of approximately 258 feet above mean sea level (AMSL). Ground cover on the property is mostly bare ground, with ruderal weeds and grasses dominating the edges of the property and center rows within the orchard. The entire Project site is a highly maintained orchard of immature pistachio trees with a single-family residence and barn on (Approximately 1.2ac) the southeast corner of the property. An existing housing subdivision occurs to the northwest of the project, and a large industrial building to the southeast. The Project site is bound by Paige Avenue, overhead utility lines, and the Tulare irrigation canal to the south. Orchards surround the rest of the Project site with a more mature pistachio orchard to the west, almonds to the north, and immature pistachios continuing to the east. There is an undeveloped non-native grassland south of the Project is separated from the Project site by the Tulare Irrigation Canal and Paige Avenue. The overhead utility lines along Paige Avenue could also provide potential nest sites within the Project area. Due to the site's active farming practices and routine maintenance, the Project site was void of any small mammal burrows or potential den sites that could support San Joaquin kit fox (*Vulpes macrotis mutica*). The site was maintained with squirrel bait traps distributed approximately every fifty yards throughout the orchard, presumably targeting California ground squirrels (*Otospermophilus beecheyi*).

Vegetation within the site was limited to ruderal nonnative weeds subjected to mowing and herbicide application. The weeds were confined to the center of the orchard rows, which were predominantly bare ground along the trees and drip line irrigation system from herbicide application. Ruderal weeds within the rows were fairly monotypic, consisting mainly of Cheeseweed (*Malva parviflora*), Orchard grass (*Dactylis glomerata*), Chicory (*Cichorium intybus*), red-stem, fillary (*Erodium cicutarium*), pineapple weed (*Matricaria discoidea*), horseweed (*Erigeron canadensis*), and shepherd's purse (*Capsella bursa-pastoris*). Ornamental trees and shrubs also surround the single-family residence at the southeast corner of the Project site.

Wetland Habitats

According to the National Wetland Inventory, a riverine habitat (R4SBCx), the Tulare Irrigation Canal runs adjacent to the property's southern boundary on the opposite side of Paige Avenue (**Appendix E**). This canal appears to be part of a matrix of the Bates Slough watershed and is connected to various tributaries within the watershed, including Bates Slough, and is controlled and maintained by the Tulare County Irrigation District. During the Habitat Assessment field survey, this drainage was completely dry and sparsely covered with ruderal weeds and trash. During the site visit, it was noted that the natural habitat around this canal was mostly disturbed, with dirt roads running along both sides of the canal. The canal runs parallel with Paige Avenue on the opposite side of the Project site and will not be impacted by the Project. (**Photo 33 & 45)**.

3. Methods

3.1 Literature Review

Before performing the Habitat Assessment, Soar Environmental searched for threatened or endangered species that could occur near the Project area. The records search included a review of the California Natural Diversity Database (CNDDB), the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), and the California Native Plant Society (CNPS) Online Rare Plant Inventory. The area covered by the data records search included the USGS 7.5-minute quadrangles of *Tulare, Cairn's Corner, Exeter, Goshen, Taylor Weir, Tipton, Paige, Visalia, and Woodville.* These sources generated a list of special-status plant and animal species. Proximal locations of special-status plant and animal species located within 5 miles of the Project Site are shown in (**Figure 4**).

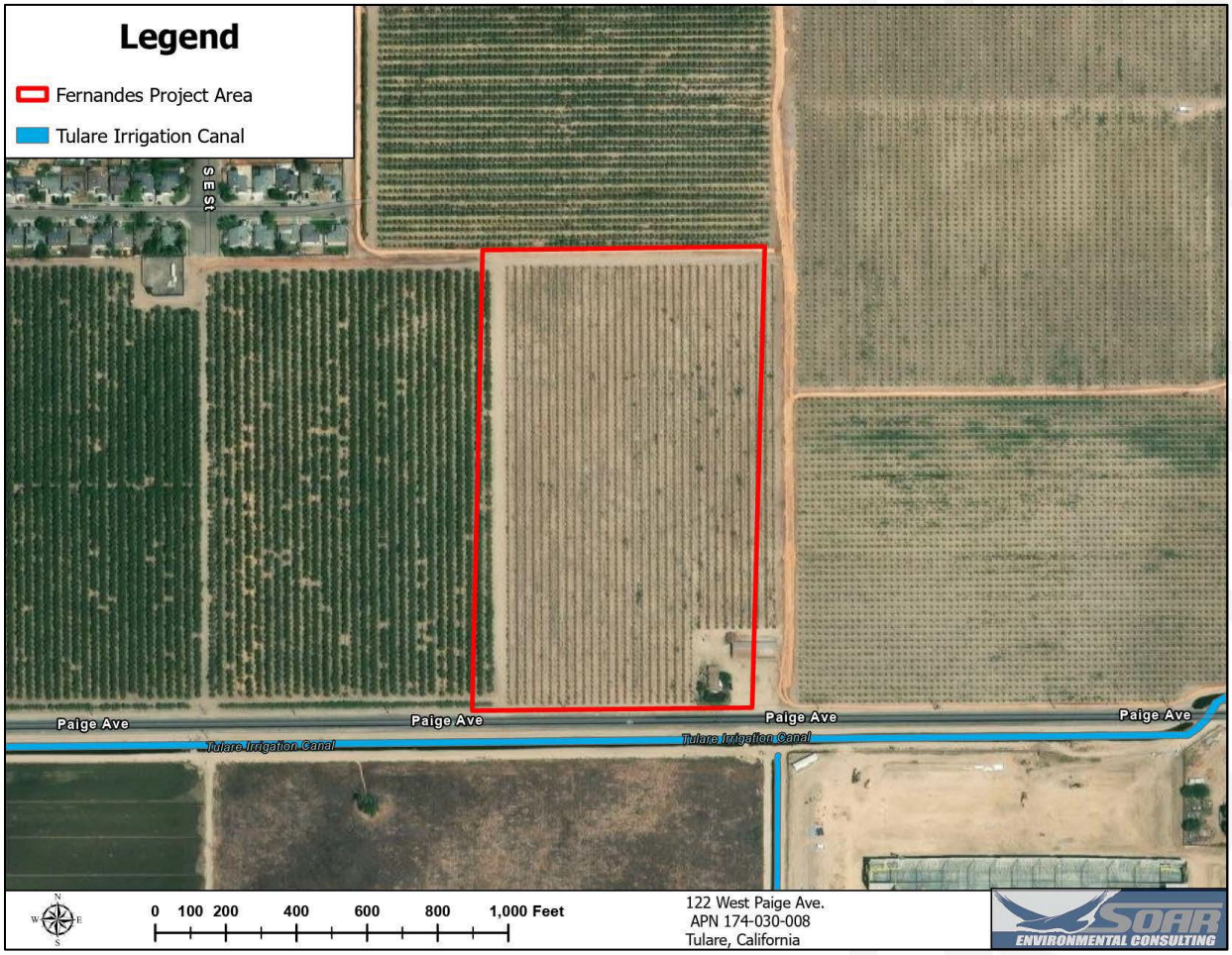
An analysis of special-status species from CNDDB records identified two State and/or federally listed wildlife species that historically occurred near the Project area: Swainson's hawk and San Joaquin kit fox. These two wildlife species were considered for further analysis. The CNPS Online Rare Plant Inventory identified two regionally occurring special-status plant species historically occurring near the Project area. However, an analysis of habitat and existing conditions determined that all special-status plant species identified are absent from or unlikely to occur within the Project area due to long-term ongoing disturbance from active agriculture and/or the absence of suitable habitat within the Project area and were excluded from further analysis (**Section 5**).

3.2 Field Reconnaissance Methodology

The Habitat Assessment is a diurnal, non-protocol survey. The purpose of the Habitat Assessment Survey was to search for the presence or suitable habitat for special-status species that have historically been known to occur in the area. The Habitat Assessment site visit includes observing and noting the plant and wildlife species occurring on and around the Project site, habitat suitability for the species named in the Literature Review, present environmental conditions, and habitat, including microhabitat (only observable from the ground level).

The Habitat Assessment was conducted on January 27, 2025, by Soar Environmental biologist Lucas Knox to assess the habitat quality for species listed in **Section 5**. Survey efforts emphasized the search for suitable habitats or the presence of special-status species that had documented occurrences in the data records search of the CNDDB, IPaC, and CNPS databases. The site visit involves walking the property's perimeter and meandering transects throughout the Project area. During the site visit, the surveyor identified vegetation and searched for bird nests, possible small mammal dens, vernal pools, and other signs of wildlife occupancy or associated suitable habitat features. The biologist also surveyed the surrounding area by vehicle where accessible within 0.5 miles of the Project Site to look for biological resources and features that may be suitable habitats for the identified special-status species. During the surveys, the biologist collected photos of the Project boundaries and other points of interest depicting the habitat and potential biological resources (**Appendix A**).

Figure 3. Project Site Map



Project area: 19.58 acres

4. Habitat Assessment Results

During the site visit, no special-status plants or wildlife species were observed. Wildlife and plant species observed on or near the property are listed in **Tables 1 & 2**. The entire Project site is a maintained orchard of immature pistachio trees with a single-family residence and barn on the southeast corner of the property. Orchards surrounding the Project site are separated by disturbed, bare ground and compacted farm roads, and the eastern farm road is lined with discarded pistachio hulls. An existing housing subdivision occurs to the northwest of the project, and a large industrial building is to the southeast, south of Paige Avenue. The Tulare irrigation canal and overhead utility lines border the southern boundary of the Project site. A considerably large lot of undeveloped non-native grassland to the south is separated from the Project by the Tulare Irrigation Canal and Paige Avenue. One potential nest tree (*Eucalyptus Sp.)* within the grassland southeast of the Project could provide a potential nesting and foraging site for raptors or Swainson's hawk (*Buteo swainsoni*) within proximity of the project. Although no raptor nest was observed, one red-tailed hawk (*Buteo jamaicensis*) was observed perching on this tree during the site visit. During the site visit, a homeless encampment was present at the base of

the tree, which would likely deter raptors from establishing a nest at this location. The overhead utility lines along Paige Avenue could also provide potential nest sites. No existing stick nests were present at these features during the survey. At the time of the site visit, the pistachio trees were dormant, providing one hundred percent visual coverage of the trees. One inactive passerine nest, likely a mourning dove (*Zanaida macroura*), was observed in the fork of one of the trees**,** and another nest was found on the ground at the base of a tree that was likely blown down by wind (**Photo 43**).

During the site visit, seventeen common bird species and seventeen common plant species were observed within and adjacent to the Project site. Powerline poles and large trees in the vicinity were inspected for raptor nests. Due to the site's active farming practices and routine maintenance, the Project site was void of any small mammal burrows or potential den sites that could support San Joaquin kit fox (*Vulpes macrotis mutica*). The site was maintained with squirrel bait traps distributed approximately every fifty yards throughout the orchard (**Photo 29)** presumably targeting California ground squirrels (*Otospermophilus beecheyi*). A few inactive and partially collapsed burrows were beneath some concrete riprap surrounding an irrigation valve adjacent to the northeast corner of the Project site.

Vegetation within the site was limited to ruderal nonnative weeds subjected to mowing and herbicide application. The weeds were confined to the center of the orchard rows, which were predominantly bare ground along the trees and drip line irrigation system from heavy herbicide application. Ruderal weeds within the rows were fairly monotypic, consisting mainly of Cheeseweed (*Malva parviflora*), Orchard grass (*Dactylis glomerata*), Chicory (*Cichorium intybus*), red-stem, fillary (*Erodium cicutarium*), pineapple weed (*Matricaria discoidea*), horseweed (*Erigeron canadensis*), and shepherd's purse (*Capsella bursa-pastoris*). Ornamental trees and shrubs also surround the single-family residence at the southeast corner of the Project site.

The survey was conducted by a qualified biologist outside of the blooming period for most of the sensitive plant species listed in **Table 4** and outside the normal nesting bird season. However, no special-status plant species were seen within or near the Project area, and conditions for these species do not appear conducive due to the loss of a native seed bank from implementation of long-term agricultural practices.

No special-status wildlife or plant species were present during the site visit. Due to the heavily disturbed site, routine farming practices, and maintenance, the Project site would not impact special-status wildlife or plant species due to the lack of suitable habitat. Wildlife and plant species observed on or near the property are listed below in **Tables 1 & 2**.

Table 1. Wildlife Species Observed in the Project Area

Common/ Scientific Name	Listing Status	Common/ Scientific Name	Listing Status
American Crow (*Corvus brachyrhynchos*)	MBTA	Killdeer (*Charadrius vociferus*)	MBTA
American Pipit (*Anthus rubescens*)	MBTA	Lesser Goldfinch (*Spinus psaltria*)	MBTA
Black Phoebe (*Sayornis nigricans*)	MBTA	Mourning Dove (*Zenaida macroura*)	MBTA
California Scrub Jay (*Aphelocoma californica*)	MBTA	Northern Flicker (*Colaptes auratus*)	MBTA

Eurasian Collared Dove (*Streptopelia decaocto*)	None
European Starling (*Sturnus vulgaris*)	None
Horned Lark (*Eremophila alpestris*)	MBTA
House Finch (*Haemorhous mexicanus*)	MBTA
House Sparrow (*Passer domesticus*)	None
Red-Tailed Hawk (*Buteo jamaicensis*)	MBTA
Rock Pigeon (*Columba livia*)	None
Savanah Sparrow (*Passerculus sandwichensis*)	MBTA
Western Meadowlark (*Sturnella neglecta*)	MBTA

Table 2. Plant Species Observed in the Project Area

Common / Scientific Name	Listing Status
Agave (*Agave*)	None
Almond (*Prunus amygdalus*)	None
Bermuda Grass (*Cynodon dactylon*)	None
Canadian Horseweed (*Erigeron canadensis*)	None
Cheeseweed (*Malva parviflora*)	None
Chickweed (*Stellaria media*)	None
Chicory (*Cichorium intybus*)	None
Fan Palms (*Washingtonia*)	None
Orchard Grass (*Dactylis glomerata*)	None
Pineapple weed (*Matricaria discoidea*)	None
Pistachio (*Pistacia vera*)	None
Prickly Lettuce (*Lactuca serriola*)	None
Redstem Filaree (*Erodium cicutarium*)	None
Roses (*Rosa rubiginosa*)	None
Salt Grass (*Distichlis spicata*)	None
Shepherd'S Purse (*Capsella bursa-pastoris*)	None
St. John'S Wort (*Hypericum perforatum*)	None

5. Special-Status Species

Special-status plants and animals that have a reasonable possibility to occur in the Project area are based on habitat suitability and requirements, elevation and geographic range, soils, topography, surrounding land uses, and proximity of known occurrences in the CNDDB, IPaC, and CNPS databases. Based on these criteria and database results, the species with potential to occur in the Project area are listed in **Tables 3** & **4**. The likelihood of the occurrence of special-status species was assessed using information from the various listed sources in **Section 3.1,** Literature Review, and Habitat Assessment. Narratives are provided for species with land use planning and regulatory implications.

Results from the data records search identified 14 special-status species: 12 wildlife and 2 plant species. However, an analysis of recent occurrences, habitat suitability, and proximity within 5 miles of the Project site indicated 2 special-status species with low potential for occurrence. Special-status species for which there are no regulatory implications (i.e., lack of suitable habitat or no record of historical occurrences within 5 miles) are excluded from further analysis.

Species with Low Potential for Occurrence:

1) San Joaquin kit fox (*Vulpes macrotis mutica*)
2) Swainson's hawk (*Buteo swainsoni*)

Special-status species and sensitive habitats include plant and wildlife taxa, or other unique biological features afforded special protection by local land use policies and/or state and federal regulations. Special-status plant and wildlife species are those listed as rare, threatened, or endangered under the state or federal Endangered Species Acts. Vegetation communities may warrant special status if they are of limited distribution, have high wildlife value, or are particularly vulnerable to disturbance. Listed and special-status species are defined as:

- Listed or proposed for listing under the state or Federal Endangered Species acts.
- Protected under other regulations (e.g., Migratory Bird Treaty Act).
- California Department of Fish & Wildlife (CDFW) Species of Special Concern.
- Listed as species of concern by CNPS or USFWS; and
- Receive consideration during environmental review under CEQA.

Below are listed all species from the Section 3.1 search results, including common and non-listed species. The analysis and following determination are based on Habitat Assessment results and the most recent occurrence and proximity to the Project site (**Tables 1 & 2**).

- **Present**: Species known to occur on the site, based on CNDDB records, and/or were observed on the site during the field survey.
- **High**: Species known to occur on or near the site (based on CNDDB record within 5 miles), and/or there is suitable habitat on the site.
- **Low**: Species known to occur on or near the site (based on CNDDB record within 5 miles), but there is no suitable habitat onsite. Or potential habitat occurs onsite, but the species is not known to occur within 5 miles.
- **None**: The species is not known to occur within 5 miles of the site, and there is no suitable habitat on the site. OR—The Species was surveyed during the appropriate season with negative results.

Table 3. Potentially Occurring Listed Wildlife Species

Common/ Scientific Name	Listing Status *Fed/ State/ Other*	Habitat Requirements	Potential for Occurrence
Amphibians			
Western spadefoot *(Spea hammondii)*	FPT/-/SSC	Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	**None**: There is no suitable habitat for this species onsite. Possibly Extirpated (CNDDB).
Birds			
Burrowing owl (*Athene cunicularia*)	-/CCE/SSC	Subterranean nesters depend upon burrowing mammals, most notably the California ground squirrel.	**None**: The species is not known to occur within 5 miles of the site, and there is no suitable habitat on the site
Swainson's hawk (*Buteo swainsoni*)	-/CT/-	Nests in isolated trees or riparian woodlands adjacent to suitable foraging habitat (agricultural fields, grasslands, etc.).	**Low**: The species is not known to occur within 5 miles of the site, and there is limited potential nesting habitat onsite in the form of large valley oak trees.
Tricolored blackbird (*Agelaius tricolor*)	-/CT/SSC	Found in areas near water, such as marshes, grasslands, and wetlands. They require some substrate nearby to build nests.	**None**: Species is not known to occur within 5 miles of the site and there is no suitable habitat on the site.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT/CE/ MBTA	Woodlands near streams or lakes, abandoned farmland, old fruit orchards, successional shrubland, and dense thickets.	**None:** Species known to occur on or near the site (based on CNDDB record within 5 miles), but there is limited fragmented suitable woodland habitat onsite.
Invertebrates			
Crotch's bumblebee (*Bombus crotchii*)	-/CCE/-	Interior dunes, grasslands, and shrublands, with food sources: milkweeds, dusty maidens, lupines, clovers, phacelias, sages, clarkias, poppies, and wild buckwheat.	**None:** Species known to occur on or near the site (based on CNDDB record within 5 miles), but there is no suitable nectar native wildflower field habitat onsite.

Common/ Scientific Name	Listing Status *Fed/ State/ Other*	Habitat Requirements	Potential for Occurrence
Valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*	-/FT/-	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana), in riparian scrub	**None**: There is no suitable habitat for this species onsite. Possibly Extirpated (CNDDB).
Vernal pool fairy shrimp *(Branchinecta lynchi)*	-/FT/-	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in valley foothills grasslands, vernal pools, and wetlands.	**None**: There is no suitable habitat for this species onsite. Possibly Extirpated (CNDDB).
Mammals			
San Joaquin kit fox (*Vulpes macrotis mutica)*	FE/SE/-	Arid flat grasslands, scrublands, and alkali meadows with short vegetation.	**Low:** Species known to occur on or near the site (based on CNDDB record within 5 miles), but there is no suitable habitat onsite.
Tipton kangaroo rat *(Dipodomys nitratoides nitratoides)*	FE/SE/-	Arid and alkaline plains under shrub and grass vegetation, coastal scrub, open stages of chaparral, and desert scrub habitats, and in conifer woodlands.	**None**: There is no suitable habitat for this species onsite. Possibly Extirpated (CNDDB).
Reptiles			
Blunt-nosed leopard lizard *(Gambelia sila)*	FE/SE	Semi-arid grasslands, alkali flats, and washes, utilize shrubs and small mammal burrows.	**None:** Species is not known to occur within 5 miles of the site and there is no suitable habitat on the site.
Western pond turtle *(Actinemys marmorata)*	FPT/-/SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation. Found at elevations below 6,000 feet. Needs basking sites and suitable upland habitat such as sandy banks or grassy open field within 0.5 kilometers from water for egg-laying.	**None:** Species known to occur on or near the site (based on CNDDB record within 5 miles), but there is no suitable pond habitat within the Project area.

*Wildlife Listing Status Notes:

Federal:

FE	Federally listed Endangered
FT	Federally listed Threatened
FCE	Federal Candidate Endangered species
FCT	Federal Candidate Threatened species
FPT	Federal Proposed Threatened
FWL	USFWS Watch list
BCC	USFWS Bird of Conservation Concern
BGEAC	Bald and Golden Eagle Protection Act
MBTA	Migratory Bird Treaty Act

State:

CE	State-listed Endangered
CT	State-listed Threatened
CCE	State Candidate Endangered species
CCT	State Candidate Threatened species
CR	State Rare Species
CA	State Special Animal
FP	CDFW Fully Protected Species
SSC	CDFW Species of Special Concern
CWL	CDFW Watch List

Table 4. Regionally Occurring Special-Status Plant Species

Common/ Scientific Name	Listing Status *Fed/ CA/ CNPS/* Bloom Period	Habitat Description	Habitat Present/ Absent	Rationale
California jewelflower *(Caulanthus californicus)*	FE/CE/1B.1/ Feb-May	Chenopod scrub, pinyon-juniper woodland, valley and foothill grassland	Absent	There is no suitable habitat for this species on site.
San Joaquin adobe sunburst *(Pseudobahia peirsonii)*	FT/CE/1B.1 Feb-Apr	An annual herb found in cismontane woodland, valley and foothill grassland. Adobe or clay microhabitat. Found at elevations between 295 and 2,625 feet.	Absent	There is no suitable habitat for this species on site.

*Rare Plant Listing Status Notes:

Federal:

FE	Federally listed Endangered
FT	Federally listed Threatened
FC	Federal Candidate Species

State:

CE	State Listed Endangered
CT	State-listed Threatened
CC	State Candidate Species
CR	State Rare Species

CRPR: California Native Plant Society Rare Plant Rank

1A	Considered extirpated in CA
1B	Rare, threatened, or endangered in CA and elsewhere
2	Rare, threatened, or endangered in CA but common elsewhere
4	Limited distribution (Watch-list)

CRPR Extensions

0.1	Seriously endangered in California
0.2	Fairly endangered in California
0.3	Not very endangered in California

Figure 4. Map of CNDDB Occurrences



This map shows the closest and most recent special-status species locations from the California Natural Diversity Database (CNDDB).

5.1 Special-Status Wildlife Species Descriptions

This section describes identifiable physical characteristics and habitat requirements for special-status species identified in the Literature Review that may have potential to occur in the vicinity of the Project area. These species were considered for further analysis.

Bird Species

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is listed as Threatened on the State level and is a listed species under the Migratory Bird Treaty Act. However, due to its common distribution throughout the country, it is not listed at the Federal level. This species favors open habitat for foraging such as agricultural fields, pastures, and row crops. They nest in scattered stands of eucalyptus, willow, oak, cottonwood, and conifers. On occasion, Swainson's hawk will nest on a power pole or transmission tower. The location of Swainson's hawk nests is typically on the tallest point in or near an open field, giving this species a full view of its foraging area while nesting.

Due to their late return to California for the breeding season, Swainson's hawk often uses the same nests for serval breeding seasons and even generations. If a nest is constructed, it is often constructed with loose bundles of sticks and debris quickly stacked together. They are also territorial of their nests and will dive bomb any other species attempting to use their nest. Red-tailed hawk and great horned owls, which overlap in habitat, are species known to use Swainson's hawk nests.

The incubation period for Swainson's hawk is approximately 35 days, and the nesting period is 17 to 22 days. The breeding season for this species begins in March and ends in September.

During the field survey, no signs of Swainson's hawk were observed in the Project footprint or surrounding areas. However, there are potentially suitable habitat features such as the Eucalyptus trees on the eastern boundary of the Project footprint and the electrical towers crossing the Project footprint. There are seven CNDDB records for this species within 5 miles of the Project site within the Tulare, Taylor Weir, and Tipton USGS 7.5-minute quadrangles. The closest record is a nest with two adults and one juvenile from 1994, approximately 1 mile southeast, at 160 degrees from the Project site near Bates Slough (EONDX 42286). The next closest record is a nesting pair from 2016, approximately 2.6 miles northwest, at 310 degrees from the Project site near Enterprise Street and Tulare Avenue (EONDX 115249). The next closest record is a nesting pair from 1998, approximately 2.7 miles southeast, at 140 degrees from the Project site near Laspina Street and Avenue 200(EONDX 59442). The next closest record is a nesting pair from 1998, approximately 2.7 miles southeast, at 140 degrees from the Project site near Laspina Street and Avenue 200 (EONDX 59442). The next closest record is a nesting pair from 207, approximately 2.9 miles southeast, at 155 degrees from the Project site State Route 99 and Elk Bayou (EONDX 87975). The next closest record is from 2011, where a historical territory was documented, and a pair was observed annually and presumed to be actively nesting in years succeeding 2005 approximately 4.2 miles southeast, at 165 degrees from the Project site near State Route 99 and Avenue 184 (EONDX 115282). The next closest record is from 2017, where a juvenile was observed on a nest, and a kettle of over 30 unmated, molting second-year birds was also observed approximately 4.7 miles southwest, at 200 degrees from the Project site along Elk Bayou south of Avenue 184 (EONDX 115267). The presence of this species is presumed extant throughout the area.

Mammal Species

San Joaquin Kit Fox (*Vulpes macrotis mutica*)

The San Joaquin kit fox is listed as Threatened at the Federal level and Endangered at the State level. They are petite, light-colored canids, approximately 50 centimeters (20 inches) in length, with bushy, black-tipped tails, large ears, and pointed snouts.

San Joaquin kit fox is a desert-adapted species that occurs mainly in arid, flat grasslands, scrublands, and alkali meadows where the vegetation structure is relatively short. This species uses dens year-round and needs loose-textured soils suitable for burrowing. They primarily prey on kangaroo rats, other small rodents, large insects, and occasionally rabbits. A typical kit fox den is anywhere from four to 10 inches (25 cm) in diameter, and is taller than it is wide, often with a keyhole shape. Active dens usually have dirt berms and matted vegetation adjacent to the entrances, and tracks and prey remains will normally be detected nearby. They may also utilize man-made structures such as pipes and culverts as dens.

There were no signs of San Joaquin kit fox during the Habitat Assessment survey. Suitable habitat for this species is poor within the vicinity of the Project Site. A search of CNDDB records indicates the nearest and most recent occurrence of kit fox is a non-specific area mapped within the city of Tulare from 1992, where a population of kit fox was documented (EONDX 70631). The Project site is located within the non-specific area mapped for this occurrence record. The next closest record is a roadkill kit fox between 1972 and 1975, approximately 4 miles northeast at 60 degrees from the Project site near State Route 137 (EONDX 67932). Another roadkill from 1972 to 1975 was documented approximately 5 miles SE and 102 degrees from the Project site near Road 140 and Avenue 208 (EONDX 67931). Another roadkill from 1972 to 1975 was also documented approximately 4.7 miles SW and 205 degrees from the Project site near Road 80 and Avenue 184 (EONDX 67562).

Due to agriculture and urbanization of the surrounding area, lack of suitable habitat, a lack of burrows that could represent denning habitat observed onsite and the distance of other known occurrences from the site, the occurrence of San Joaquin kit fox within the vicinity of the proposed Project is unlikely. The proposed Project has a low potential to adversely impact populations of this species.

5.2 Special-Status Plant Species

All identified special-status plant species are unlikely to occur within the Project impact area because no natural vegetation communities are present, and the Project area lacks any native seed bank due to agriculture, urban development, and landscaping.

6. Findings

From the information gathered in the data records search and analysis of the habitat on site, the following two special-status species were found to have low potential for occurrence within the vicinity of the Project impact area and were considered for further analysis. These special-status species include: 1 mammal- San Joaquin kit fox; and 1 Bird species- Swainson's hawk. The Habitat Assessment determined there is no suitable habitat for any listed plant species identified in the Literature Review, largely due to urbanization, agricultural practices, and the loss of native seed banks.

There is no suitable nesting bird habitat within the Project boundary, except for the pistachio trees within the orchard, which are required to be removed for the development of the Project. There are seven CNDDB records of Swainson's hawk within 5 miles of the Project site, and there is low-quality nesting and foraging habitat for Swainson's hawk and other nesting bird species in the surrounding area. Habitat is marginal due to current development in the immediate vicinity of the proposed Project site. There is one eucalyptus tree within grassland habitat approximately 350 feet southeast of the Project site that could provide potential nesting and foraging site south of the project. However, the tree has a dead top and has low potential to support nesting Swainson's hawk. Additionally, the presence of a homeless encampment beneath the tree would furthermore decrease the potential for Swainson's hawk to nest at this location.

During the site visit, inactive passerine nests were found within the orchard. To avoid impacts on nesting birds, the Project should commence outside of the avian nesting season or implement avoidance and minimization measures.

Due to habitat quality and proximity of historic occurrences, the San Joaquin kit fox has potential to disperse through the area. Although the most recent record of this species is from 1992, numerous historical records from the 1970s report this species in the area. There were no signs of San Joaquin kit fox occupancy during the habitat assessment, indicating low potential for occurrence.

No small mammal burrows were observed within the proposed Project site; however, a few inactive burrows were present northeast of the site around the existing irrigation valve pipe. The site implements rodent control precluding the potential prey base for kit fox to occur as a transient forager.

Project Impacts

Due to agriculture and urbanization of the surrounding area, a lack of suitable habitat, and a lack of burrows that could represent denning habitat observed onsite, the occurrence of the San Joaquin kit fox within the vicinity of the proposed Project is unlikely.

Due to the lack of suitable habitat, the proposed Project will not likely adversely impact native plants or wildlife species. Vegetation removal and ground disturbance are expected to occur outside of the avian nesting season (February through September) and, therefore, would not impact nesting birds. Should ground disturbance or vegetation removal occur during the avian nesting season, implementation of avoidance and minimization measures (AMMs) would avoid impacts to nesting birds.

7. Conclusion

Based on an analysis of current habitat conditions in and near the Project area, the proposed development of the property is not likely to have any permanent impacts on the special-status species or associated habitats identified in this report. Through the implementation of appropriate avoidance and minimization measures, the proposed Project will not impact the grassland or riverine habitat south of the property. If vegetation and ground disturbance should occur during the active nesting season (February to September), avoidance and minimization measures for nesting birds and raptors should be implemented.

8. Recommendations

To avoid impacts to nesting migratory birds and raptors, construction will commence outside the nesting season, before February 15 or after September 15. Soar Environmental Consulting, Inc. recommends that if any special status species are observed during construction activities, work be stopped immediately, and CDFW is contacted.

Nesting Bird and Raptor Avoidance and Minimization Measures (AMM)

To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through September. If it is not possible to initiate construction outside the nesting bird season (between February 15 and September 15), a pre-construction survey for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during the implementation of the Project. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities. The qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas during this survey. If an active nest is found close enough to the construction area to be disturbed by Project activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has otherwise failed for non-construction related reasons.

9. Study Limitations

This Report has been prepared in accordance with generally accepted environmental methodologies and contains all the limitations inherent in these methodologies. The Report documents site conditions observed during field reconnaissance and do not apply to future conditions. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this Report.

Literature Cited

Audubon Guide to North American Birds. (2024). https://www.audubon.org

Brown, N. 1996. "Swainson's hawk profile" (On-line). Accessed November 29, 1999 at http://arnica.csustan.edu/esrpp/swainson.htm.

Calflora. (2025). Taxon Report. Retrieved from https://www.calflora.org

California Native Plant Society. (2025). Rare Plant Inventory. https://rareplants.cnps.org

Center for Biological Diversity. (2025). Retrieved from https://www.biologicaldiversity.org

eBird Database, Cornell University Lab of Ornithology. (2025). Retrieved from https://ebird.org

Jenkins, J. M. (April 1979). "Foraging behavior of male and female Nuttall Woodpeckers Picoides nuttallii". The Auk (96): 418–420.

Lowther, Peter E. (2000). Nuttall's Woodpecker. Birds of North America Life Histories for the 21st Century No. 555. American Ornithologists' Union.

Miller, A.H.; C. Bock (May–June 1972). "Natural History of Nuttall Woodpecker at Hastings Reservation" (PDF). The Condor. 74 (3): 284–294. JSTOR 1366590.

National Audubon Society. (2024). Audubon. https://www.audubon.org

Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service. (1999). Standardized Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance. Retrieved from https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281285-mammals

Stephen Ward McCabe. University of California, Berkeley. The Jepson Herbarium. Vascular Plants of California. Thiede 2003 in Eggli (ed.) Illus Handbook Succulent Pls 6 (Crassulaceae):85--103. Springer. https://ucjeps.berkeley.edu/eflora/eflora

Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. Nongame Heritage Program report. California Department of Fish and Game (Sacramento)

U.S. Fish & Wildlife Service. (2025). Information for Planning and Consultation. https://ipac.ecosphere.fws.gov

APPENDIX A:

Project Site Photographs

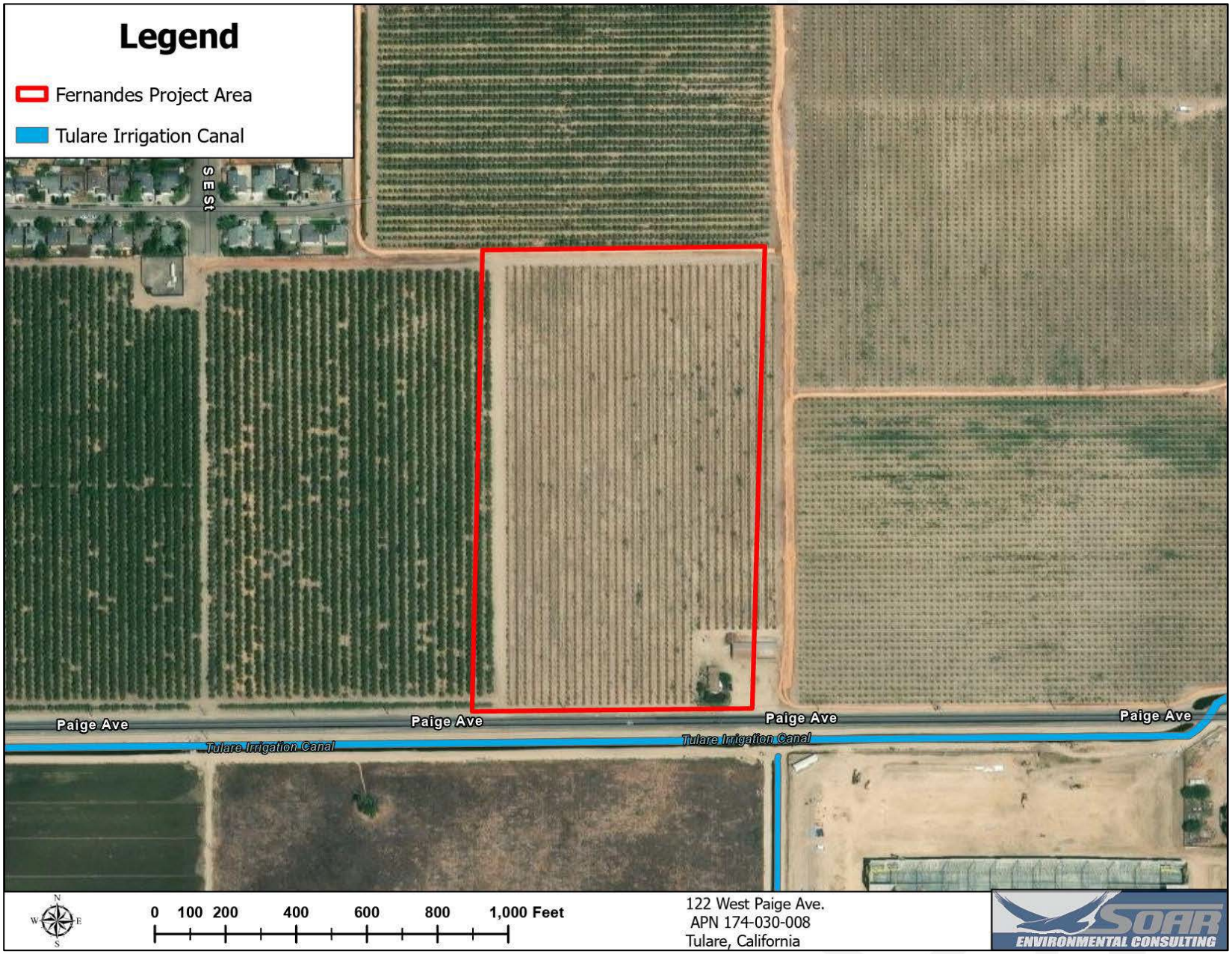




Photo 1. View of the northern boundary of the Project area facing west.



Photo 2. View of the center of the Project area facing north.



Photo 3. View of the northwest corner of the Project Area facing southeast.



Photo 4. View of the southeast corner of the Project area facing east.

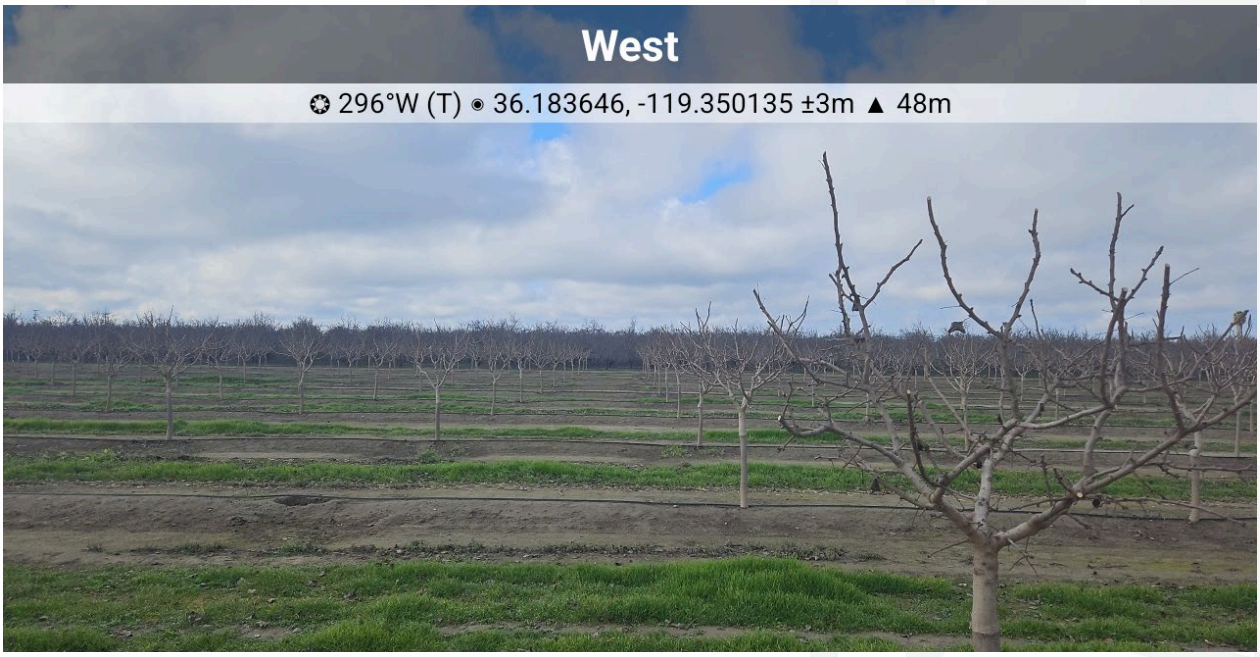


Photo 5. View of the center of the Project area facing west.



Photo 6. View of the adjacent orchard on the eastern boundary of the Project area facing east.



Photo 7. View of the southern boundary of the Project area facing west.



Photo 8. View of the northeastern corner of the Project area facing south.



Photo 9. View of the southeastern corner of the Project area facing northwest.



Photo 10. View of Paige Avenue, Tulare Irrigation Canal, and grassland south of the Projectfrom the southeastern corner of the Project area facing south.



Photo 11. View of the southeastern corner of the Project area facing north.



Photo 12. View of the eastern boundary of the Project area facing north.



Photo 13. View of the western boundary of the Project area facing east.

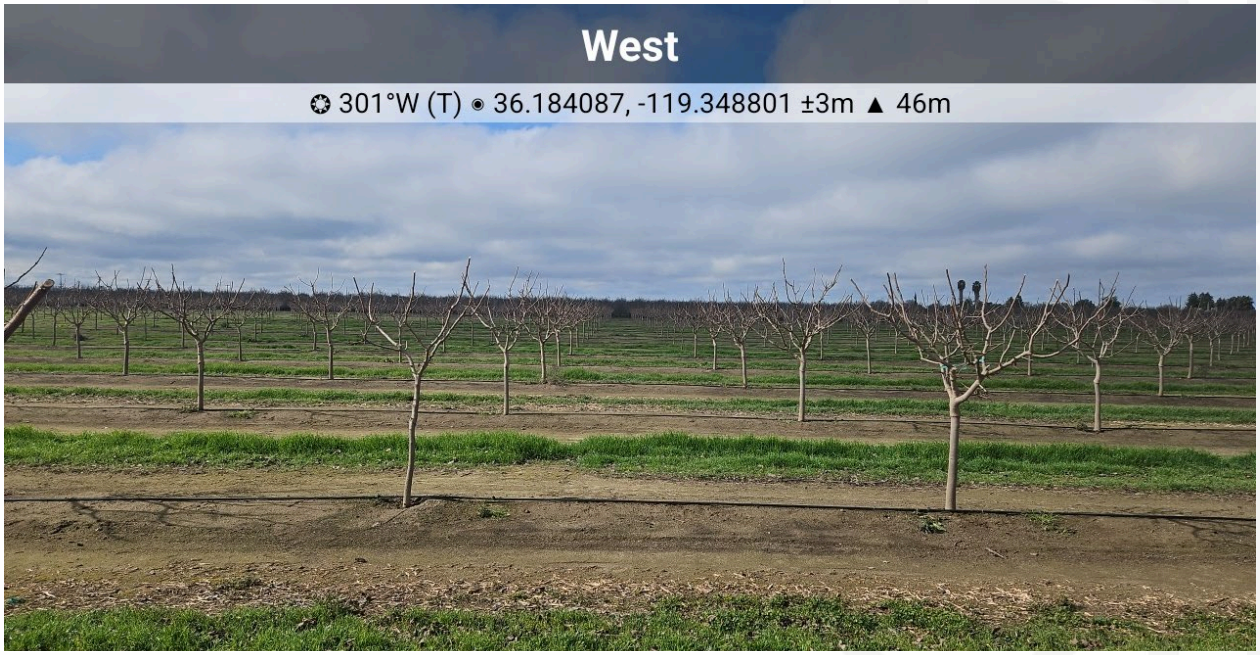


Photo 14. View of the eastern boundary of the Project area facing west.

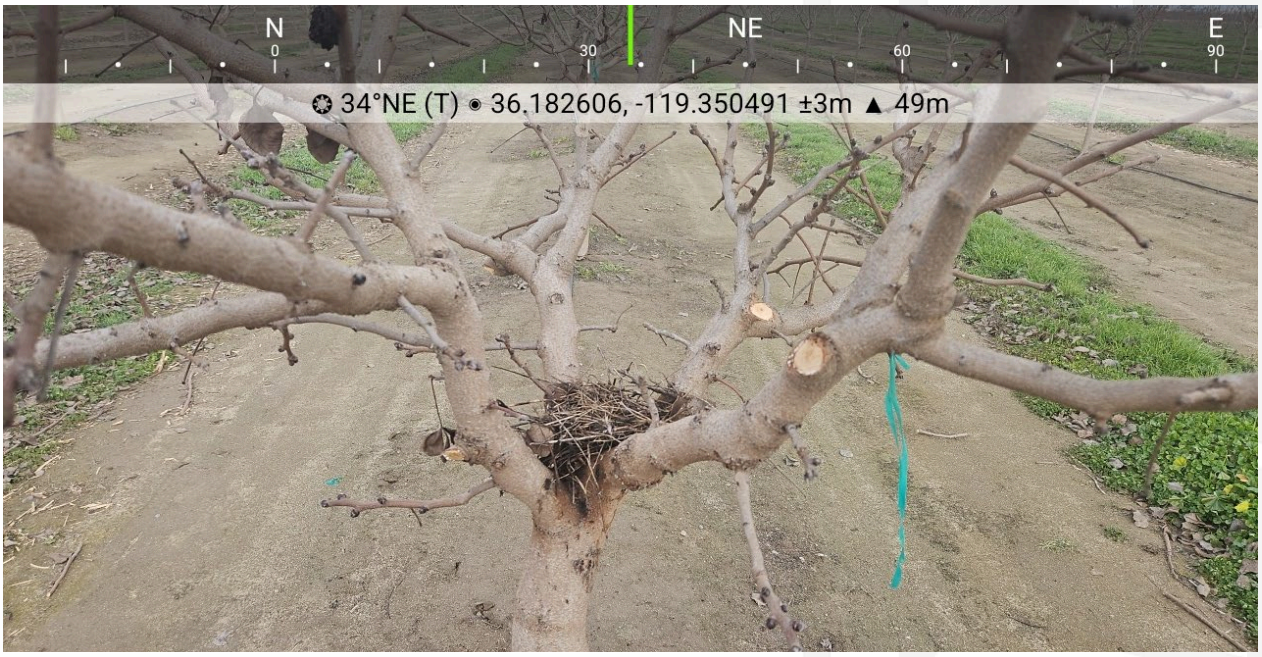


Photo 15. View of the inactive nest within an orchard tree facing northeast.



Photo 16. Adjacent orchard and farm road from the northeastern corner of the Project area facing east.



Photo 17. View of bird nest that was knocked down within the Project area facing north.



Photo 18. View of the adjacent orchard from the northwest corner of the Project area facing north.



Photo 19. View of the western boundary of the Project area facing north.



Photo 20. Adjacent orchards and subdivision from the northwestern corner of the Project area facing west.



Photo 21. View of the northwestern corner of the Project area facing south.



Photo 22. View of the eastern boundary of the Project area facing south.



Photo 23. View of the northeastern corner of the Project area facing west.



Photo 24. Adjacent orchards and farm road from the northeastern corner of the Project area facing north.



Photo 25. View of the southern boundary of the Project area facing north.



Photo 26. View of Paige Avenue, Tulare Irrigation Canal, and grassland south of the Project from the southern boundary of the Project area facing south.



Photo 27. View of adjacent orchards from the northern boundary of the Project area facing north.



Photo 28. View of the northeastern corner of the Project area facing southwest.

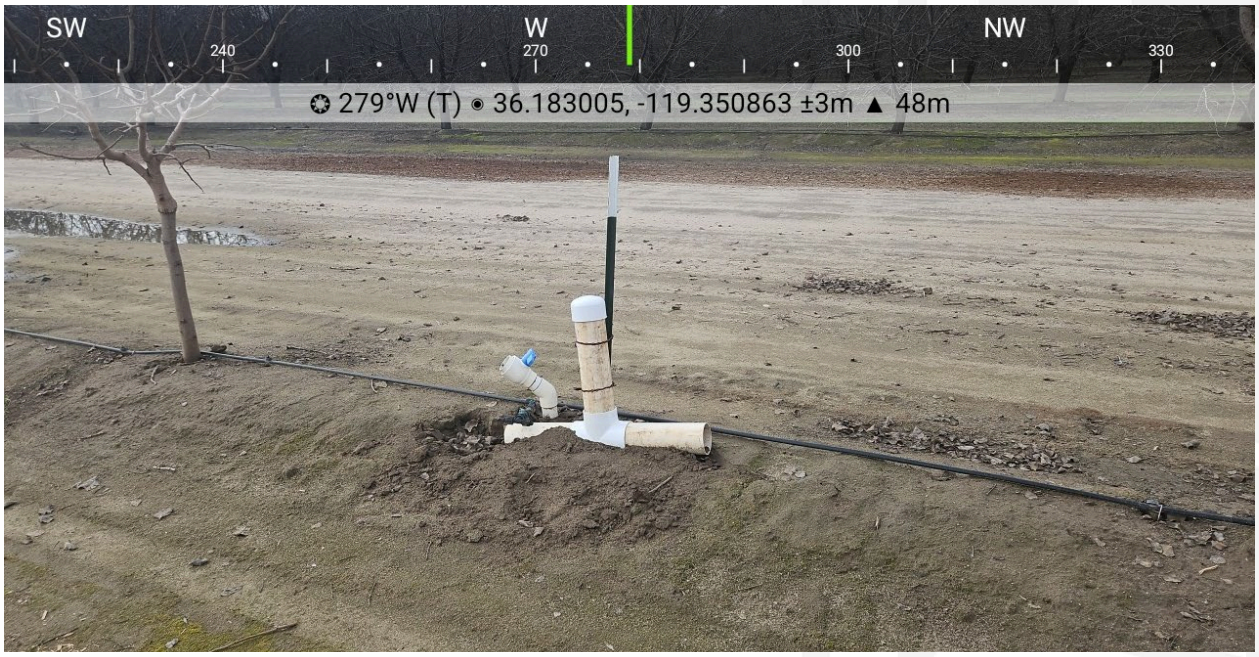


Photo 29. Representative view of squirrel bait traps on the western boundary of the Project area facing west.



Photo 30. View of the southwestern corner of the Project area facing northeast.



Photo 31. View of the center of the Project area facing east.



Photo 32. View of the southeastern corner of the Project area facing west.

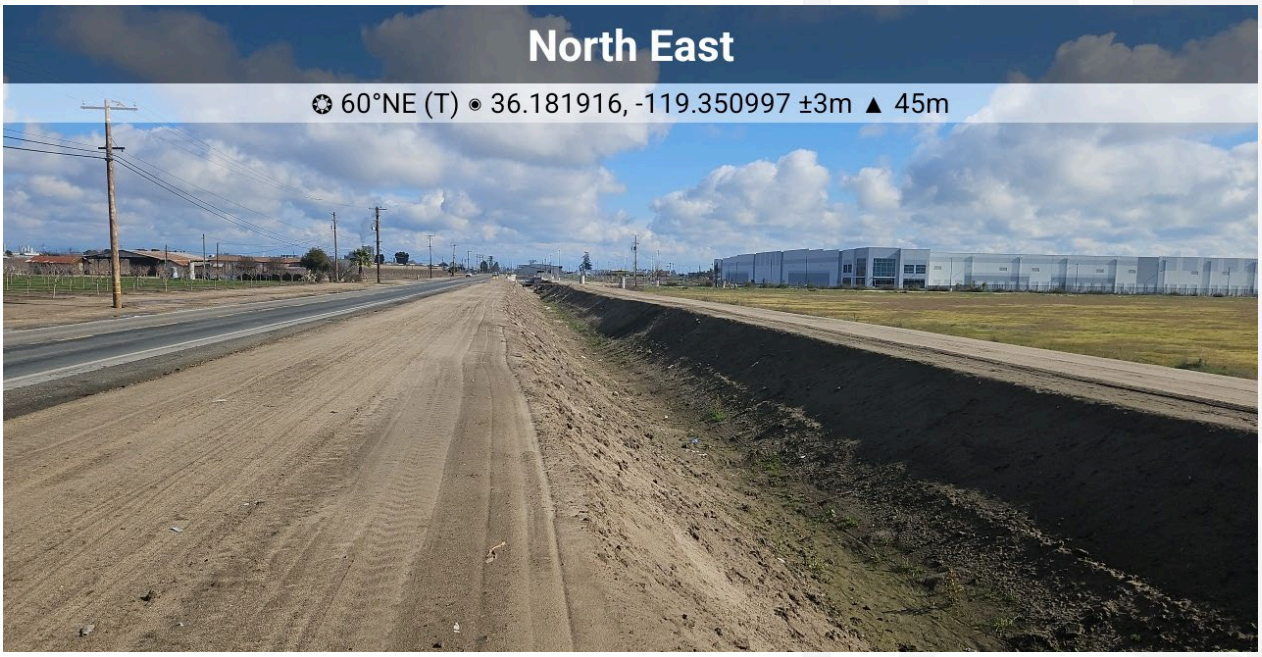


Photo 33. View of the Tulare Irrigation Canal, Paige Avenue, grassland, and large industrial building from the southern boundary of the Project area facing east.



Photo 34. Grassland habitat south of the Project from the southern boundary of the Project area facing south.



Photo 35. View of the center of the Project area facing south.



Photo 36. View of inactive partially collapsed burrows northwest of the Project area facing southeast.



Photo 37. View of the southeast corner of the Project area facing northeast.



Photo 38. Potential nest tree in grassland habitat south of the Project from the southwest corner of the Project area facing southwest.



Photo 39. View of the northern boundary of the Project area facing south.



Photo 40. View of the large vacant industrial building southeast of the Project area facing southeast.



Photo 41. View of the northern boundary of the Project area facing east.



Photo 42. View of the southeastern corner of the Project area facing north.



Photo 43. View of morning dove predation within the Project area facing northeast.



Photo 44. View of the center the Project area facing east.



Photo 45. View of the southeastern of the Project area, Tulare Irrigation Canal, and Paige Avenue facing west.



Photo 46. View of the center of the Project area facing north.
Photos taken by Lucas Knox on January 27, 2025.

APPENDIX B:

United States Fish and Wildlife Service IPaC Resource List

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.

NOT FOR CONSULTATION

Location

Tulare 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

NOT FOR CONSULTATION

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.

---

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).

NOT FOR CONSULTATION

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:

Mammals

NAME	STATUS
Buena Vista Lake Ornate Shrew Sorex ornatus relictus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1610	Endangered
San Joaquin Kit Fox Vulpes macrotis mutica Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat Dipodomys nitratoides nitratoides Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7247	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard Gambelia silus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/625	Endangered
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

NOT FOR CONSULTATION

NAME	STATUS
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
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
San Joaquin Adobe Sunburst Pseudobahia peirsonii Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2931	Threatened

NOT FOR CONSULTATION

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 [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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 avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete

NOT FOR CONSULTATION

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs
The FAQs below provide important additional information and resources.

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

NOT FOR CONSULTATION

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.

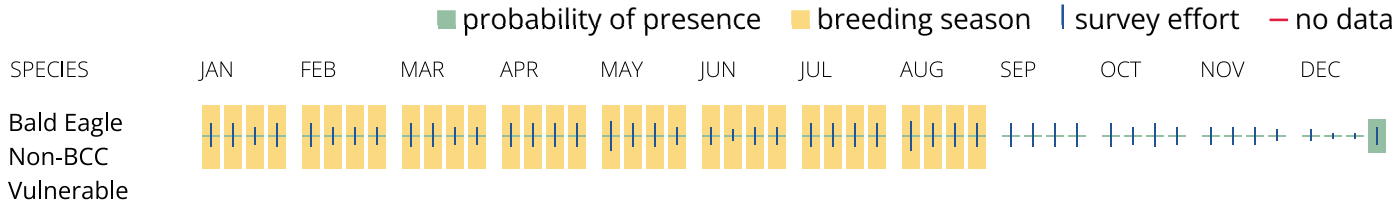
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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.

NOT FOR CONSULTATION



Bald & Golden Eagles FAQs

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 an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 line or no data line (red horizontal) 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 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 and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are 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 resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), 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.

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

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.

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.

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.

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.

NOT FOR CONSULTATION

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.

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.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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 avoidance and minimization measures for birds
- 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

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

NOT FOR CONSULTATION

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

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.

Review the FAQs

The FAQs below provide important additional information and resources.

NOT FOR CONSULTATION

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 This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Black Tern Chlidonias niger surinamenisis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31

Clark's Grebe *Aechmophorus clarkii* — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat *Geothlypis trichas sinuosa* — Breeds May 20 to Jul 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Lawrence's Goldfinch *Spinus lawrencei* — Breeds Mar 20 to Sep 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Marbled Godwit *Limosa fedoa* — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

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

Santa Barbara Song Sparrow *Melospiza melodia graminea* — Breeds Mar 1 to Sep 5

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/5513

Short-billed Dowitcher *Limnodromus griseus* — 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/9480

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

NOT FOR CONSULTATION

Western Grebe aechmophorus occidentalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

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.

NOT FOR CONSULTATION

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.

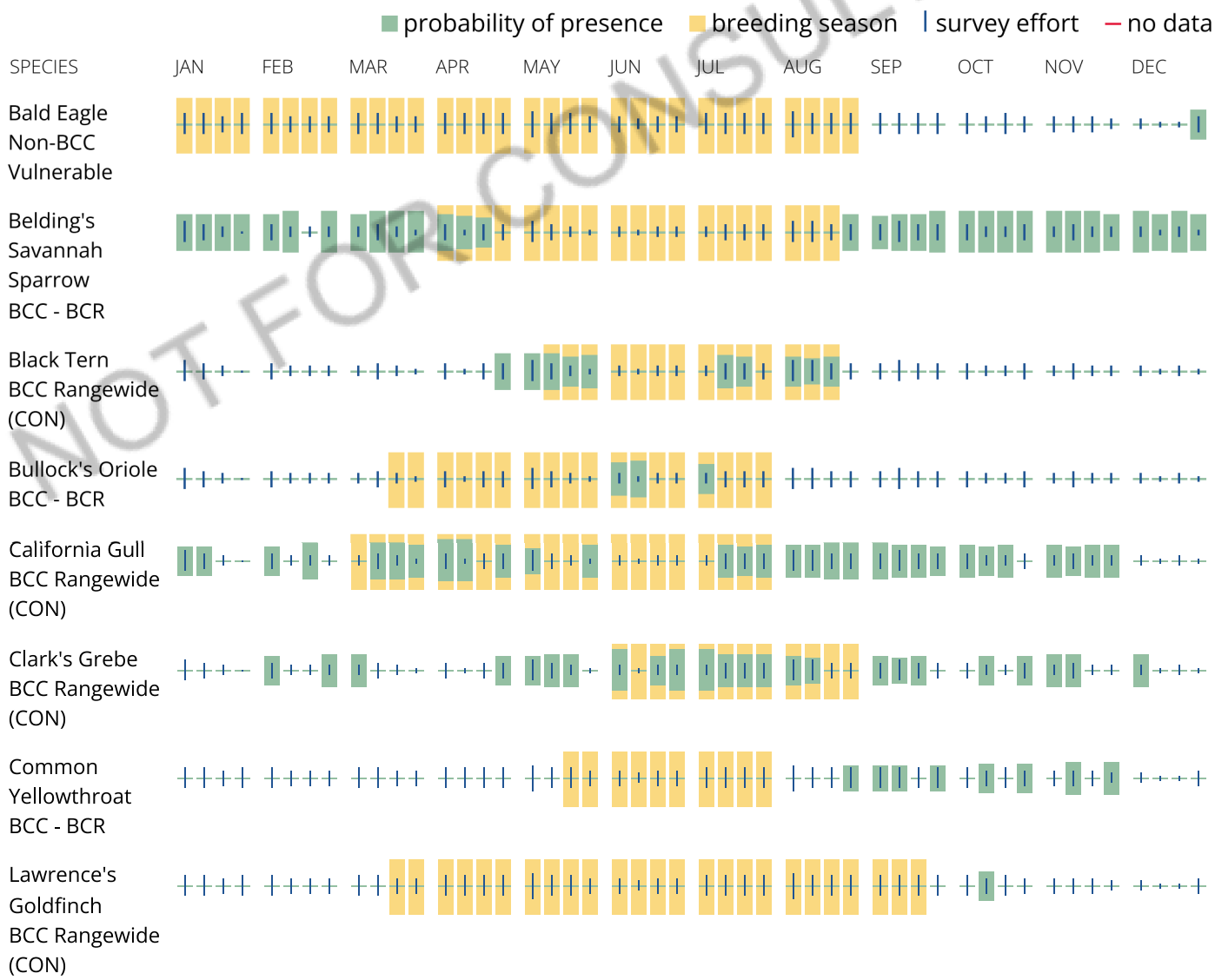
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

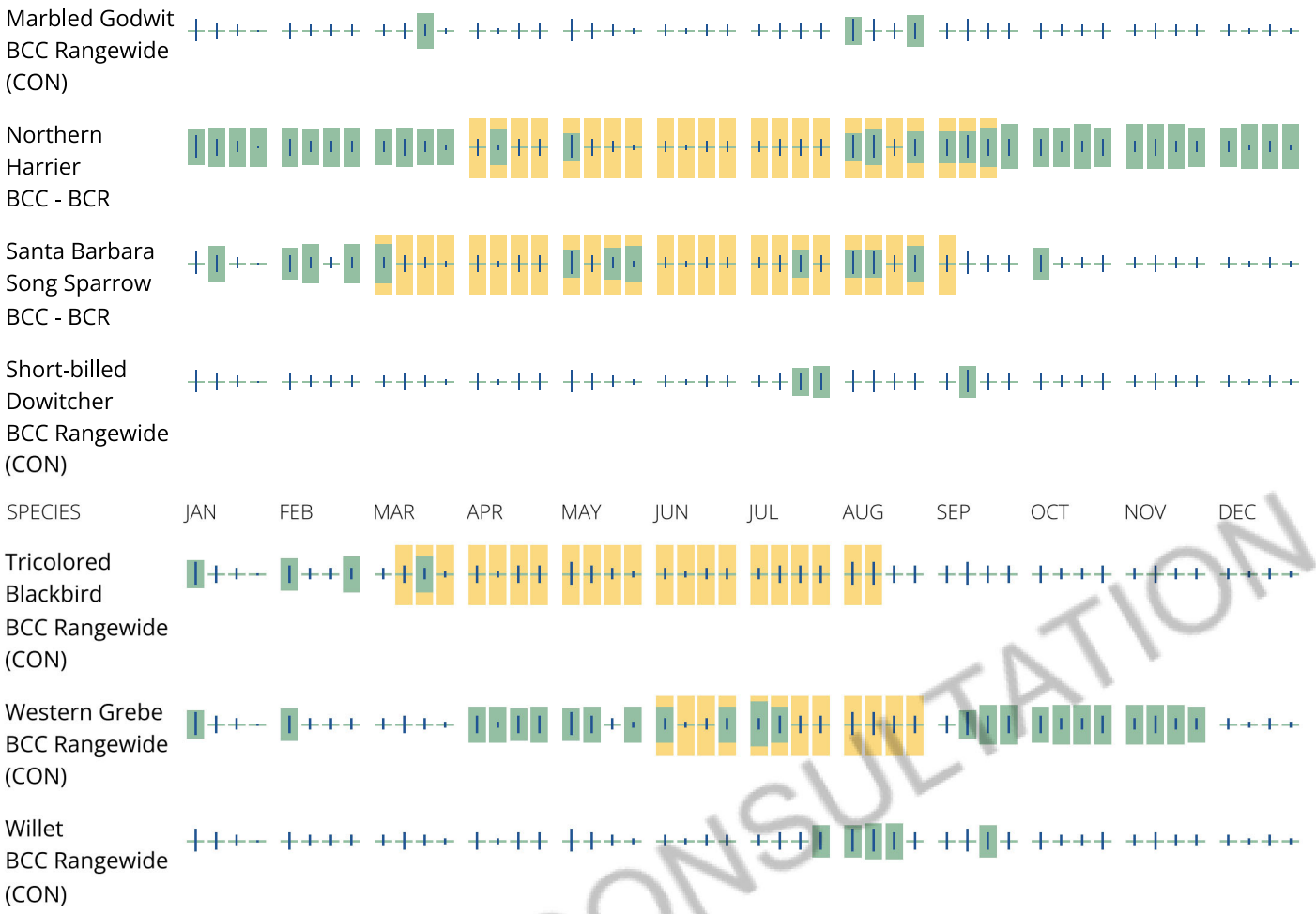
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.

NOT FOR CONSULTATION





NOT FOR CONSULTATION

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed 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 Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

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) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection 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, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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 to 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 resident), you may query your location using the RAIL Tool and view 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 IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), 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 Bald and Golden Eagle Protection 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).

NOT FOR CONSULTATION

Although it is important 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 BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

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.

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 look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 does not represent all birds present in your project area. 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 and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
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.

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.

NOT FOR CONSULTATION

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.

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.

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.

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.

NOT FOR CONSULTATION

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.

NOT FOR CONSULTATION

APPENDIX C:

California Department of Fish and Wildlife RareFind

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Paige (3611924) OR Goshen (3611934) OR Visalia (3611933) OR Cairns Corner (3611922) OR Taylor Weir (3611914) OR Tipton (3611913) OR Woodville (3611912) OR Exeter (3611932) OR Tulare (3611923))
 AND (Federal Listing Status IS (Endangered OR Threatened OR Proposed Endangered OR Proposed Threatened OR Candidate) OR State Listing Status IS (Endangered OR Threatened OR Rare OR Candidate Endangered OR Candidate Threatened))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
blunt-nosed leopard lizard *Gambelia sila*	ARACF07010	Endangered	Endangered	G1	S2	FP
burrowing owl *Athene cunicularia*	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
Crotch's bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G2	S2	
northwestern pond turtle *Actinemys marmorata*	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S3	
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	AMAFD03152	Endangered	Endangered	G2T1T2	S2	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
western spadefoot *Spea hammondii*	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	

Record Count: 14

APPENDIX D:

California Native Plant Society Rare Plant Inventory

CNPS Rare Plant Inventory

Search Results

2 matches found. Click on scientific name for details

Search Criteria: , CRPR is one of [1A:1B:2A:2B:3:4] , Fed List is one of [FE:FT:FC] and State List is one of [CE:CT:CR:CC] , Quad is one of [3611923:3611924:3611922:3611932:3611933:3611934:3611914:3611913:3611912]

▲ 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
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	Feb-May	FE	CE	G1	S1	1B.1	Yes	1984-01-01	No Photo Available
Pseudobahia peirsonii	San Joaquin adobe sunburst	Asteraceae	annual herb	Feb-Apr	FT	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available

Showing 1 to 2 of 2 entries

Go to top

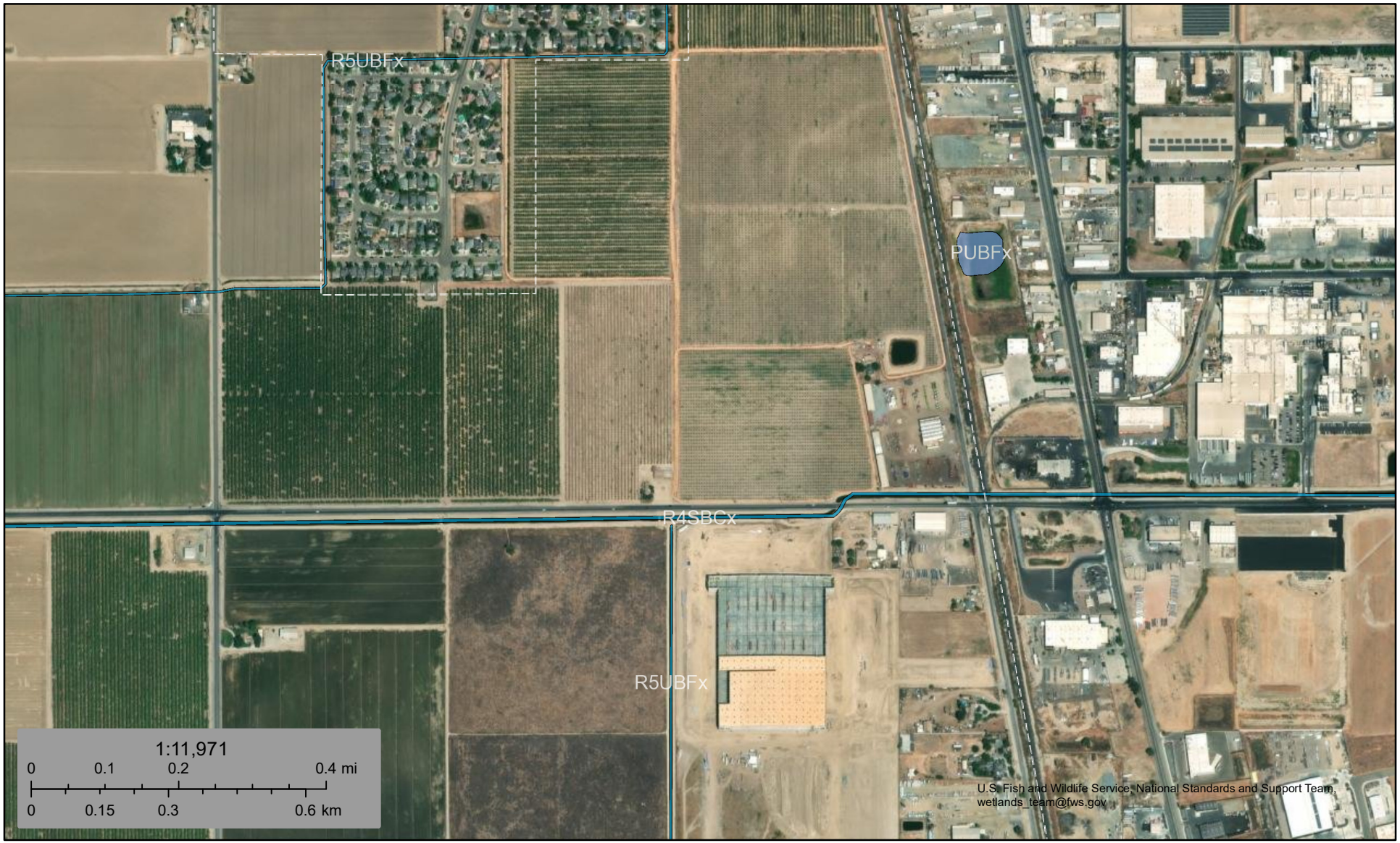
Suggested Citation:
California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website https://www.rareplants.cnps.org [accessed 22 January 2025].

APPENDIX E:

United States Fish and Wildlife Service: National Wetland Inventory Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands



January 22, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX F:

Project Site Plan

OCTOBER 2024

FERNANDES SUBDIVISION

This project proposes the development of a 120-lot subdivision in the City of Tulare, with average lot sizes of 3,825 square feet. The project includes a zone change to R-1-4, allowing for smaller residential lots that provide more affordable homeownership opportunities. Designed to meet the needs of first-time buyers, young families, and those looking to downsize, this subdivision offers a thoughtful balance of affordability and neighborhood quality, creating a welcoming community for a wide range of residents.

Seamlessly integrating with the neighboring Leckerkerker and Valov subdivisions, the project fosters a connected and cohesive community environment. A key feature is the inclusion of a Class I mixed-use trail along Paige Avenue. This trail is designed to enhance multimodal connectivity for pedestrians and cyclists, promoting active transportation and reducing vehicle reliance. The trail will connect to planned infrastructure, providing future residents with improved access to citywide transportation networks and community amenities.

This development aims to address Tulare's growing housing needs by expanding homeownership opportunities while promoting a healthy and connected lifestyle. The project's thoughtful design will contribute to the city's long-term goals of creating vibrant, inclusive communities.

ARCHITECTURE | PLANNING | CIVIL | STRUCTURAL | SURVEYING

4CREEKS



ARCHITECTURE | PLANNING | CIVIL | STRUCTURAL | SURVEYING

4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

FERNANDES SUBDIVISION

REQUIRED ENTITLEMENTS

- Tentative Subdivision Map
- Rezone
- Conditional Use Permit (Small Lot Residential)

SITE INFORMATION

APN:	174-030-008
Acreage:	±19.58 AC
Jurisdiction:	City of Tulare
Current Use:	Farmland, Single Family Residential
Proposed Use:	Single-Family Residential
Zoning (Existing):	R-1-5
Zoning (Proposed):	R-1-4
General Plan (Existing):	Low Density Residential
General Plan (Proposed):	Low Density Residential

UTILITIES

Water:	City of Tulare
Stormwater:	City of Tulare
Sewer:	Tie-in to existing 27" line in Paige Ave
Electricity:	Southern California Edison
Natural Gas:	Southern California Gas
Telephone:	AT&T

TYPICAL LOT SIZES

Number of Lots:	120
Average Lot Size:	3,825 SF (45' X 85')
Minimum Lot Size:	3,823 SF
Maximum Lot Size:	6,745 SF
Gross Density:	6.13 DU/Acre

PROJECT DIRECTORY

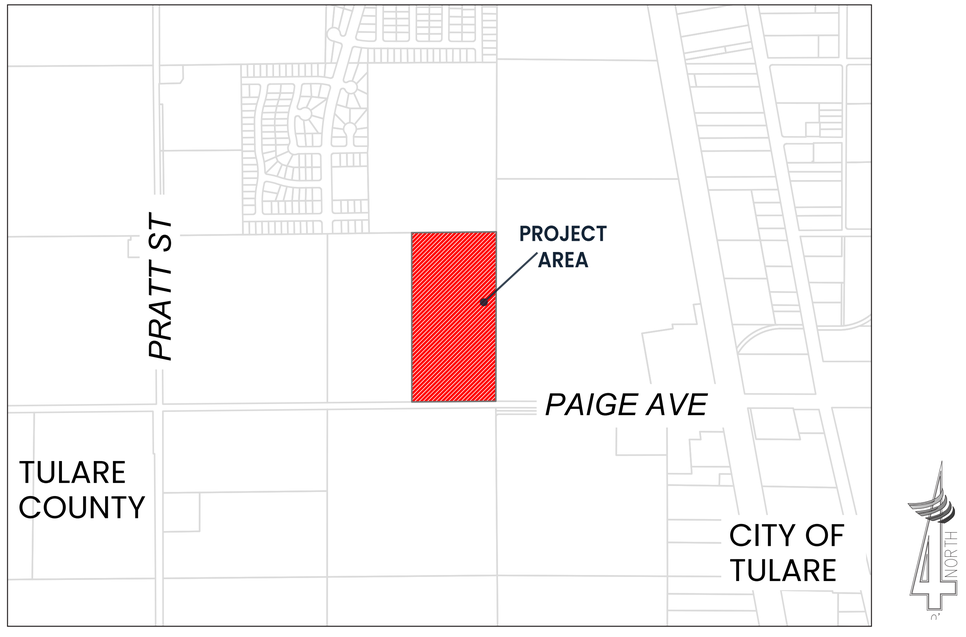
Applicant:
Artemis Partners, LLC
324 S. Santa Fe St., Ste. A
Visalia, CA 93292
Contact: Matt Ainley
Phone: (559) 737-3748

Owner:
BF Central Valley Holdings, LLC
18300 Redmond Way, Suite 120
Redmond, WA 98052
Contact: Shane Bouchard
Phone: (909) 600-4990

Agent:
Molly Baumeister, AICP (4Creeks, Inc.)
324 S Santa Fe St A
Visalia, CA 93292
Phone: (559) 802-3052
Contact: mollyb@4-creeks.com

Ellie Krantz (4Creeks, Inc.)
324 S Santa Fe St A
Visalia, CA 93292
Phone: (559) 802-3052
Contact: elliek@4-creeks.com

VICINITY MAP

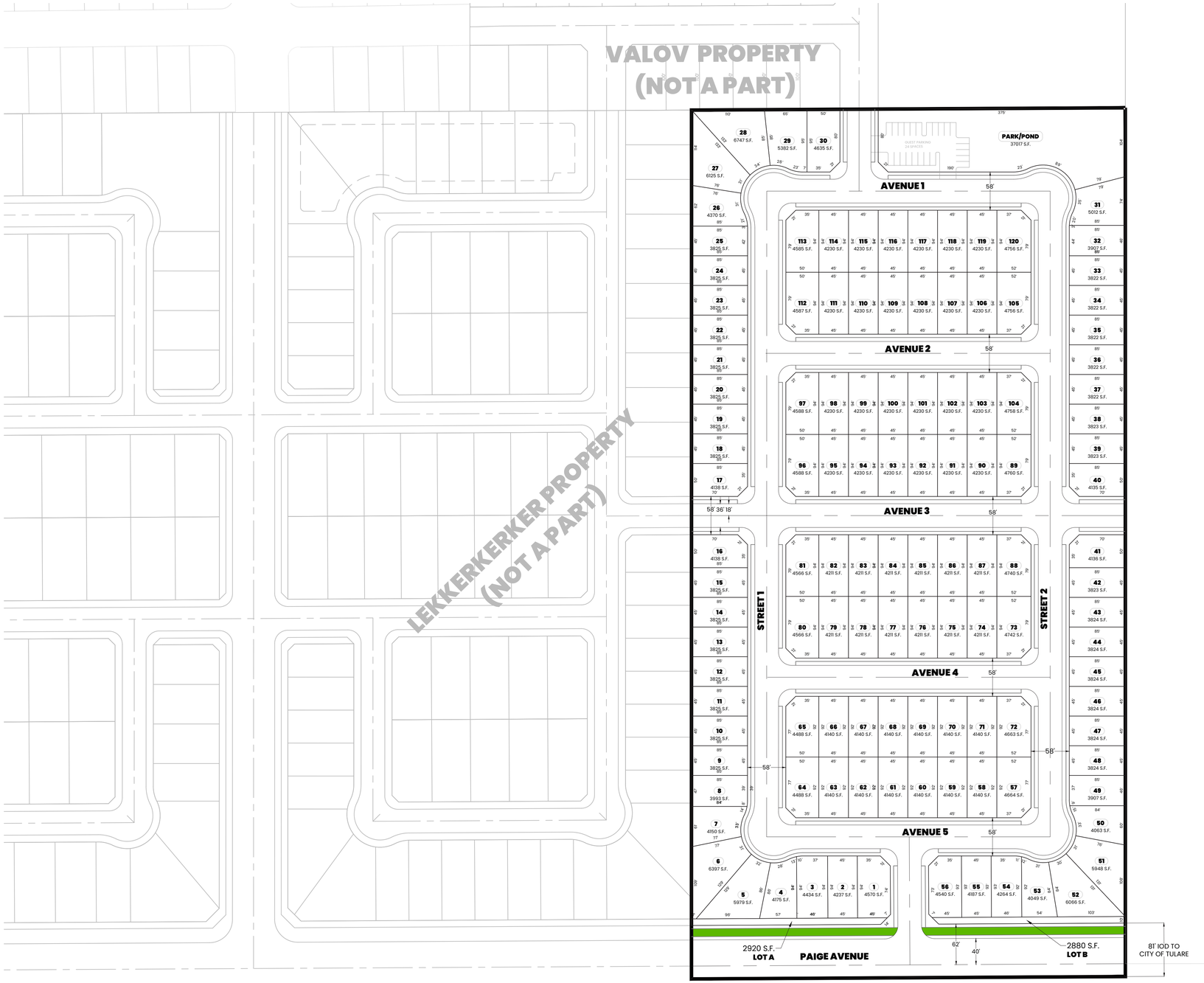


SHEET INDEX

P1.0 Tentative Subdivision Map
P2.0 Details

SET NOT FOR CONSTRUCTION

For planning purposes only, do not scale drawings



4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

SET NOT FOR CONSTRUCTION
For planning purposes only, do not scale drawings

TENTATIVE SUBDIVISION MAP

P1.0

CROSS SECTIONS

NOT TO SCALE

CITY OF TULARE

LOCAL RESIDENTIAL STREET CROSS SECTION

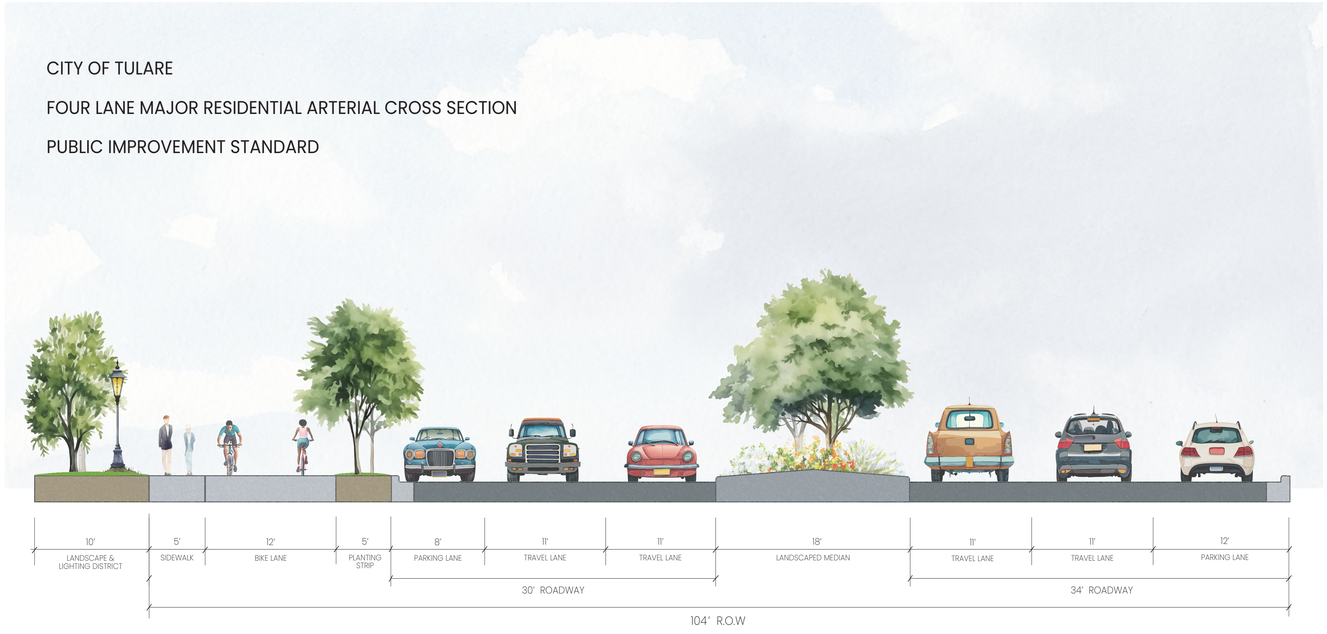
PUBLIC IMPROVEMENT STANDARD



CITY OF TULARE

FOUR LANE MAJOR RESIDENTIAL ARTERIAL CROSS SECTION

PUBLIC IMPROVEMENT STANDARD



4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

SET NOT FOR CONSTRUCTION
For planning purposes only, do not scale drawings

Appendix D

Cultural Resources Technical Memorandum

TECHNICAL MEMORANDUM

Date: February 11, 2025

To: Molly Baumeister, Environmental Planner, AICP, 4Creeks, Inc.

From: Consuelo Sauls, M.A., RPA, Archaeologist, Taylored Archaeology

Subject: **Cultural Resources Technical Memorandum Desktop Review for the Fernandes Tentative Subdivision Map Project, City of Tulare, County of Tulare, California**

Introduction

Taylored Archaeology has conducted a records search for the Fernandes Tentative Subdivision Map Project (Project). The Project proposes to develop a 120-lot subdivision in the City of Tulare, Tulare County, California. The objective of the records search was to identify whether any prehistoric or historical cultural resources had been recorded previously within the Project boundary and/or within a 0.5-mile radius buffer of the Project area. The Project is currently undergoing environmental evaluation under the California Environmental Quality Act (CEQA) with the City of Tulare serving as lead agency.

Project Description and Location

The Project proposes to develop a 120-lot subdivision of single-family residential lots with an average lot size of 3,825 square feet. The subdivision will include landscaping, lighting, and local streets connecting to West Paige Avenue to the south. The 19.58-acre Project site is in the south part of the City of Tulare, west of Highway 99 (Figure 1). The site is along West Paige Avenue, is currently used as farmland with a rural residence, and is surrounded by rural land. The Project site consists of Tulare County Assessor's Parcel Number 174-030-008 within Township 20 South, Range 24 East, in the southeast quarter of Section 15 as depicted on the 1950 (photorevised 1969) United States Geological Survey (USGS) 7.5-minute series Tulare, California topographic quadrangle map (Figure 2). See Attachment A for Figures 1 – 3.

Methods

Taylored Archaeology researched potential cultural resources within the Project vicinity by requesting a cultural resources records search from the Southern San Joaquin Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), at California State University, Bakersfield and reviewing records in relationship to the Project area. The records search covered the Project area and all land within a 0.5-mile radius of the Project boundary. The search also included a review of the following: the Archaeological Resources Directory, the National Register of Historic Places, the California Registry of Historic Resources, the California Points of Historical Interest, the California Historical Landmarks, the California State Historic Resources Inventory, and a review of cultural resources reports on file with the SSJVIC. Taylored Archaeology sent a request for a Sacred Lands File (SLF) search to the Native American Heritage Commission (NAHC) to know whether the Project area is located on or in the vicinity of tribal lands or sacred sites.

Archival research included a review of available historical maps and aerial photographs for the Project site and vicinity. The archival research focused on documenting modifications to the physical setting and identifying any potential natural or man-made features (e.g., stream courses, canals, ditches, roads, habitation markers, buildings and vegetation).

Records Search Results

The SSJVIC provided the results of the cultural resources records search (File No. 25-034) for the Project on February 3, 2025 (Attachment B). The records search review indicated two cultural resources studies have been conducted previously within the Project area. Neither of these studies specifically involved a portion of the Project area (Table 1).

Table 1
Previous Cultural Resources Studies within the Project Area

Report Number	Author(s)	Date	Report Title	Study
TU-00041	William Self	1995	Class I Overview, Santa Fe Pacific Pipeline Partners, L.P., Proposed Concord to Colton Pipeline Project	Archaeological Literature Review
TU-01190	Annie R. Mitchell	1957	Jim Savage and the Tulareño Indians	Book; No survey of Project area

The records search results identified seven cultural resources studies (Table 2) conducted within a 0.5-mile radius of the Project boundary. These include two phase I archaeological surveys, one phase I archaeological and historical survey, and one archaeological monitoring report. None of the prior cultural resources studies were adjacent to, or overlapped with, the Project site.

Table 2
Previous Cultural Resources Studies within a 0.5-mile radius of the Project Area

Report Number	Author(s)	Date	Report Title	Study
TU-00102	Brian Hatoff, Barb Voss, Sharon Waechter and Stephen Wee Vance Bente	1995	Cultural Resources Inventory Report For the Proposed Mojave Northward Expansion	Archaeological field survey
TU-00103	Brian Wickstrom and	1997	Cultural Resource Survey for the Selma to Bakersfield Fiberoptic Line, Southern San Joaquin Valley, California	Archaeological field survey
TU-00244	R.J. Cantwell	1979	Archaeological Survey Report for South "K" Street from Paige Avenue to Bardsley Avenue, City of Tulare, California	Archaeological field survey
TU-01059	Mark S. Kielty and Russell C. Fey	1987	City of Tulare Historic Resources Inventory	Historical Architectural Field Survey

Report Number	Author(s)	Date	Report Title	Study
TU-01324	Cindy Arrington, Bryon Bass, Joan Brown, Chris Corey and Kevin Hunt	2006	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	Archaeological Monitoring and Findings Report
TU-01839	Brian Wickstrom	2018	Historic Property Survey Report for the State Route 99 Tulare Interchange Project in Tulare City, Tulare County, California Archaeological Survey Report For the State Route 99 Tulare Interchange Project in Tulare City, Tulare County, California	Historical Architectural Field Survey Archaeological Field Survey
TU-01961	David S. Whitley and Robert Azpitarte	2022	Phase I Survey/Class III Inventory, PNP Matheny Pipeline Project, Tulare County, California	Archaeological Field Survey

According to the records search results, no known cultural resources were previously recorded within the Project boundary. Five cultural resources, all historic-era, were previously recorded within a 0.5-mile radius of the Project area (Table 3). One historic-era resource, a segment of Highway 99 (P-54-005297), was found eligible for listing in the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). A second historic-era resource, a segment of the Tulare Irrigation Canal (P-54-005296), was found eligible for listing in the CRHR. A third historic-era resource, a segment of the Southern Pacific Railroad (P-54-004626), was found not eligible for listing in the NRHP nor the CRHR. The final two historic-era resources were not evaluated. None of these resources are immediately adjacent to, or overlap, the Project site. Overall, the Project will not impact these identified resources.

Table 3
Previous Recorded Cultural Resource within a 0.5-mile radius of the Project Area

Resource Number	Age Association	Resource Type	Resource Description	NRHP/CRHR Eligibility Status	Distance from Project Boundary
P-54-002160	Historic	Site	Remnants of structure, concrete foundations, and glass and ceramic sherds	Not evaluated	0.25 miles northeast
P-54-002184	Historic	Structure	Segment of the Tulare Canal and railroad trestle	Not evaluated	0.3 miles east
P-54-004626	Historic	Structure	Segment of Southern Pacific Railroad	Not eligible for NRHP OR CRHR	0.3 miles east
P-54-005296	Historic	Structure	Segment of Tulare Irrigation Canal	Eligible for CRHR under Criterion 1 and 3	80 feet south

Resource Number	Age Association	Resource Type	Resource Description	NRHP/CRHR Eligibility Status	Distance from Project Boundary
P-54-005297	Historic	Structure	Segment of Highway 99	Eligible for NRHP and CRHR under Criterion A/1	0.3 miles east

Sacred Lands File Search Results

Taylored Archaeology submitted a SLF search request for the Project site to the NAHC on January 21, 2025. The NAHC's email response (Appendix C) was received on January 22, 2025, indicating that the SLF results were negative.

Archival Research

Available historical maps were examined dated as early as 1892 and aerial photographs as early as 1946. A Tulare County atlas from 1892 depicts the Project site as a plot with the same boundary as the current Project site, and owned by an "A.C. Barnell" with a road adjacent to the south of the Project site in the same alignment as present-day West Paige Ave (Thompson 1892). The 1892 atlas depicts no structures on the Project site, and additionally shows a canal labeled "T.I.D. Canal" on the south end of the street outside the Project site in the same alignment as present-day the Tulare Irrigation Canal (P-54-005296). Topographic maps ranging from 1925 to 1969 show a building in the southern portion within the Project boundary (USGS). Available USGS topographic maps after the 1980s no longer depict individual structures, only features such as railroad, roads, and canals.

Aerial photographs of the Project site dating from 1946 to 2024 demonstrate that the land within the Project boundary has been used for agriculture for nearly a century (Google Earth Pro 2025, NETROnline 2025). An aerial photograph from 1946 depicts the site as an agricultural field with a rural residence and outbuildings in the southeastern corner of the site (USAAA). By 1969, the rural residence and outbuildings no longer appear in the southeastern portion of the site and nearly all 1956 structures appear to have been demolished or removed (NETROnline 2025). The next available aerial imagery, from 1984 shows the rural residential area similar to present day. Based on aerial imagery from 1994 to present day, and Google Street View from 2007 to 2023, the two buildings in the southeast portion of the site appear to be a manufactured residence and an overhang/outbuilding (Google Street View).

Conclusion and Recommendations

Taylored Archaeology reviewed the results of CHRIS from SSJVIC and SLF search results to identify the presence of cultural resources within the Project site. The CHRIS records search indicated that there have been no prior cultural resources surveys conducted within, nor cultural resources recorded within, the Project boundary. Three historical resources were recorded within a 0.5-mile radius of the Project boundary. Based upon the Project description, none of these resources will be impacted by the proposed Project. The results of the SLF search conducted by the NAHC were negative for the presence of tribal cultural resources within the Project site and the surrounding area. Archival research of available historical topographic maps and aerial photographs of the Project site identified the site as being utilized for agricultural purposes for the past 100 plus years. According to archival research, all buildings currently present on the Project site appear to date from approximately 1984. The results of the SLF search conducted by the NAHC were negative for the presence of cultural resources within the project site.

While past agricultural activities may have potentially destroyed or obscured ground surface evidence of archaeological resources within the Project boundary, intact archaeological resources related to prior occupation of the area may potentially exist below the ground surface.

Taylored Archaeology therefore recommends the following:

- In the event of accidental discovery of unidentified archaeological remains during development or ground-moving activities in the Project area, all work should be halted in the immediate vicinity (within a 100-foot radius) until a qualified archaeologist can identify the discovery and assess its significance.
- If human remains are uncovered during construction, the Tulare County Coroner is to be notified to investigate the remains and arrange proper treatment and disposition. If the remains are identified on the basis of archaeological context, age, cultural associations, or biological traits to be those of a Native American, California Health and Safety Code 7050.5 and PRC 5097.98 require that the coroner notify the Native American Heritage Commission within 24 hours of discovery. The Native American Heritage Commission will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the treatment and disposition of the remains.

Taylored Archaeology appreciates the opportunity to assist you on this project. If you have any questions concerning this letter, please do not hesitate to contact Consuelo Sauls at csaulsarchaeo@gmail.com.

Sincerely,

Consuelo Sauls

Consuelo Sauls, M.A., RPA 41591505
Professional Archaeologist

Attachment A: Project Maps
Attachment B: Records Search Results Letter
Attachment C: Sacred Lands File Results

References

Google

2007 Google Street View. http://maps.google.com. Digital Photograph of 458 West Paige Avenue, Tulare, California, taken June 2007. Accessed February 10, 2025.

2012 Google Street View. http://maps.google.com. Digital Photograph of 458 West Paige Avenue, Tulare, California, taken June 2007. Accessed February 10, 2025.

2021 Google Street View. http://maps.google.com. Digital Photograph of 458 West Paige Avenue, Tulare, California, taken June 2007. Accessed February 10, 2025.

2023 Google Street View. http://maps.google.com. Digital Photograph of 458 West Paige Avenue, Tulare, California, taken June 2007. Accessed February 10, 2025.

Google Earth Pro.

2025 Google Earth Software, Google, Inc.

NETROnline

2025 "Historic Aerials". https://www.historicaerials.com/ Accessed January 29, 2025.

Thompson, Thomas H.

1892 Official Historical Atlas Map of Tulare County. T.H. Thompson, Oakland, California

U.S. Agricultural Adjustment Administration (USAAA)

1946 Fresno County, California Aerial Survey No. 1946 F-K 13-32, http://digitized.library.fresnostate.edu/cdm/singleitem/collection/aerial/id/16014, accessed through Map and Aerial Locator Tool (MALT), Henry Madden Library, California State University, Fresno, accessed February 11, 2025.

United States Geological Survey (USGS)

1925 *Tulare, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

1950 *Tulare, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

1969 *Tulare, California, Quadrangle Map, 1950, photo revised 1969*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

2012 *Tulare, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

2015 *Tulare, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

2018 *Tulare, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

2021 *Tulare, California, Quadrangle Map*. 7.5-minute series. U.S. Geological Survey, Denver, Colorado.

ATTACHMENT A

Project Maps

6083 N Figarden Dr., Ste. 616, Fresno, CA 93722
559.797.1572 / csaulsarchaeo@gmail.com



Figure 1 Project vicinity in Tulare, California

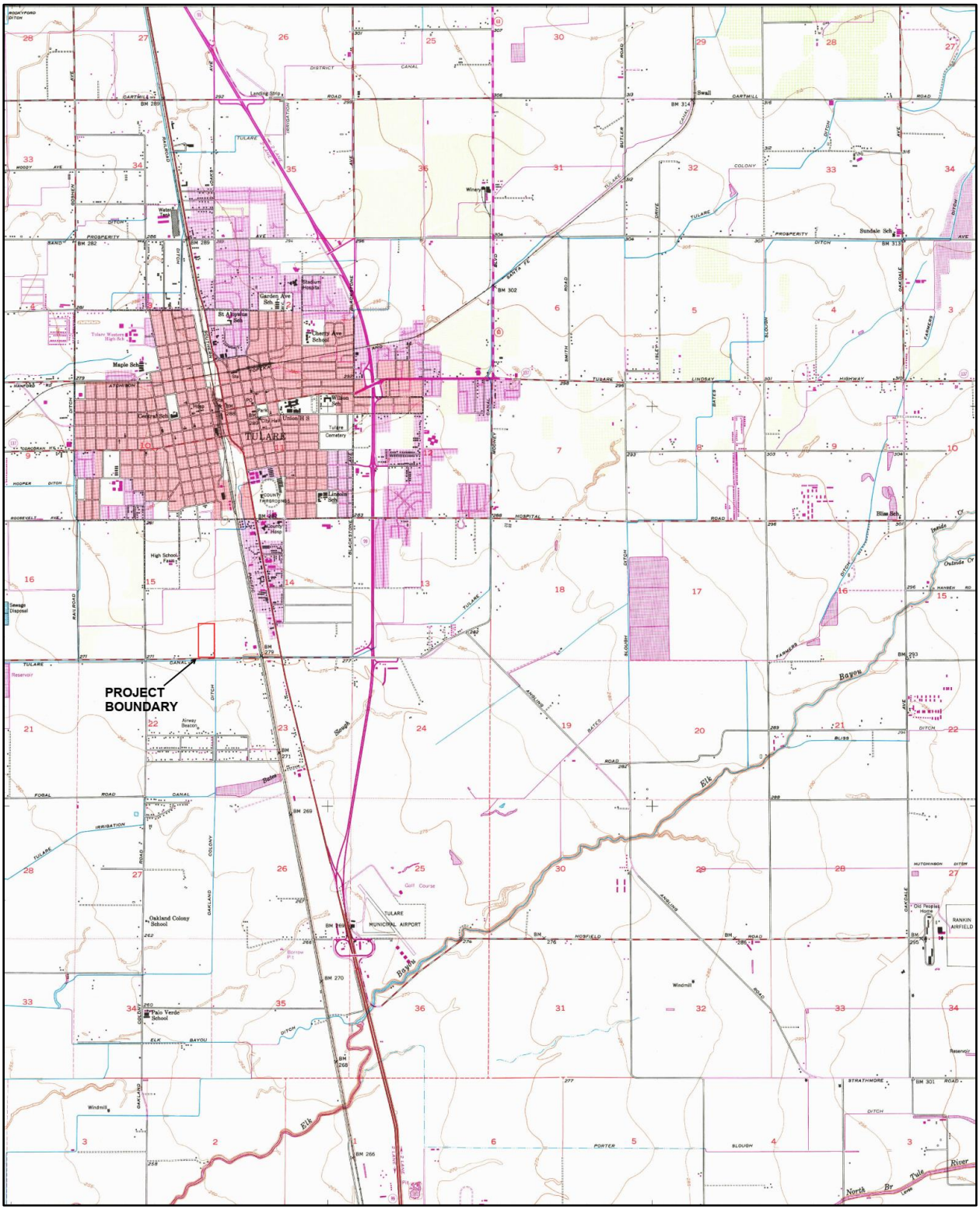


Figure 2 Project location on the USGS Tulare, CA 7.5-minute quadrangle

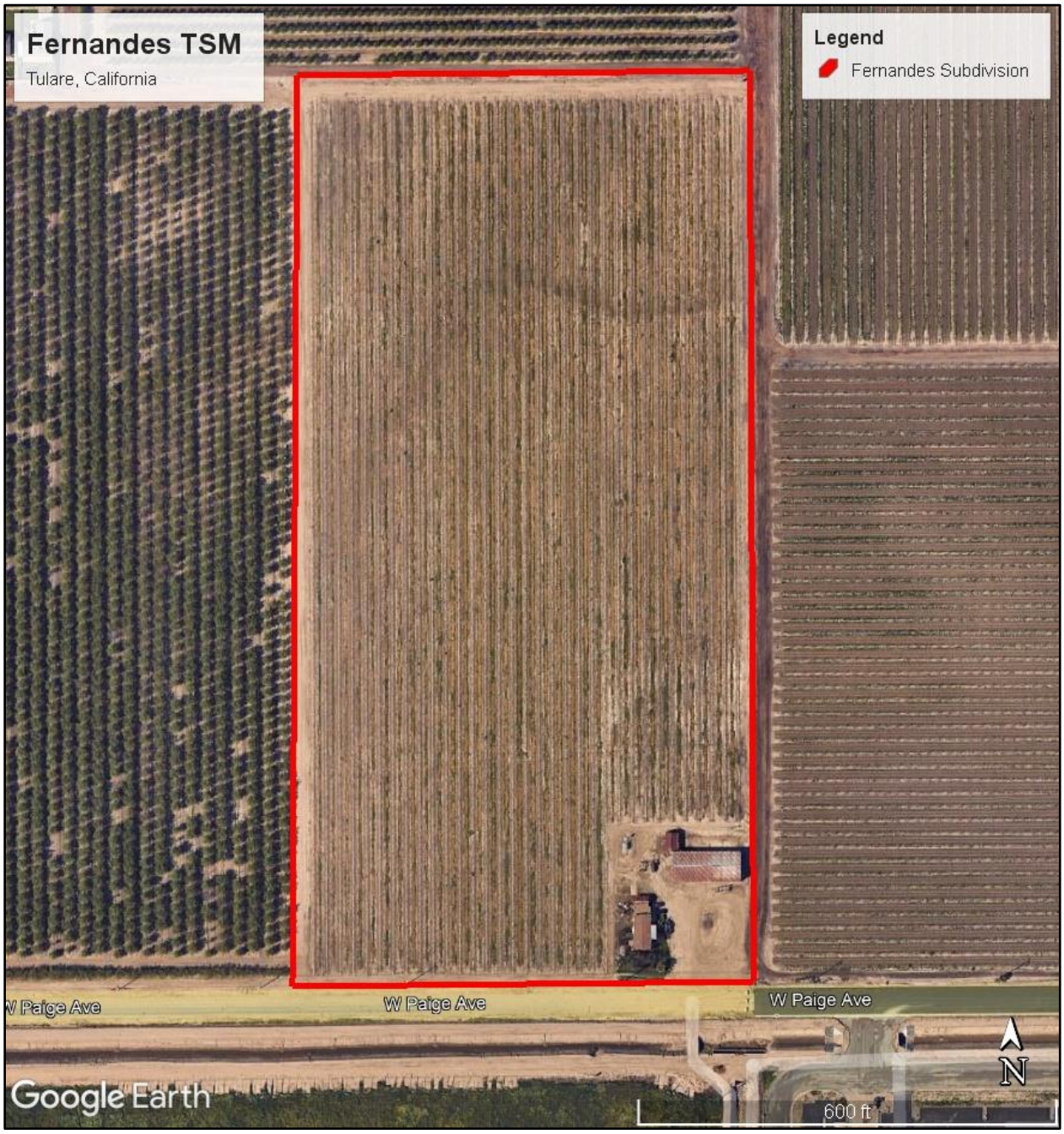


Figure 3 Aerial view of the Project boundary

Taylored Archaeology

ATTACHMENT B

Records Search Results

6083 N Figarden Dr., Ste. 616, Fresno, CA 93722
559.797.1572 / csaulsarchaeo@gmail.com

California Historical Resources Information System

Fresno
Inyo
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
Email: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

2/3/2025

Consuelo Sauls
Taylored Archaeology
6083 N. Figarden Drive, Suite 616
Fresno, CA 93722

Re: Fernandes Tentative Subdivision Map
Records Search File No.: 25-034

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on Tulare USGS 7.5' quad. The following reflects the results of the records search for the project area and the 0.5 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☒ Custom GIS Maps ☐ GIS Data ☐ Hand Drawn Maps (Inyo County Only)

Resources within project area:	None
Resources within 0.5 mile radius:	P-54-002160, 002184, 004626, 005296, 005297
Reports within project area:	TU-00041, 01190
Reports within 0.5 mile radius:	TU-00102, 00103, 00244, 01059, 01324, 01839, 01961

Resource Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Resource Database Printout (details): ☒ enclosed ☐ not requested ☐ nothing listed

Resource Digital Database Records: ☒ enclosed ☐ not requested ☐ nothing listed

Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Report Database Printout (details): ☒ enclosed ☐ not requested ☐ nothing listed

Report Digital Database Records: ☒ enclosed ☐ not requested ☐ nothing listed

Resource Record Copies: ☒ enclosed ☐ not requested ☐ nothing listed

Report Copies: ☒ enclosed ☐ not requested ☐ nothing listed

OHP Built Environment Resources Directory: ☐ enclosed ☐ not requested ☒ nothing listed

Archaeological Determinations of Eligibility: ☒ enclosed ☐ not requested ☐ nothing listed

CA Inventory of Historic Resources (1976): ☐ enclosed ☐ not requested ☒ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see https://www.slc.ca.gov/shipwrecks/

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

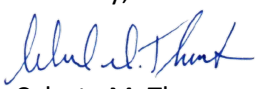
The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,



Celeste M. Thomson
Coordinator

Taylored Archaeology

ATTACHMENT C

Sacred Lands File Results

6083 N Figarden Dr., Ste. 616, Fresno, CA 93722
559.797.1572 / csaulsarchaeo@gmail.com

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Bennae Calac
Pauma-Yuima Band of Luiseño Indians

ACTING EXECUTIVE SECRETARY
STEVEN QUINN

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

January 22, 2025

Consuelo Sauls
Taylored Archaeology

Via Email to: csaulsarchaeo@gmail.com

Re: Fernandes Tentative Subdivision Map Project, Tulare County

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: melina.carlos@nahc.ca.gov

Sincerely,

Melina Carlos

Melina Carlos
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Tulare County
1/22/2025

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
Tulare	Kitanemuk & Yowlumne Tejon Indians	N	Delia Dominguez, Chairperson	115 Radio Street Bakersfield, CA, 93305	(626) 339-6785		2deedominguez@gmail.com	Kitanemuk Southern Valley Yokut	Fresno,Kern,Kings,Los Angeles,Madera,Monterey,San Benito,San Luis Obispo,Tulare	
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Shana Powers, THPO	P.O. Box 8 Lemoore, CA, 93245	(559) 423-3900			Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Nichole Escalon, Cultural Specialist I	P.O. Box 8 Lemoore, CA, 93245	(559) 924-1278			Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Santa Rosa Rancheria Tachi Yokut Tribe	F	Samantha McCarty, Cultural Specialist II	P.O. Box 8 Lemoore, CA, 93245	(559) 633-3440		smccarty@tachi-yokut-nsn.gov	Southern Valley Yokut	Fresno,Kern,Kings,Merced,Monterey,San Benito,San Luis Obispo,Tulare	10/3/2023
	Table Mountain Rancheria	F	Bob Pennell, Cultural Resource Director	P.O. Box 410 Friant, CA, 93626	(559) 325-0351	(559) 325-0394	rpennell@tmr.org	Yokut	Fresno,Kern,Kings,Madera,Monterey,San Benito,San Luis Obispo,Tulare	
	Table Mountain Rancheria	F	Michelle Heredia-Cordova, Chairperson	P.O. Box 410 Friant, CA, 93626	(559) 822-2587	(559) 822-2693	mhcordova@tmr.org	Yokut	Fresno,Kern,Kings,Madera,Monterey,San Benito,San Luis Obispo,Tulare	12/21/2023
	Tule River Indian Tribe	F	Kerri Vera, Environmental Department	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	kerri.vera@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
	Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	
	Tule River Indian Tribe	F	Joey Garfield, Tribal Archaeologist	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	joey.garfield@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
	Wuksachi Indian Tribe/Eshom Valley Band	N	Kenneth Woodrow, Chairperson	1179 Rock Haven Ct. Salinas, CA, 93906	(831) 443-9702		kwood8934@aol.com	Foothill Yokut Mono	Alameda,Calaveras,Contra Costa,Fresno,Inyo,Kings,Madera,Marin,Mariposa,Merced,Mono,Monterey,San Benito,San	6/19/2023

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Fernandes Tentative Subdivision Map Project, Tulare County.

Record: PROJ-2025-000354
Report Type: List of Tribes
Counties: Tulare
NAHC Group: All

Appendix E

Phase I Environmental Site Assessment Report Memorandum

Prepared For

BF CENTRAL VALLEY HOLDINGS LLC
C/O SCOTT ROSENSTOCK
18300 REDMOND WAY, SUITE 120
REDMOND, WA 98052

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

PROPOSED DEVELOPMENT 122 WEST PAIGE AVENUE, APN 174-030-008 TULARE, CALIFORNIA

Date Issued: February 5, 2025
Project Number 25-14

Prepared By

PAUL HUMPHREY, EP
7402 EAST CLINTON AVENUE
FRESNO, CALIFORNIA 93737
TEL (559) 592-3555

TABLE OF CONTENTS

EXECUTIVE SUMMARY ..... **iv**

1.0 INTRODUCTION ..... **vii**

1.1 Purpose 1
1.2 Detailed Scope of Services 1
1.3 Significant Assumptions 2
1.4 Limitations and Exceptions 2
1.5 Special Terms and Conditions 2
1.6 Use Reliance 2

2.0 SITE DESCRIPTION **3**

2.1 Location and Legal Description 3
2.2 Site and Vicinity General Characteristics 3
2.3 Current Use of the Subject Property 3
2.4 Description of Site Improvements 3
2.5 Current Use of Adjoining Properties 3

3.0 USER PROVIDED INFORMATION **4**

3.1 Title Records 4
3.2 Environmental Liens or Activity and Use Limitation 4
3.3 Specialized Knowledge 4
3.4 Commonly Known or Reasonably Ascertainable Information 4
3.5 Valuation Reduction for Environmental Issues 4
3.6 Owner, Property Manager, and Occupant Information 4
3.7 Reason for Performing Phase I ESA 5

4.0 RECORDS REVIEW **6**

4.1 Standard Environmental Record Sources 6
4.2 Additional Environmental Record Sources 8
4.3 Physical Setting Sources 8
4.3.1 Topography 8
4.3.2 Soils/Geology 9
4.3.3 Hydrology 9
4.3.4 Flood Zone Information 9
4.3.5 Oil and Gas Exploration 9
4.3.6 Vapor Encroachment 9
4.4 Historical Use Information: Subject Property and Adjoining Properties 10
4.4.1 Aerial Photographs 10
4.4.2 Fire Insurance Maps 12
4.4.3 City Directories 12
4.4.4 Historical Topographic Maps 12
4.4.5 Additional Historical Record Sources 13
4.4.6 Prior Assessment Reports 13

5.0 SITE RECONNAISSANCE **14**

5.1 Methodology and Limiting Conditions 14
5.2 General Site Setting 14
5.3 Exterior Observations 14
5.3.1 Solid Waste Disposal 14
5.3.2 Surface Water Drainage 14

5.3.3 Wells and Cisterns 14
5.3.4 Wastewater 14
5.3.5 Additional Site Observations 14
5.4 Interior Observations 14
5.5 Potential Environmental Conditions 15
5.5.1 Hazardous Substances and Petroleum Products Used or Stored at the Site 15
5.5.2 Evidence of Releases 15
5.5.3 Polychlorinated Biphenyls (PCBs) 15
5.5.4 Landfills 16
5.5.5 Pits, Ponds, Lagoons, Sumps, and Catch Basins 16
5.5.6 On-Site ASTs and USTs 16
5.5.7 Radiological Hazards 16
5.5.8 Drinking Water 16
5.5.9 Additional Hazard Observations 16
5.5.10 Asbestos-Containing Materials (ACM) 16
5.5.11 Radon 16
5.5.12 Lead-Based Paint 17
5.5.13 Mold Evaluation 17
6.0 INTERVIEWS 18
6.1 Interview with Owner 18
6.2 Interview with Site Manager 18
6.3 Interview with Occupants 18
6.4 Interview with Local Government Officials 18
6.5 Interview with Others 18
7.0 FINDINGS AND CONCLUSIONS 19
7.1 Findings 19
7.1.1 On-Site Environmental Conditions 19
7.1.2 Off-Site Environmental Conditions 19
7.1.3 Controlled Recognized Environmental Conditions 19
7.1.4 Historical Recognized Environmental Conditions 19
7.1.5 De Minimis Environmental Conditions 19
7.2 Opinion 19
7.3 Conclusions 19
7.4 Recommendations 19
7.5 Deviations 21
8.0 REFERENCES 22
9.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS 23
10.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS 24
10.1 Definition of an Environmental Professional 24
10.2 Relevant Experience 24

FIGURES

Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Topographic Map

APPENDIX

Appendix A	Site Photographs	
Appendix B	Historical Research Documentation	
	Exhibit B-1	Aerial Photographs
Appendix C	Regulatory Records Documentation	
	Exhibit C-1	Mapped Database Report
	Exhibit C-2	General Public Records
Appendix D	Interview Records	
Appendix E	Client-Provided Documentation	
Appendix F	Other Supporting Documentation	
Appendix G	Qualifications Of Envionmental Professionals	

EXECUTIVE SUMMARY

Paul Humphrey, EP has performed a Phase I Environmental Site Assessment (ESA) in general accordance with the scope of work and limitations set forth by BF Central Valley Holdings LLC for the property identified as Tulare County Recorder's Office as assessor's parcel number (APN) 174-030-008, Tulare, California (the "Subject Property").

The Phase I Environmental Site Assessment is designed to provide BF Central Valley Holdings LLC with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the Subject Property. This assessment was conducted utilizing generally accepted ESA industry standards in accordance with ASTM E1527-21, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (40 CFR Part 312).

The Subject Property includes a single parcel of land approximately 19.58± acres in size located on the north side of West Paige Avenue approximately 0.38 miles east of South Pratt Avenue in Tulare, California. The Subject Property is identified as APN 174-030-008 with the assigned address of 122 West Paige Avenue.

The Subject Property consists of agricultural land with an approximately one acre area on the southeast portion of the Subject Property which includes a shop, storage building, manufactured home, a detached garage, and farm equipment storage area. The east enclosed area of the shop building is currently utilized for storage of a boat and appears to have formerly been utilized as the farm equipment maintenance shop. This portion of the shop building has a concrete floor. The central and west open area of the shop building is unpaved and does not appear to be in use other than for occasional equipment storage. Stained soil in the central and west open area of the shop building was observed at the time of the January 24, 2025, site visit. The on-site storage building is located northwest of the shop building. The storage building included a concrete floor and basic shelving. Stored materials within the storage building included tree stakes, irrigation drip lines, and two, 2.5 gallon plastic jugs of an unknown liquid. An irrigation water well with filtration system is located west of the storage building and shop. A domestic water well is located west of the manufactured home.

Based on available historical documentation, the Subject Property consisted of agricultural land with two rural residences, outbuildings, and a barn type structure from at least 1937 up to the late-1960s. One of the on-site residences was removed from the site by the early to mid-1970s. The Subject Property appears to have been in use as agricultural land and included a residence and a harvesting company on the southeast portion of the site by the mid to late 1980s. The harvesting company appears to have been active on the southeast portion of the Subject Property from the mid to late 1980s up to approximately 2017 and activities included equipment maintenance and storage. Subject Property use has consisted of agricultural land, a residence, occasional use for farm equipment storage, and occasional general storage since the late 2010s.

The Subject Property is situated within an agricultural area of Tulare, California. The Subject Property is bound to the north by agricultural land; to the east by agricultural land; to the south by West Paige Avenue followed by agricultural land; and to the west by agricultural land.

According to the online database known as Geotracker (http://geotracker.waterboards.ca.gov) maintained by the State Water Resource Control Board (SWRCB), groundwater beneath a site approximately 0.6 miles

east of the Subject Property was at a depth of 150 in 2015 and direction of flow was identified as west southwest.

Paul Humphrey, EP obtained and reviewed a database report from Environmental Risk Information Services (ERIS) for the Subject Property and the surrounding area. The Subject Property is identified as John Domingos Hay Harvesting with governmental database listings as one HAZNET, one CUPA, one FINDS/FRS, and one DELISTED CTNK. These listings are due to registration and tracking by State and local regulatory agencies as having storage and use of welding gases, diesel fuel, propane, motor oils and lubricants, hydraulic fluid, and off-site disposal of waste oils and waste filters associated with maintenance of farm equipment. The Subject Property was not identified in the database or in Tulare County Environmental Health Department (TCEHD) records as having a release or spill or violations. TCEHD records included registration and permitting of Domingos Hay Harvesting as including a Hazardous Materials Business Plan, Exempt Tank, and Small Waste Generator. Records included on-site use of one, 10,000-gallon diesel aboveground storage tank (AST) and one 250-gallon waste oil AST. Personnel at TCEHD searched Subject Property records and found no evidence of the use of underground storage tanks. Based on records review, lack of an identified release, off-site disposal of waste, and type of listings as tracking purposes only, the database listings do not represent a recognized environmental condition.

The ERIS database identified off-site listings as one ENVIROSTOR, one AST, one CERS TANK, one CUPA, two INSP COMP ENF, and one EMISSIONS located within the prescribed search radii. Based on review of regulatory documentation, off-site location, and/or estimated direction of groundwater flow, these facilities do not represent a recognized environmental condition or concern.

Conclusions

Paul Humphrey, EP has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of the property identified as APN 174-030-008, Tulare, California, the Subject Property. Any exceptions to or deletions from this practice are described in Section 1.4 of this report.

Recognized Environmental Conditions (RECs) are defined by the ASTM Standard Practice E1527-21 as: (1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment. Paul Humphrey, EP's assessment has revealed the following RECs associated with the Subject Property or nearby properties:

- Stained soil in the central and west open area of the shop building was observed at the time of the January 24, 2025 site visit. The source of the staining was not identified. Based on historical occupancy of this portion of the Subject Property by a harvesting operation from the mid to late 1980s up to approximately 2017, the staining of the soil is likely associated with former equipment maintenance and storage. The stained soil represents a REC.
- Based on the type of construction and location, the storage building located northwest of the on-site shop was possibly utilized for storage of agricultural chemicals, hazardous substances, and/or petroleum products. At the time of the January 24, 2025, site visit, two, 2.5 gallon plastic jugs of an unknown liquid were observed on the shelves within the storage building. No stains, spills, or evidence of a release was observed within the storage building. The likely historical

storage of agricultural chemicals, hazardous substances, and/or petroleum products, is considered a REC.

Controlled Recognized Environmental Conditions (CRECs) are defined by the ASTM Standard Practice E1527-21 as a recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations). Paul Humphrey, EP's assessment has revealed the following CRECs associated with the Subject Property or nearby properties:

- No on-site CRECs were identified during the course of this assessment.

Historical Recognized Environmental Condition (HREC) is defined by the ASTM Standard Practice E1527-21 as a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations). Paul Humphrey, EP's assessment has revealed the following HRECs associated with the Subject Property or nearby properties:

- No on-site HRECs were identified during the course of this assessment.

Business Environmental Risk (BER) is defined by the ASTM Standard Practice E1527-21 as a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of commercial real estate, not necessarily related to those environmental issues required to be investigated in this practice. BERs do not qualify as recognized environmental conditions, as defined by the ASTM Standard Practice E1527-21. Paul Humphrey, EP's investigation has revealed the following BERs associated with the Subject Property or nearby properties:

- The Subject Property included one irrigation water well located west of the storage building and shop and a domestic water well located west of the manufactured home. If the wells are not to be used, they should be properly destroyed in accordance with State and local guidelines.
- The on-site manufactured home is connected to a septic system. No visual indication of the septic system was observed during Paul Humphrey, EP's site reconnaissance. The septic system should be properly destroyed in accordance with State and local guidelines prior to redevelopment of the Subject Property.
- The Subject Property was historically and is currently used for agricultural purposes. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used onsite. Based on Paul Humphrey, EP's experience, during previous site development activities, near surface soils (where residual agricultural chemical concentrations would have most likely been present, if at all) are likely generally mixed with fill material or disturbed during grading. Also, it is common that engineered fill material is placed over underlying soils as part of site development activities. These additional variables serve to further reduce the potential for exposure to residual agricultural chemicals (if any). Based on these reasons, Paul Humphrey, EP concludes that the possible use of agricultural chemicals is not expected to represent a significant environmental concern. If redevelopment activities for residential use are planned, it should be determined whether sampling relating to the former agricultural use is required by the local planning department or other applicable oversight agency.

Non-ASTM Considerations may include the presence of environmental conditions such as asbestos containing materials, lead-based paint, radon, mold, lead in drinking water, etc. which can affect the

liabilities and financial obligations of the client, the health & safety of site occupants, and the value and marketability of the subject property. Paul Humphrey, EP's assessment has revealed the following Non-ASTM considerations associated with the Subject Property:

- Due to the age of the Subject Property buildings, there is a potential that asbestos containing materials may be present.
- Due to the age of the Subject Property buildings, there is a potential that lead-based paint may be present.

Recommendations

As a result of this assessment, Paul Humphrey, EP recommends the following:

- A Phase II investigation should be conducted to evaluate the conditions of the Subject Property in the area of stained soil in the central and west open portion of the shop building.
- A Phase II subsurface investigation should be conducted to evaluate the conditions of the Subject Property beneath and around the storage building located northwest of the on-site shop. Contents of the two, 2.5 gallon plastic jugs observed on the shelves within the storage building should be identified for proper off-site disposal.

1.0 INTRODUCTION

Paul Humphrey, EP was retained by BF Central Valley Holdings LLC to conduct a Phase I Environmental Site Assessment (ESA) of the property identified as APN 174-030-008, Tulare, California (Subject Property). The protocol used for this assessment is in general conformance with ASTM E1527-21, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (40 CFR Part 312).

On January 24, 2025, Paul Humphrey, EP conducted a site reconnaissance to assess the possible presence of petroleum products and hazardous substances at the Subject Property. Paul Humphrey, EP's investigation included a review of aerial photographs, a reconnaissance of adjacent properties, background research, and a review of available local, state, and federal regulatory records regarding the presence of petroleum products and/or hazardous substances at the Subject Property.

Paul Humphrey, EP contracted ERIS, to perform a computer database search for local, state, and Federal regulatory records pertaining to environmental concerns for the Subject Property and properties in the vicinity of the Subject Property (see Section 4.1).

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to identify Recognized Environmental Conditions (as defined by ASTM Standard E-1527-21) in connection with the Subject Property.

1.2 Detailed Scope of Services

The purpose of the Phase I Environmental Site Assessment is to assist the client in identifying potential environmental liabilities associated with the presence of any hazardous substances or petroleum products, their use, storage, and disposal at and in the vicinity of the subject property that may have occurred at the subject property. Property assessment activities focused on: 1) a review of federal, state, tribal and local databases that identify and describe underground fuel tank sites, leaking underground fuel tank sites, hazardous waste generation sites, and hazardous waste storage and disposal facility sites within the ASTM approximate minimum search distance; 2) a property and surrounding site reconnaissance, and interviews with the past and present owners and current occupants and operators to identify potential environmental contamination; and 3) a review of historical sources to help ascertain previous land use at the site and in the surrounding area.

The goal of Paul Humphrey, EP in conducting the Phase I Environmental Site Assessment was to identify *(1)* the presence of *hazardous sub- stances* or *petroleum products* in, on, or at the *subject property* due to a *release* to the *environment; (2)* the likely presence of *hazardous substances* or *petroleum products* in, on, or at the *subject property* due to a *release* or likely *release* to the *environment;* or *(3)* the presence of *hazardous substances* or *petroleum products* in, on, or at the *subject property* under conditions that pose a *material threat* of a future *release* to the *environment*.

No other warranties are implied or expressed.

1.3 Significant Assumptions

There is a possibility that even with the proper application of these methodologies there may exist on the Subject Property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. Paul Humphrey, EP believes that the information obtained from the record review and the interviews concerning the site is reliable. However, Paul Humphrey, EP cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The methodologies of this assessment are not intended to produce all inclusive or comprehensive results, but rather to provide BF Central Valley Holdings LLC with information relating to the Subject Property.

1.4 Limitations and Exceptions

The findings and conclusions contain all of the limitations inherent in these methodologies that are referred to in ASTM 1527-21. Specific limitations and exceptions to this ESA are more specifically set forth below:

- A Phase I ESA interview with the previous owner of the Subject Property was not reasonably ascertainable. Consequently, information regarding the history and historical uses of the Subject Property obtained from an interview of the previous owner constitutes a data gap. Taken in consideration with the available information obtained in the course of preparing this report in conjunction with professional experience, there is no evidence to suggest that this data gap might alter the conclusions of this assessment.

1.5 Special Terms and Conditions

The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the client. No subsurface exploratory drilling or sampling was done under the scope of this work. Unless specifically stated otherwise in the report, no chemical analyses have been performed during the course of this ESA.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This is subject to the limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollections of those persons contacted.

1.6 Use Reliance

All reports, both verbal and written, are for the benefit of BF Central Valley Holdings LLC. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of Paul Humphrey, EP.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The Subject Property is located on the north side of West Paige Avenue approximately 0.38 miles east of South Pratt Avenue in Tulare, California. The Subject Property is identified as Tulare County Recorder's Office as APN 174-030-008 with the assigned address of 122 West Paige Avenue.

2.2 Site and Vicinity General Characteristics

The Subject Property is located in an agricultural area consisting of row crops and orchards.

2.3 Current Use of the Subject Property

The Subject Property consists of agricultural land and includes a shop, storage building, manufactured home, a detached garage, and farm equipment storage area.

2.4 Description of Site Improvements

The Subject Property includes a single parcel of land approximately 19.58± acres in size. The Subject Property consists of agricultural land with an approximately one acre area on the southeast portion of the Subject Property which includes a shop, storage building, manufactured home, a detached garage, and farm equipment storage area. The east enclosed area of the shop building is currently utilized for storage of a boat and appears to have formerly been utilized as the farm equipment maintenance shop. This portion of the shop building has a concrete floor. The central and west open area of the shop building is unpaved and does not appear to be in use other than for occasional equipment storage. Stained soil in the central and west open area of the shop building was observed at the time of the January 24, 2025 site visit. The on-site storage building is located northwest of the shop building. The storage building included a concrete floor and basic shelving. Stored materials within the storage building included tree stakes, irrigation drip lines, and two, 2.5 gallon plastic jugs of an unknown liquid. An irrigation water well with filtration system is located west of the storage building and shop. A domestic water well is located west of the manufactured home.

2.5 Current Use of Adjoining Properties

During the vicinity reconnaissance, Paul Humphrey, EP observed the following land use on properties in the immediate vicinity of the Subject Property.

North: Agricultural land

East: Agricultural land

South: West Paige Avenue followed by agricultural land

West: Agricultural land

3.0 USER PROVIDED INFORMATION

Pursuant to ASTM E1527-21, Paul Humphrey, EP requested the following site information from BF Central Valley Holdings LLC (User of this report).

3.1 Title Records

Paul Humphrey, EP requested title records from the User; however, a 50-year chain of title was not available at the Subject Property and was not provided for review.

3.2 Environmental Liens or Activity and Use Limitation

Paul Humphrey, EP requested information from the User regarding knowledge of environmental liens, activity and use limitations for the Subject Property. The User had no knowledge of any environmental liens or use or activity limitations.

3.3 Specialized Knowledge

Paul Humphrey, EP inquired with the User regarding any specialized knowledge of environmental conditions associated with the Subject Property. The User was not aware of any environmental conditions associated with the Subject Property.

3.4 Commonly Known or Reasonably Ascertainable Information

Paul Humphrey, EP inquired with the User regarding any commonly known or *reasonably ascertainable* information within the local community about the Subject Property that is material to *recognized environmental conditions* in connection with the Subject Property. The User had no reasonably ascertainable information within the local community about the Subject Property that is material to recognized environmental conditions in connection with the Subject Property.

3.5 Valuation Reduction for Environmental Issues

Paul Humphrey, EP inquired with the User regarding any knowledge of reductions in property value due to environmental issues. The User was not aware of any valuation reductions associated with the Subject Property.

3.6 Owner, Property Manager, and Occupant Information

The following information regarding the Owner, Subject Property Manager and Occupants was provided by the User and Key Site Manager.

Subject Property Owner:	Landon Fernandez
Subject Property Manager:	Landon Fernandez
Occupants:	Agricultural land, manufactured home - ranch foreman, equipment storage

3.7 Reason for Performing Phase I ESA

The purpose of this ESA was to identify existing or potential Recognized Environmental Conditions (as defined by ASTM Standard E-1527-21) in connection with the Subject Property. This ESA was also performed to permit the *User* to satisfy one of the requirements to qualify for the *innocent landowner*, *contiguous property owner*, or *bona fide prospective purchaser* limitations on scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) liability (hereinafter, the "*landowner liability protections*," or "*LLPs*"). ASTM Standard E-1527-13 constitutes "*all appropriate inquiry* into the previous ownership and uses of the *property* consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35)(B).

4.0 RECORDS REVIEW

4.1 Standard Environmental Record Sources

Information from standard Federal and state environmental record sources was provided through ERIS. Data from governmental agency lists are updated and integrated into one database, which is updated as these data are released. This integrated database also contains postal service data in order to enhance address matching. Records from one government source are compared to records from another to clarify any address ambiguities. The demographic and geographic information available provides assistance in identifying and managing risk. The accuracy of the geocoded locations is approximately +/-300 feet.

In some cases, location information supplied by the regulatory agencies is insufficient to allow the database companies to geocode facility locations. These facilities are listed under the unmappables ("orphan sites") section within the ERIS report. A review of the unmappable facilities indicated that none of these facilities are within the ASTM minimum search distance from the Subject Property.

Regulatory information from the database sources regarding possible recognized environmental conditions, within the ASTM minimum search distance from the Subject Property, was reviewed. Specific facilities are discussed below the Table if determined likely that a potential recognized environmental condition has resulted at the Subject Property from the listed facilities. Please refer to Appendix C for a complete listing.

Database	Search Distance (Miles)	Subject Property Listed	Total Number of Listings	Potential Environmental Concern to the Subject Property
NPL, PROPOSED NPL	1	No	0	
DELISTED NPL	0.5	No	0	
SEMS, SEMS ARCHIVE	0.5	No	0	
CERCLIS, CERCLIS NFRAP, CERCLIS LIENS	0.5	No	0	
RCRA CORRACTS	1	No	0	
RCRA-TSD	0.5	No	0	
RCRA LQG, SQG, CESQGs, VGN, NLR, NON GEN	0.25	No	0	
FED ENG, FED INST	TP	No	0	
ERNS	TP	No	0	
FED BROWNFIELDS	0.5	No	0	
STATE/TRIBAL HWS (includes RESPONSE, Envirostor, DELISTED ENVS)	1	No	1	No

Database	Search Distance (Miles)	Subject Property Listed	Total Number of Listings	Potential Environmental Concern to the Subject Property
SWF/LF	0.5	No	0	
HWP	1	No	0	
LDS	0.5	No	0	
LUST, DELISTED LST	0.5	No		
UST, UST SWEEPS	0.25	No	0	
UST CLOSURE	0.5	No	0	
HHSS, AST, DELISTED TNK, CERS TANK	0.25	No	2	No
DELISTED HAZ, LUR, HLUR, DEED, VCP	0.5	No	0	
CLEANUP SITES, DELISTED CLEANUP	0.5	No	0	
CERS HAZ	0.125	No		
DELISTED CTNK, HIST TANK	0.25	**Yes**	1	Subject Property listing discussed below Table.
TRIBAL LISTINGS	0.25-0.5	No	0	
DELISTED COUNTY, CUPA	0.25	**Yes**	2	Subject Property listing discussed below Table. Off-site: No
EMISSIONS	0.25	No	1	No
Additional State & Federal Listings	PO-1	**Yes**	4	Subject Property listings discussed below Table. Off-site: No

The Subject Property is identified as John Domingos Hay Harvesting with governmental database listings as one HAZNET, one CUPA, one FINDS/FRS, and one DELISTED CTNK. These listings are due to registration and tracking by State and local regulatory agencies as having storage and use of welding gases, diesel fuel, propane, motor oils and lubricants, hydraulic fluid, and off-site disposal of waste oils and waste filters associated with maintenance of farm equipment. The Subject Property was not identified in the database or in TCEHD records as having a release or spill or violations. TCEHD records included registration and permitting of Domingos Hay Harvesting as including a Hazardous Materials Business Plan, Exempt Tank, and Small Waste Generator. Records included on-site use of one, 10,000-gallon diesel aboveground storage tank (AST) and one 250-gallon waste oil AST. Personnel at TCEHD searched Subject Property records and found no evidence of the use of underground storage tanks. Based on records review, lack of an identified release, off-site disposal of waste, and type of listings as tracking purposes only, the database listings do not represent a recognized environmental condition.

The ERIS database identified off-site listings as one ENVIROSTOR, one AST, one CERS TANK, one CUPA, two INSP COMP ENF, and one EMISSIONS located within the prescribed search radii. Based on review of regulatory documentation, off-site location, and/or estimated direction of groundwater flow, these facilities do not represent a recognized environmental condition or concern.

4.2 Additional Environmental Record Sources

4.2.1 County Recorder/ Assessor

According to the Tulare County Recorder's Office, no environmentally related liens or deed restrictions have been recorded against the Subject Property.

4.2.2 Fire Officials

Records from the Tulare County Fire Department were reviewed for evidence indicating the presence of underground storage tanks and for the use of hazardous substances. No record was found for the Subject Property.

4.2.3 Building Department

Records from the Tulare County Building and Planning Department were reviewed for evidence indicating the developmental history of the Subject Property, and for the presence of documentation relative to underground storage tanks. No records indicative of the current or past presence of USTs were noted.

4.2.4 Other Agencies

Paul Humphrey, EP's January 24, 2025, review of SWRCB Geotracker records of the leaking underground fuel tank (LUFT) database indicated that no record of LUFTs are on file with the RWQCB for the Subject Property.

Paul Humphrey, EP's January 24, 2025, review of the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) Envirostor California cleanup sites database available via the DTSC Internet Website indicated that no records of cleanup sites are on file with the DTSC for the Subject Property.

4.3 Physical Setting Sources

4.3.1 Topography

The USGS, Tulare, California Quadrangle 7.5 minute series topographic map wase reviewed for this ESA. The map was published by the USGS in 1950, photorevised 1969. According to the contour lines on the topographic maps, the elevation of the Subject Property is approximately 275 feet above mean sea level (MSL). The contour lines in the area of the Subject Property indicate the area is sloping gently to the southwest. The Subject Property is depicted as having two small structures on the southeast portion of the site typical of a residence and a shop or barn type structure in the general area of the current manufactured home and shop observed at the time of the site visit.

4.3.2 Soils/Geology

The Subject Property is located within the Great Valley geomorphic province, a long structural trough situated between the Sierra Nevada Mountains to the east, the Coast Range Mountains to the west and Tehachapi Mountains to the south. In the Tulare area, the sediments consist of recent and older alluvium derived primarily from the Sierra Nevada Mountains. Older (Pleistocene) alluvium unconformably overlies Pliocene-Pleistocene continental and marine deposits. The valley basement, consisting of pre-Tertiary granitic and metamorphic rocks, underlies the clastic section at a depth in excess of 2,000 feet below ground surface. Shallow soil stratigraphy in the Tulare County area is primarily sandy soils and sand-silt combination soils.

4.3.3 Hydrology

The site is located in the San Joaquin Valley groundwater basin, which is part of the San Joaquin Basin Hydrologic Study Area (HSA). Twenty-six ground-water basins and areas of potential groundwater storage have been identified in the San Joaquin Basin HSA. The HSA is bounded by the Sacramento-San Joaquin Delta to the north, the Sierra Nevada to the east, the Tehachapi Mountains to the south, and the Coastal Ranges to the west. Groundwater in the vicinity of the site is found within the Central Valley regional aquifer system, an unconfined to semi-confined aquifer system within the older alluvium and deeper continental deposits. According to the online database known as Geotracker maintained by the SWRCB, groundwater beneath a site approximately 0.6 miles east of the Subject Property was at a depth of 150 in 2015 and direction of flow was identified as west southwest.

No settling ponds, surface impoundments, wetlands or natural catchbasins were observed at the Subject Property during this investigation.

4.3.4 Flood Zone Information

A review of the Flood Insurance Rate Maps, published by the Federal Emergency Management Agency, was performed. According to Panel Number 06107C1275E, dated June 16, 2009, the Subject Property is located in Flood Zone X.

4.3.5 Oil and Gas Exploration

The on-site reconnaissance addressed oil and gas exploration at the Subject Property. According to the California Department of Conservation Geologic Energy Management, no operating or abandoned oil or gas wells are on or adjacent to the Subject Property.

4.3.6 Vapor Encroachment

A Tier 1 Vapor Encroachment Screen (VES) pursuant to ASTM E2600-10 was performed as part of this assessment to determine whether a potential *vapor encroachment condition* (VEC) exists at the Subject Property. The VES included the review of reasonably ascertainable information for the Subject Property and nearby properties. During the course of this assessment, a reasonable probability was not identified to indicate that a VEC exists at the Subject Property.

4.4 Historical Use Information: Subject Property and Adjoining Properties

Based on available historical documentation, the Subject Property consisted of agricultural land with two rural residences, outbuildings, and a barn type structure from at least 1937 up to the late-1960s. One of the on-site residences was removed from the site by the early to mid-1970s. The Subject Property appears to have been in use as agricultural land and included a residence and a harvesting company on the southeast portion of the site by the mid to late 1980s. The harvesting company appears to have been active on the southeast portion of the Subject Property from the mid to late 1980s up to approximately 2017 and activities included equipment maintenance and storage. Subject Property use has consisted of agricultural land, a residence, occasional use for farm equipment storage, and occasional general storage since the late 2010s.

The adjoining properties consisted of agricultural land and a few rural residences from at least 1937 up to the late 1960s and agricultural land since the mid-1970s.

4.4.1 Aerial Photographs

Available aerial photographs dated 1937, 1946, 1952, 1966, 1969, 1974, 1984, 1987, 1994, 2003, 2004, 2005, 2006, 2009, 2010, 2012, 2014, 2016, 2018, 2020, and 2023, from ERIS were reviewed for this ESA. Copies of selected photographs are included in Appendix B-1 of this report. The photographs are discussed below:

Date:	1937
Scale:	1” = 500’
Photo ID:	ASCS
Description:	This photograph depicts the Subject Property as including a rural residence, outbuildings, and a barn type structure on the southeast portion of the site, a rural residence and outbuildings on the southwest area of the site, and agricultural land on the remaining areas. The north and east adjoining properties appear as agricultural land. The south adjoining property appears as a roadway followed by agricultural land. The west adjoining property appears as a rural residence and agricultural land.

Date:	1946
Scale:	1” = 500’
Photo ID:	Fairchild
Description:	This photograph depicts the Subject Property and the north, east, and west adjoining properties as in the 1937 photograph. The south adjoining property appears as a roadway followed by agricultural land and a rural residence.

Date:	1952
Scale:	1” = 500’
Photo ID:	ASCS
Description:	This photograph depicts the Subject Property and adjoining properties as in the 1946 photograph.

Date:	1966

Scale: 1” = 500’
Photo ID: MD
Description: This photograph depicts the Subject Property as including a rural residence, one outbuilding, and a barn type structure on the southeast portion of the site and agricultural land on the remaining areas. The adjoining properties appear as in the 1952 photograph.

Date: 1969
Scale: 1” = 500’
Photo ID: USGS
Description: This photograph depicts the Subject Property and the north, east, and west adjoining properties similar to the 1966 photograph. A small structure has been added northwest of the previously noted barn-like structure. The south adjoining property appears as a roadway followed by agricultural land.

Date: 1974
Scale: 1” = 500’
Photo ID: NASA
Description: This photograph depicts the Subject Property as including a rural residence, one outbuilding, a shop type structure, and small structure northwest of the shop type structure all on the southeast portion of the site and agricultural land on the remaining areas. The north, east, and south adjoining properties appear as in the 1969 photograph. The west adjoining property appears as agricultural land,

Date: 1984
Scale: 1” = 500’
Photo ID: USGS
Description: This photograph depicts the Subject Property as agricultural land. The adjoining properties appear as in the 1974 photograph.

Date: 1987
Scale: 1” = 500’
Photo ID: USGS
Description: This photograph depicts the Subject Property and adjoining properties as in the 1984 photograph.

Date: 1994
Scale: 1” = 500’
Photo ID: USGS
Description: This photograph depicts the Subject Property and the adjoining properties as in the 1987 photograph.

Date: 2003, 2004, 2005, 2006, 2009, 2010, 2012, 2014
Scale: 1” = 500’

Photo ID: USDA
Description: These photographs depict the Subject Property and adjoining properties as in the 1994 photograph.

Date: 2016, 2018, 2020
Scale: 1" = 500'
Photo ID: USDA
Description: These photographs depict the Subject Property as having a building in the area of the current manufactured home and the current shop and storage building all on the southeast area of the site and agricultural land on the remaining areas. The adjoining properties appear as in the 2003, 2004, 2005, 2006, 2009, 2010, 2012, and 2014 photographs.

Date: 2023
Scale: 1" = 500'
Photo ID: MAXAR
Description: This photograph depicts the Subject Property and adjoining properties as in the 2016, 2018, and 2020 photographs.

4.4.2 Fire Insurance Maps

Historical Sanborn Fire Insurance maps were reviewed online at http://www.spl.org/. Fire insurance maps, which commonly date back to the 1800s, are typically reviewed in order to evaluate whether past usage or construction on the Property or within the near vicinity is environmentally noteworthy. Fire insurance map coverage of the area of the Property was not identified.

4.4.3 City Directories

Historical City directories published by Haines were reviewed at the Tulare County Library in Visalia, California for past names and business that were listed for the Property. The findings are presented in the following table:

YEAR	ON-SITE
1968	No listing
1972	Residence listing
1978	Two residence listings
1983	Residence listing
1989, 1993, 1998, 2003, 2008	Residence listing, John Domingos Harvesting
2014, 2018	Residence listing

4.4.4 Historical Topographic Maps

The review of historical topographic maps was not reviewed for this study. Historical use of the Subject Property was researched using other standard historical sources.

4.4.5 Additional Historical Record Sources

Additional historical record sources were not reviewed.

4.4.6 Prior Assessment Reports

No prior reports or relevant documentation in association with the Subject Property were made available to Paul Humphrey, EP during the course of this assessment.

5.0 SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

The Subject Property was inspected by Paul Humphrey on January 24, 2025. The weather at the time of the site visit was clear and approximately 60 degrees.

5.2 General Site Setting

The Subject Property is located within an agricultural area the north side of West Paige Avenue approximately 0.38 miles east of South Pratt Avenue in Tulare, California.

5.3 Exterior Observations

5.3.1 Solid Waste Disposal

Solid waste generated on the Subject Property appears to be limited to household waste from the on-site residence. No indication of potentially hazardous material disposal was noted during the site reconnaissance.

5.3.2 Surface Water Drainage

The Subject Property consists of agricultural land and open soil areas around the residence, shop, and storage building which has no stormwater drainage system. Drainage appears sufficient as no areas of ponding or standing water were noted during the site visit.

5.3.3 Wells and Cisterns

The Subject Property included one irrigation water well located west of the storage building and shop and a domestic water well located west of the manufactured home. If the wells are not to be used, they should be properly destroyed in accordance with State and local guidelines.

No aboveground evidence of cisterns was observed during the site reconnaissance.

5.3.4 Wastewater

No indications of industrial wastewater disposal or treatment facilities were observed during the onsite reconnaissance.

5.3.5 Additional Site Observations

No additional relevant general site characteristics of an environmental concern were observed.

5.4 Interior Observations

Viewed portions of the buildings included the interior of the shop and storage building and the interiors of the garage area and storage awning of the manufactured home.

5.5 Potential Environmental Conditions

5.5.1 Hazardous Substances and Petroleum Products Used or Stored at the Site

Two, 2.5 gallon plastic jugs of an unknown liquid were observed on the shelves within the storage building. No stains, spills, or evidence of a release was observed within the storage building. Discussion of the storage building as a REC based on likely historical use for agricultural chemical, hazardous substances, and petroleum product storage is included in the Executive Summary.

5.5.1.1 Unlabeled Containers and Drums

Discussion of two, unlabeled 2.5 gallon plastic jugs is included in Section 5.5.1. No unlabeled drums were observed during the site reconnaissance.

5.5.1.2 Disposal Locations of Regulated/ Hazardous Waste

No obvious indications of hazardous waste disposal were observed on the Subject Property or were indicated during interviews.

5.5.2 Evidence of Releases

Stained soil in the central and west open area of the shop building was observed at the time of the January 24, 2025, site visit. The source of the staining was not identified. Based on historical occupancy of this portion of the Subject Property by a harvesting operation from the mid to late 1980s up to approximately 2017, the staining of the soil is likely associated with former equipment maintenance and storage. The stained soil represents a REC.

No other obvious indications of hazardous material or petroleum product releases, such as stained areas or stressed vegetation, was observed during the site reconnaissance or reported during interviews.

5.5.3 Polychlorinated Biphenyls (PCBs)

Older transformers and other electrical equipment could contain polychlorinated biphenyls (PCBs) at a level that subjects them to regulation by the U.S. EPA. PCBs in electrical equipment are controlled by United States Environmental Protection Agency regulations 40 CFR, Part 761. Under the regulations, there are three categories into which electrical equipment can be classified:

- Less than 50 parts per million (PPM) of PCBs – "*Non-PCB" transformer*
- 50 ppm-500 ppm – "*PCB-Contaminated" electrical equipment*
- Greater than 500 ppm – "*PCB" transformer*

No potential PCB-containing equipment such as transformers, oil-filled switches, hoists, lifts, dock levelers, hydraulic elevators, etc., is present.

5.5.4 Landfills

No evidence of on-site landfilling was observed or reported during the site reconnaissance.

5.5.5 Pits, Ponds, Lagoons, Sumps, and Catch Basins

No evidence of on-site pits, ponds, lagoons, sumps or catch basins was observed or reported during the site reconnaissance.

5.5.6 On-Site ASTs and USTs

No evidence of ASTs or USTs was observed during the Subject Property reconnaissance or reported during interviews.

5.5.7 Radiological Hazards

No radiological substances or equipment were observed or reported stored on the subject site.

5.5.8 Drinking Water

Drinking water is provided to the Subject Property from a domestic water well located west of the manufactured home. If the well is not to be used, it should be properly destroyed in accordance with State and local guidelines. Water sampling was not conducted at the site to verify water quality.

5.5.9 Additional Hazard Observations

No additional hazards were observed on the site.

5.5.10 Asbestos-Containing Materials (ACM)

An evaluation of ACM was not included in the scope of services and was not conducted.

5.5.11 Radon

The US EPA has prepared a map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three Radon Zones, Zone 1 being those areas with the average predicted indoor radon concentration in residential dwellings exceeding the EPA Action limit of 4.0 picoCuries per Liter (pCi/L). It is important to note that the EPA has found homes with elevated levels of radon in all three zones, and the EPA recommends site specific testing in order to determine radon levels at a specific location. However, the map does give a valuable indication of the propensity of radon gas accumulation in structures. Review of the EPA Map of Radon Zones places the Subject Property in Zone 2, where average predicted radon levels are between 2.0 and 4.0 pCi/L.

5.5.12 Lead-Based Paint

An evaluation of lead-based paint was not included in the scope of services and was not conducted.

5.5.13 Mold Evaluation

A mold evaluation was not included in the scope of services and was not conducted.

6.0 INTERVIEWS

6.1 Interview with Owner

The owner of the Subject Property was identified as Landon Fernandes. Mr. Fernandes was not aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the Subject Property; any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Subject Property; or any notices from a governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

6.2 Interview with Site Manager

See Section 6.1 Above.

6.3 Interview with Occupants

See Section 6.1 Above.

6.4 Interview with Local Government Officials

An interview was conducted with the Tulare County Environmental Health Department. According to TCEHD staff, records were identified for the Subject Property and provided for review. Discussion of pertinent records is included in the Executive Summary and Section 4.1.

An interview was conducted with a clerk at the Tulare County Planning and Development Department. According to the clerk, no records of environmental concern were identified for the Subject Property.

An interview was conducted with the Tulare County Fire Department (CalFire). According to CalFire staff, no records were identified for the Subject Property.

6.5 Interview with Others

Additional interviews were not conducted.

7.0 FINDINGS AND CONCLUSIONS

7.1 Findings

7.1.1 On-Site Environmental Conditions

On-site recognized environmental conditions were identified during the course of this assessment.

7.1.2 Off-Site Environmental Conditions

No off-site RECs were identified that were considered likely to impact the Subject Property.

7.1.3 Controlled Recognized Environmental Conditions

No on-site CRECs were identified during the course of this assessment.

7.1.4 Historical Recognized Environmental Conditions

No on-site HRECs were identified during the course of this assessment.

7.1.5 De Minimis Environmental Conditions

No *de minimis* environmental conditions were identified in connection with the Subject Property during the course of this assessment.

7.2 Opinion

Based on our professional opinion, two recognized environmental conditions in connection with the Subject Property were identified during the course of this assessment.

7.3 Conclusions

Paul Humphrey, EP has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of the property identified as APN 174-030-008, Tulare, California, the Subject Property. Any exceptions to or deletions from this practice are described in Section 1.4 of this report.

Paul Humphrey, EP's assessment has revealed the following RECs associated with the Subject Property or nearby properties:

- Stained soil in the central and west open area of the shop building was observed at the time of the January 24, 2025, site visit. The source of the staining was not identified. Based on historical occupancy of this portion of the Subject Property by a harvesting operation from the mid to late 1980s up to approximately 2017, the staining of the soil is likely associated with former equipment maintenance and storage. The stained soil represents a REC.

- Based on the type of construction and location, the storage building located northwest of the on-site shop was possibly utilized for storage of agricultural chemicals, hazardous substances, and/or petroleum products. At the time of the January 24, 2025, site visit, two, 2.5 gallon plastic jugs of an unknown liquid were observed on the shelves within the storage building. No stains, spills, or evidence of a release was observed within the storage building. The likely historical storage of agricultural chemicals, hazardous substances, and/or petroleum products, is considered a REC.

Paul Humphrey, EP's investigation has revealed the following BERs associated with the Subject Property or nearby properties:

- The Subject Property included one irrigation water well located west of the storage building and shop and a domestic water well located west of the manufactured home. If the wells are not to be used, they should be properly destroyed in accordance with State and local guidelines.

- The on-site manufactured home is connected to a septic system. No visual indication of the septic system was observed during Paul Humphrey, EP's site reconnaissance. The septic system should be properly destroyed in accordance with State and local guidelines prior to redevelopment of the Subject Property.

- The Subject Property was historically and is currently used for agricultural purposes. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used onsite. Based on Paul Humphrey, EP's experience, during previous site development activities, near surface soils (where residual agricultural chemical concentrations would have most likely been present, if at all) are likely generally mixed with fill material or disturbed during grading. Also, it is common that engineered fill material is placed over underlying soils as part of site development activities. These additional variables serve to further reduce the potential for exposure to residual agricultural chemicals (if any). Based on these reasons, Paul Humphrey, EP concludes that the possible use of agricultural chemicals is not expected to represent a significant environmental concern. If redevelopment activities for residential use are planned, it should be determined whether sampling relating to the former agricultural use is required by the local planning department or other applicable oversight agency.

Paul Humphrey, EP's assessment has revealed the following Non-ASTM considerations associated with the Subject Property:

- Due to the age of the Subject Property buildings, there is a potential that asbestos containing materials may be present.

- Due to the age of the Subject Property buildings, there is a potential that lead-based paint may be present.

7.4 Recommendations

Based on the findings of this ESA, Paul Humphrey, EP recommends the following:

- A Phase II investigation should be conducted to evaluate the conditions of the Subject Property in the area of stained soil in the central and west open portion of the shop building.

- A Phase II subsurface investigation should be conducted to evaluate the conditions of the Subject Property beneath and around the storage building located northwest of the on-site shop. Contents of the two, 2.5 gallon plastic jugs observed on the shelves within the storage building should be identified for proper off-site disposal.

7.5 Deviations

This Phase I ESA substantially complies with the scope of services and ASTM 1527-21 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), as amended, except for exceptions and/or limiting conditions as discussed in Section 1.4.

8.0 REFERENCES

American Society for Testing and Materials, *Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*, ASTM Designation: E2600

American Society for Testing and Materials, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, ASTM Designation: E1527-13

American Society for Testing and Materials, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, ASTM Designation: E1527-21

ERIS, Aerial Photograph Report, 122 W Paige Ave, Tulare, California, Job number 25-14

ERIS, Radius Database Report, 122 W Paige Ave, Tulare, California, Job number 25-14

State of California Department of Conservation Geologic Energy Management web page, https://maps.conservation.ca.gov/oilgas/

State of California Department of Water Resources Division of Planning and Local Assistance, Groundwater Level Data Retrieval Map Interface web page, http://well.water.ca.gov/map/map.html

United States Department of Agriculture, Soil Conservation Service Soil Survey Tulare County, California, 1986

US Environmental Protection Agency, Map of Radon Zones web page, http://www.epa.gov/iaq/radon/zonemap.html

US Environmental Protection Agency, Office of Water web page, http://www.epa.gov/ogwdw000/swp/ssa/ssahome.html

U.S. Geological Survey, Tulare, California Topographic Quadrangle, 1950, photorevised 1969

Agencies Contacted:

Tulare County Building and Planning Department

Tulare County Fire Department

Tulare County Assessor's Office

Tulare County Department of Environmental Health

9.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

I declare that, to the best of my professional knowledge and belief, I have met the definition of *Environmental professional* as defined in §312.10 of 40 CFR 312" and have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject *property*. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Paul Humphrey, EP
Environmental Professional

10.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

10.1 Definition of an Environmental Professional

An Environmental Professional means: (1) a person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding conditions indicative of releases or threatened re- leases (see § 312.l(c)) on, at, in, or to a property, sufficient to meet the objectives and performance factors in §§ 312.20(e) and (t). (2) Such a person must: (i) hold a current Professional Engineer's or Professional Geologist's license or registration from a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) and have the equivalent of three (3) years of full-time relevant experience; or (ii) be licensed or certified by the federal government, a state, tribe, or U.S. territory (or the Commonwealth of Puerto Rico) to perform environmental inquiries as defined in § 312.21 and have the equivalent of three (3) years of full-time relevant experience; or (iii) have a Baccalaureate or higher degree from an accredited institution of higher education in a discipline of engineering or science and the equivalent of five (5) years of full-time relevant experience; or (iv) have the equivalent of ten (10) years of full-time relevant experience. (3) An environmental professional should remain cur- rent in his or her field through participation in continuing education or other activities. (4) The definition of environmental professional pro- vided above does not preempt state professional licensing or registration requirements such as those for a professional geologist, engineer, or site remediation professional. Before commencing work, a person should determine the applicability of state professional licensing or registration Jaws to the activities to be undertaken as part of the inquiry identified in § 312.21(b). (5) A person who does not qualify as an environmental professional under the foregoing definition may assist in the conduct of all appropriate inquiries in accordance with this part if such person is under the supervision or responsible charge of a person meeting the definition of an environmental professional provided above when conducting such activities.

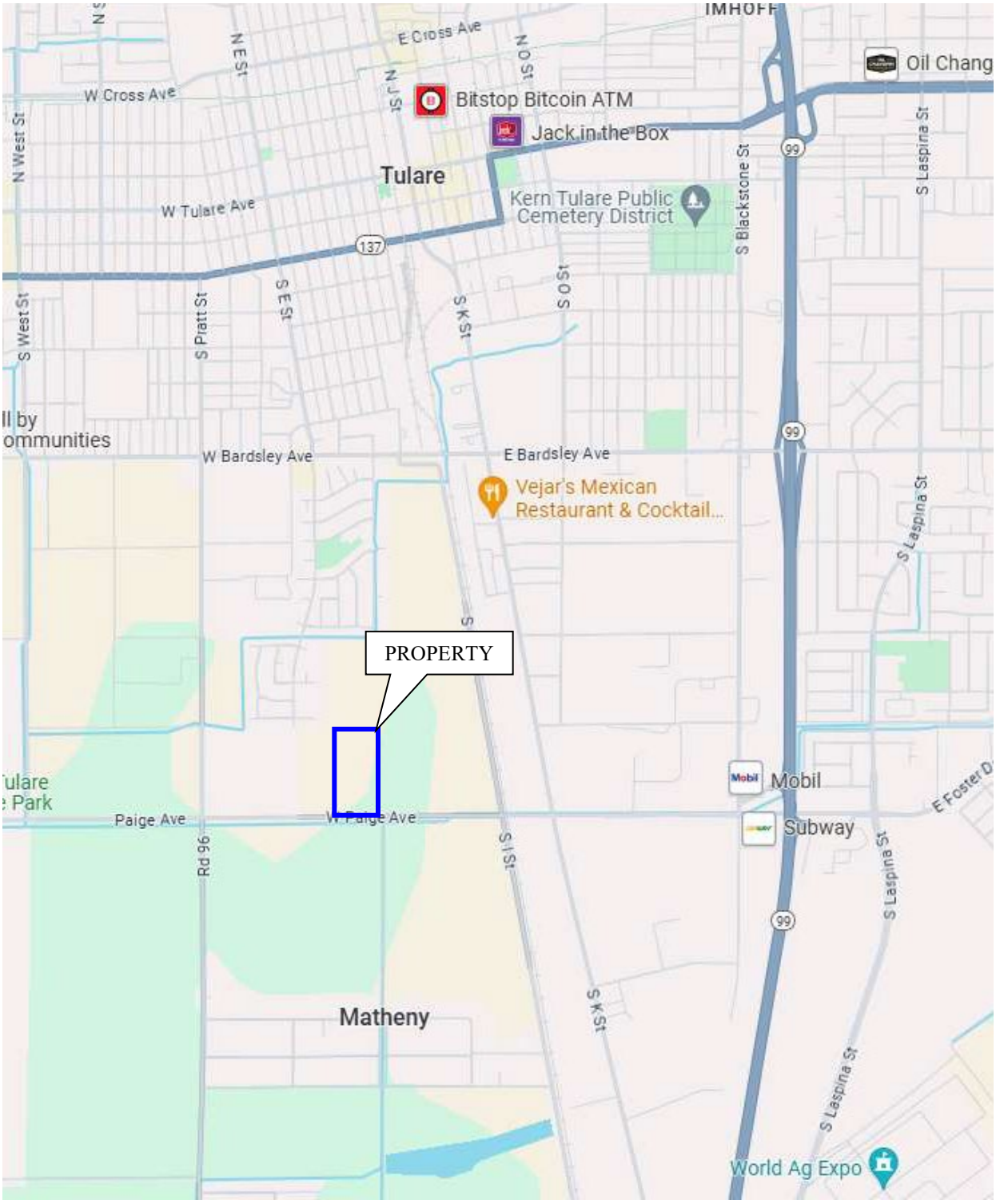
10.2 Relevant Experience

Relevant experience, as used in the definition of environmental professional in this section, means: participation in the performance of all appropriate inquiries investigations, environmental site assessments, or other site investigations that may include environmental analyses, investigations, and remediation which involve the understanding of surface and sub- surface environmental conditions and the processes used to evaluate these conditions and for which professional judgment was used to develop opinions regarding conditions indicative of releases or threatened releases (see § 312.l(c)) to the subject property.

Resumes for the Environmental Professionals involved in this project are included in Appendix G.

FIGURES

SITE LOCATION MAP
SITE PLAN
SITE TOPOGRAPHIC MAP



SITE VICINITY MAP	⇧ NORTH
PAUL HUMPHREY, EP **7402 E. CLINTON AVENUE** **FRESNO, CA 93737** **(559) 977-9813**	Site: Proposed Development Site Address: APN 174-030-008 Tulare, CA Project Number: 25-14

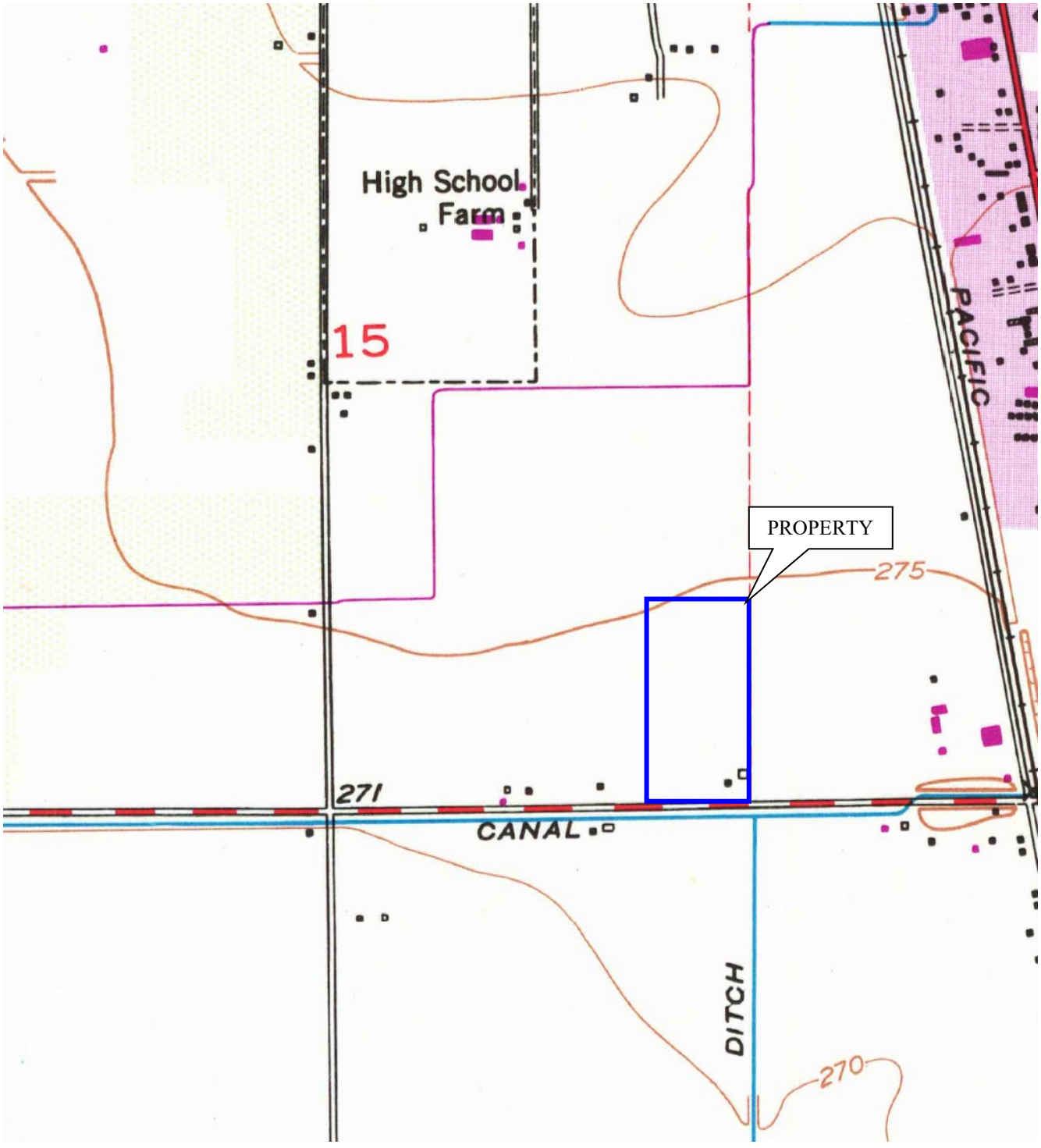


SITE PLAN

⇧ NORTH
Not to scale

PAUL HUMPHREY, EP
7402 E. CLINTON AVENUE
FRESNO, CA 93737
(559) 977-9813

Site:	Proposed Development
Site Address:	APN 174-030-008
	Tulare, CA
Project Number:	25-14



PAUL HUMPHREY, EP
7402 E. CLINTON AVENUE
FRESNO, CA 93737
(559) 977-9813

TOPOGRAPHIC MAP

Source: U.S.G.S. 7.5 Minute Topographic Map
Tulare, CA, Quadrangle, 1950, photorevised 1969

⇑
N

APPENDIX A

SITE PHOTOGRAPHS



1. South face of shop located on southeast area of the Subject Property.



2. Open awning area of shop.



3. Interior of the shop.



4. Storage building northwest of the shop.



5. Shelving in east area of storage building.



6. Shelving in west area of storage building.



7. Manufactured home on southeast portion of Subject Property.



8. Garage north of the manufactured home.



9. Storage area north of the manufactured home.



10. Domestic well at west side of manufactured home.



11. Irrigation well and filtration system located west of the storge building and shop.



12. Central east portion of the Subject Property.



13. Northeast portion of Subject Property.



14. Central west portion of Subject Property.



15. North adjoining agricultural land.



16. East adjoining agricultural land.



17. View across Paige Avenue of south adjoining agricultural land.



18. West adjoining agricultural land.

APPENDIX B

HISTORICAL RESEARCH DOCUMENTATION

EXHIBIT B-1

AERIAL PHOTOGRAPHS

HISTORICAL AERIALS

Project Property: Paige Ave
W Paige Avenue
Tulare CA 93274

Project No: 25-14

Requested By: Paul Humphrey, REPA

Order No: 24052300815

Date Completed: January 20, 2025

Aerial Maps included in this report are produced by the sources listed above and are to be used for research purposes including a phase I report. Maps are not to be resold as commercial property. ERIS provides no warranty of accuracy or liability. The information contained in this report has been produced using aerial photos listed in above sources by ERIS Information Inc. (in the US) and ERIS Information Limited Partnership (in Canada), both doing business as 'ERIS'. The maps contained in this report do not purport to be and do not constitute a guarantee of the accuracy of the information contained herein. Although ERIS has endeavored to present information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Date	Source	Scale	Comments
2023	Maxar Technologies	1" = 500'	
2020	United States Department of Agriculture	1" = 500'	
2018	United States Department of Agriculture	1" = 500'	
2016	United States Department of Agriculture	1" = 500'	
2014	United States Department of Agriculture	1" = 500'	
2012	United States Department of Agriculture	1" = 500'	
2010	United States Department of Agriculture	1" = 500'	
2009	United States Department of Agriculture	1" = 500'	
2006	United States Department of Agriculture	1" = 500'	
2005	United States Department of Agriculture	1" = 500'	
2004	United States Department of Agriculture	1" = 500'	
2003	United States Department of Agriculture	1" = 500'	
1994	United States Geological Survey	1" = 500'	
1987	United States Geological Survey	1" = 500'	
1984	United States Geological Survey	1" = 500'	
1974	National Aeronautics And Space Admin	1" = 500'	
1969	United States Geological Survey	1" = 500'	
1966	Mcdonnell Douglas	1" = 500'	
1952	Agricultural Stabilization & Conserv. Service	1" = 500'	
1946	Fairchild	1" = 500'	
1937	Agricultural Stabilization & Conserv. Service	1" = 500'	

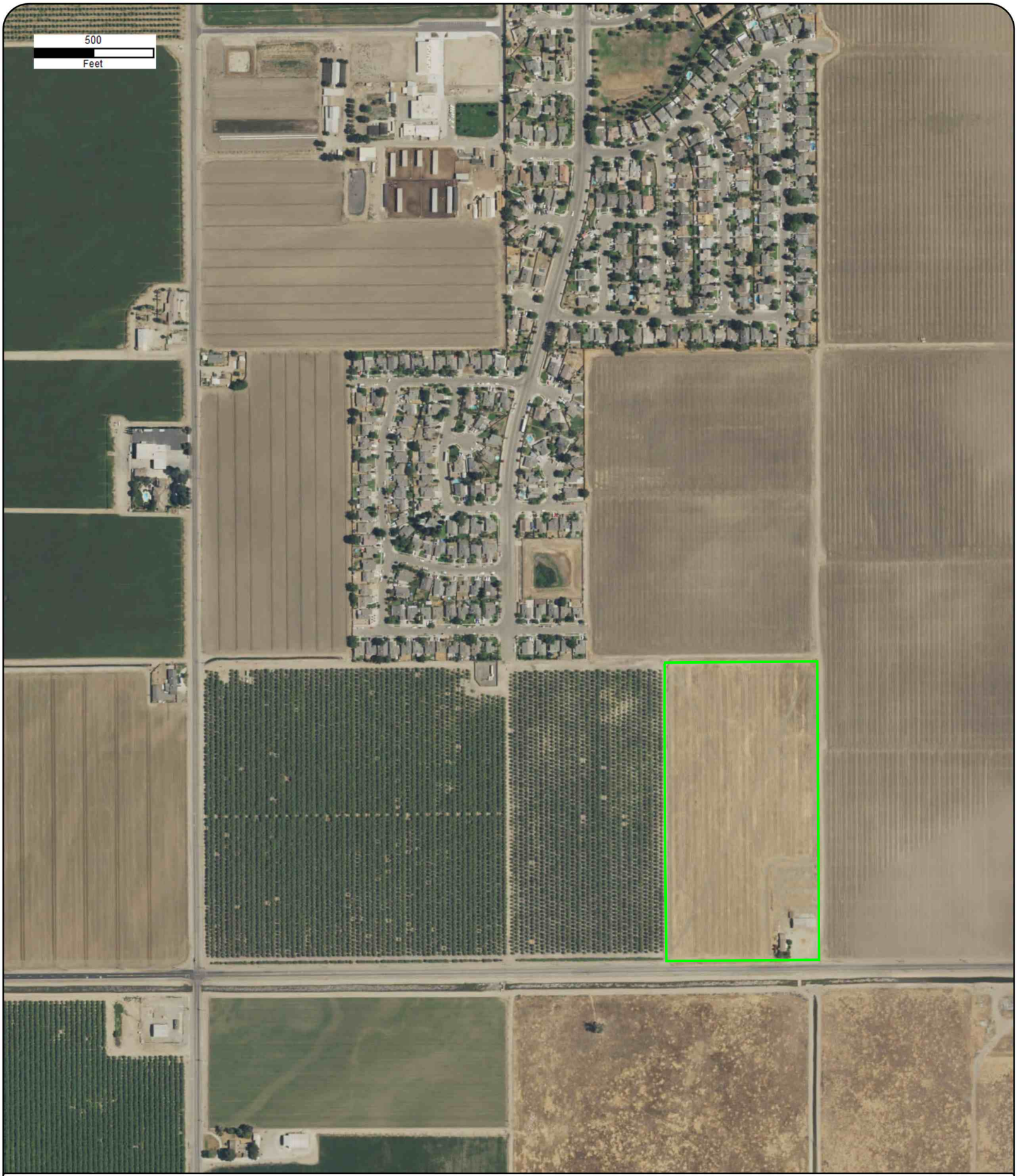


Year: 2023
Source: MAXAR
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS

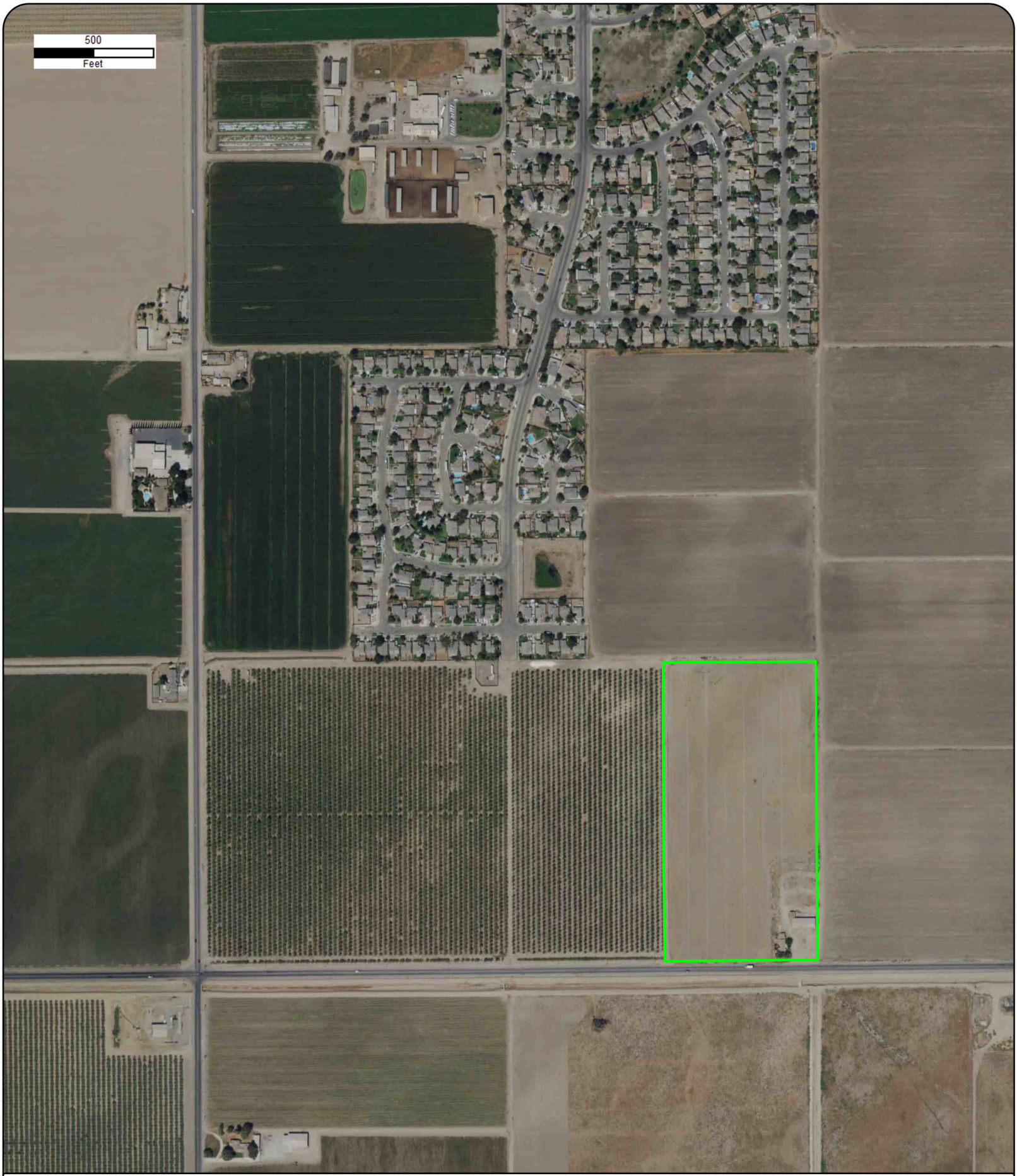


Year: 2020
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2018
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS

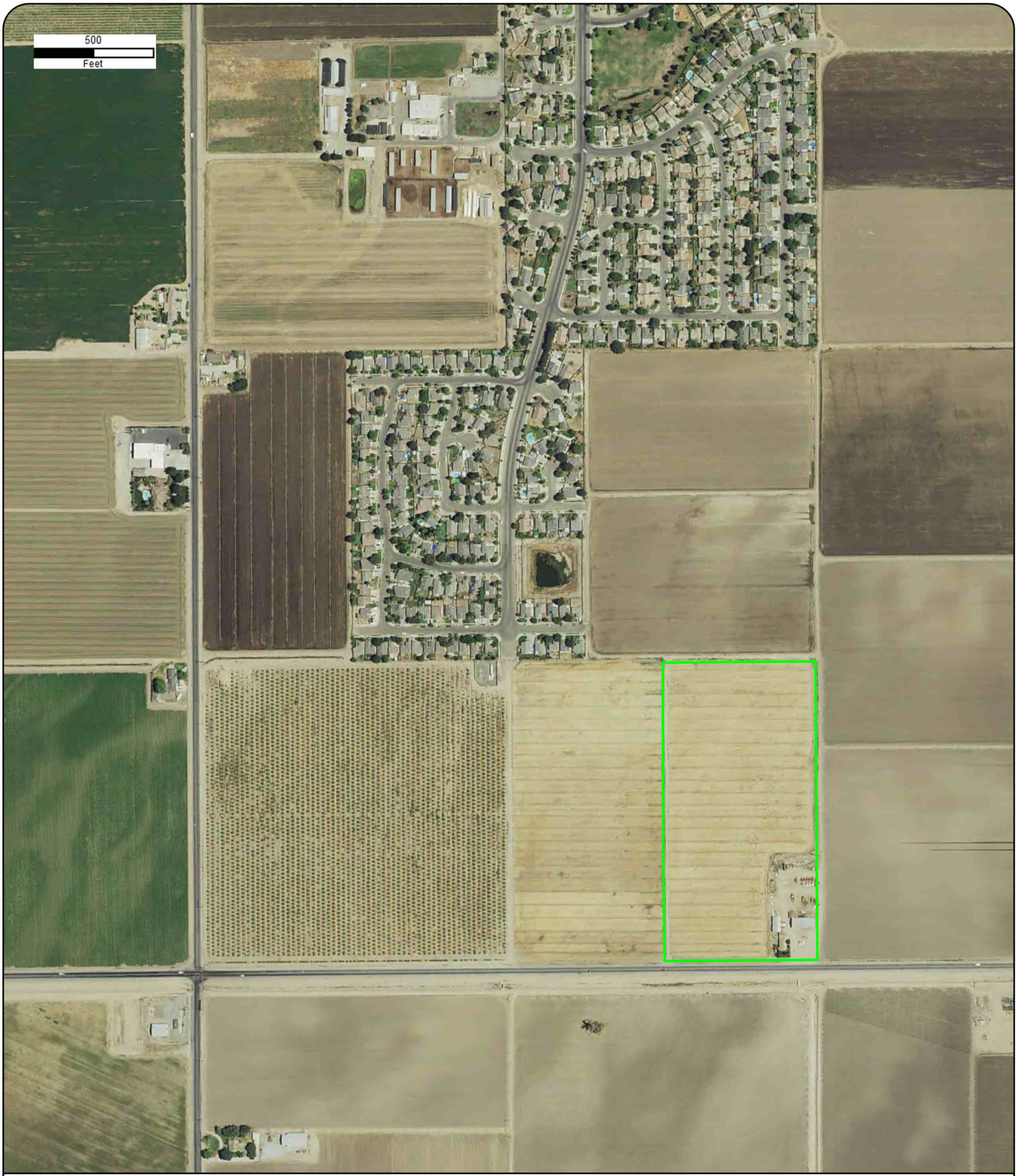


Year: 2016
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2014
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2012
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2010
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2009
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2006
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2005
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2004
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 2003
Source: USDA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 1994
Source: USGS
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS

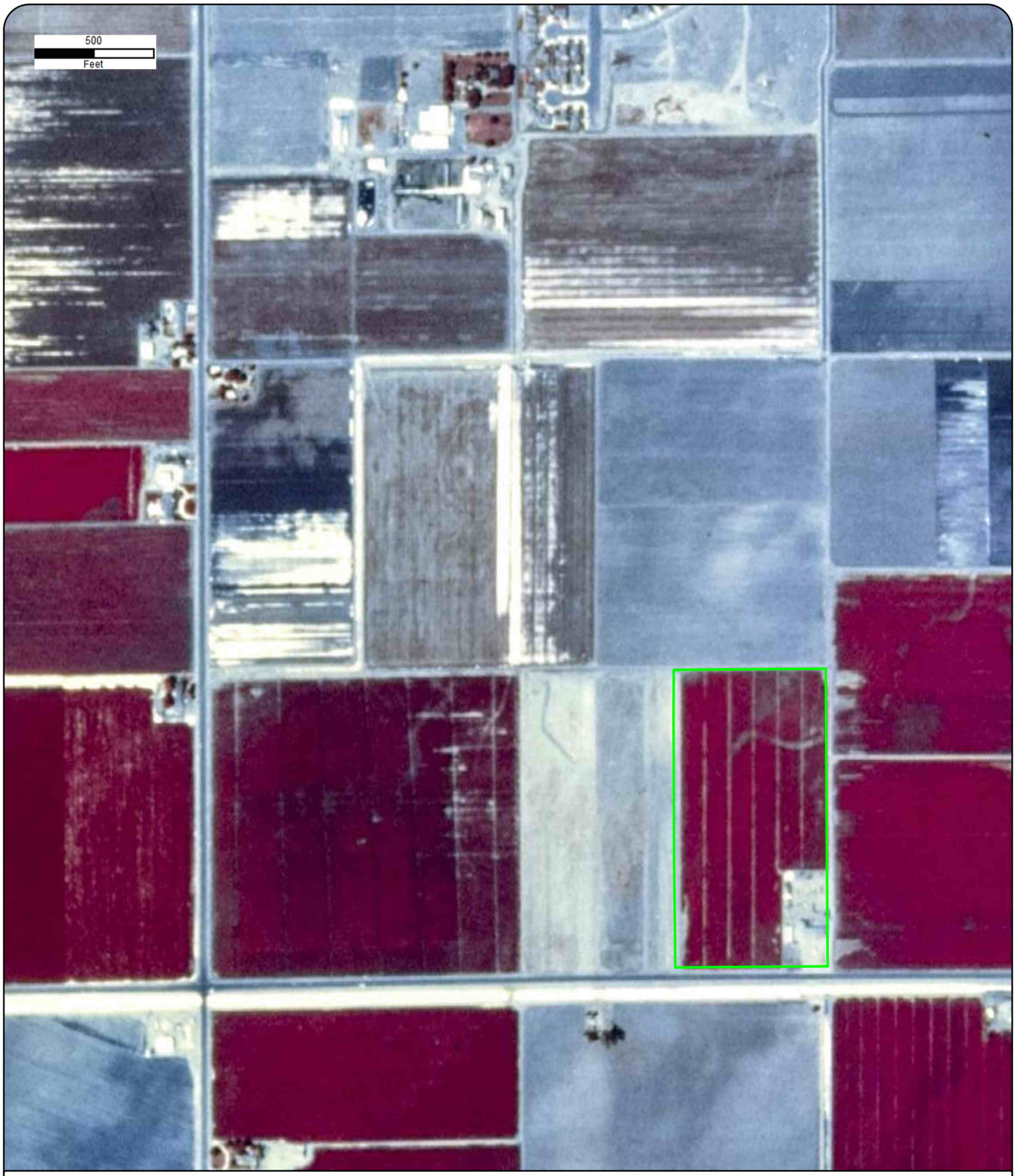


Year: 1987
Source: USGS
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 1984
Source: USGS
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 1974
Source: NASA
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 1969
Source: USGS
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 1966
Source: MCDAC
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 1952
Source: ASCS
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS

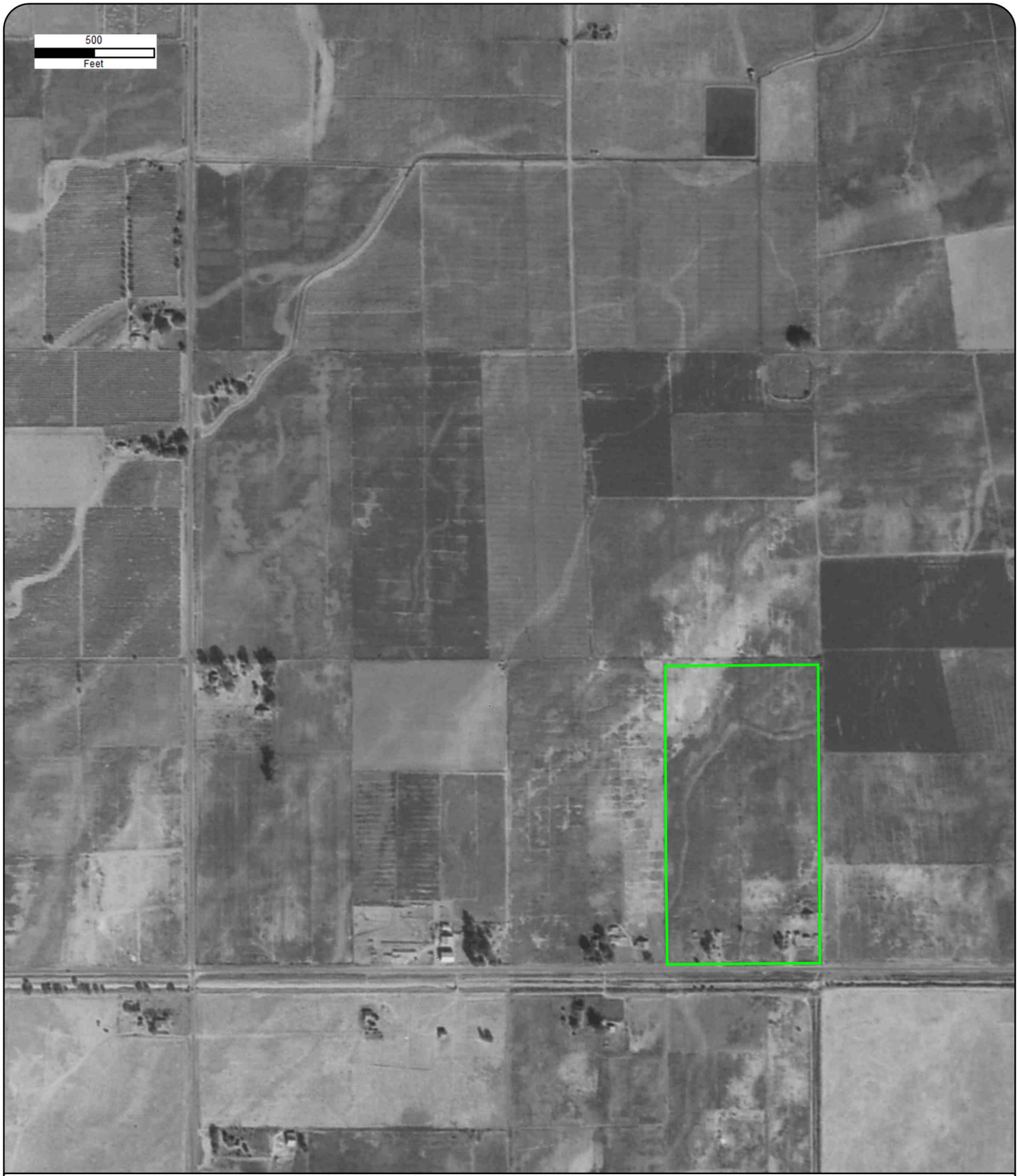


Year: 1946
Source: FAIRCHILD
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS



Year: 1937
Source: ASCS
Scale: 1" = 500'
Comment:

Address: NEC S Pratt & W Paige, Tulare, CA
Approx Center: -119.35304923,36.18509207

Order No: 24052300815

ERIS

APPENDIX C

REGULATORY RECORDS DOCUMENTATION

EXHIBIT C-1

MAPPED DATABASE REPORT

DATABASE REPORT

Project Property:	*Fernandes Subdivision* *122 W Paige Ave* *Tulare CA 93274*
Project No:	*25-14*
Report Type:	*Database Report*
Order No:	*25011500707*
Requested by:	*Paul Humphrey, REPA*
Date Completed:	*January 17, 2025*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

Table of Contents

Table of Contents.....2
Executive Summary.....3
Executive Summary: Report Summary.....4
Executive Summary: Site Report Summary - Project Property.....9
Executive Summary: Site Report Summary - Surrounding Properties.....10
Executive Summary: Summary by Data Source.....11
Map.....14
Aerial.....17
Topographic Map.....18
Detail Report.....19
Unplottable Summary.....27
Unplottable Report.....28
Appendix: Database Descriptions.....29
Definitions.....48

Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY

Reliance on information in Report: This report DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as database review of environmental records.

License for use of information in Report: No page of this report can be used without this cover page, this notice and the project property identifier. The information in Report(s) may not be modified or re-sold.

Your Liability for misuse: Using this Service and/or its reports in a manner contrary to this Notice or your agreement will be in breach of copyright and contract and ERIS may obtain damages for such mis-use, including damages caused to third parties, and gives ERIS the right to terminate your account, rescind your license to any previous reports and to bar you from future use of the Service.

No warranty of Accuracy or Liability for ERIS: The information contained in this report has been produced by ERIS Information Inc. ("ERIS") using various sources of information, including information provided by Federal and State government departments. The report applies only to the address and up to the date specified on the cover of this report, and any alterations or deviation from this description will require a new report. This report and the data contained herein does not purport to be and does not constitute a guarantee of the accuracy of the information contained herein and does not constitute a legal opinion nor medical advice. Although ERIS has endeavored to present you with information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

Trademark and Copyright: You may not use the ERIS trademarks or attribute any work to ERIS other than as outlined above. This Service and Report (s) are protected by copyright owned by ERIS Information Inc. Copyright in data used in the Service or Report(s) (the "Data") is owned by ERIS or its licensors. The Service, Report(s) and Data may not be copied or reproduced in whole or in any substantial part without prior written consent of ERIS.

Executive Summary

Property Information:

Project Property: *Fernandes Subdivision*
122 W Paige Ave Tulare CA 93274

Project No: *25-14*

Coordinates:

Latitude:	*36.18390778*
Longitude:	*-119.35000744*
UTM Northing:	*4,006,906.25*
UTM Easting:	*288,674.16*
UTM Zone:	*11S*

Elevation: *277 FT*

Order Information:

Order No: *25011500707*
Date Requested: *January 15, 2025*
Requested by: *Paul Humphrey, REPA*
Report Type: *Database Report*

Historicals/Products:

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	0.5	0	0	0	0	-	0
RCRA LQG	Y	0.25	0	0	0	-	-	0
RCRA SQG	Y	0.25	0	0	0	-	-	0
RCRA VSQG	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	0	0	-	-	0
RCRA CONTROLS	Y	0.5	0	0	0	0	-	0
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
LUCIS	Y	0.5	0	0	0	0	-	0
NPL IC	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	0	-	0
FEMA UST	Y	0.25	0	0	0	-	-	0
FRP	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DELISTED FRP	Y	0.25	0	0	0	-	-	0
HIST GAS STATIONS	Y	0.25	0	0	0	-	-	0
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
DOE FUSRAP	Y	1	0	0	0	0	0	0
State								
RESPONSE	Y	1	0	0	0	0	0	0
ENVIROSTOR	Y	1	0	0	0	0	**1**	**1**
DELISTED ENVS	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	0	0	0	-	0
SWRCB SWF	Y	0.5	0	0	0	0	-	0
WMUD	Y	0.5	0	0	0	0	-	0
HWP	Y	1	0	0	0	0	0	0
SWAT	Y	0.5	0	0	0	0	-	0
C&D DEBRIS RECY	Y	0.5	0	0	0	0	-	0
RECYCLING	Y	0.5	0	0	0	0	-	0
PROCESSORS	Y	0.5	0	0	0	0	-	0
CONTAINER RECY	Y	0.5	0	0	0	0	-	0
LDS	Y	0.5	0	0	0	0	-	0
LUST	Y	0.5	0	0	0	0	-	0
DELISTED LST	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	0	0	-	-	0
UST CLOSURE	Y	0.5	0	0	0	0	-	0
HHSS	Y	0.25	0	0	0	-	-	0
UST SWEEPS	Y	0.25	0	0	0	-	-	0
AST	Y	0.25	0	0	**1**	-	-	**1**
AST SWRCB	Y	0.25	0	0	0	-	-	0
TANK OIL GAS	Y	0.25	0	0	0	-	-	0
DELISTED TNK	Y	0.25	0	0	0	-	-	0
CERS TANK	Y	0.25	0	0	**1**	-	-	**1**
DELISTED CTNK	Y	0.25	**1**	0	0	-	-	**1**
HIST TANK	Y	0.25	0	0	0	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
LUR	Y	0.5	0	0	0	0	-	0
CALSITES	Y	0.5	0	0	0	0	-	0
HLUR	Y	0.5	0	0	0	0	-	0
DEED	Y	0.5	0	0	0	0	-	0
VCP	Y	0.5	0	0	0	0	-	0
CLEANUP SITES	Y	0.5	0	0	0	0	-	0
DELISTED CLEANUP	Y	0.5	0	0	0	0	-	0
DELISTED COUNTY	Y	0.25	0	0	0	-	-	0
Tribal								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED INDIAN LST	Y	0.5	0	0	0	0	-	0
DELISTED INDIAN UST	Y	0.25	0	0	0	-	-	0
County								
CUPA TULARE	Y	0.25	**1**	0	**1**	-	-	**2**
Additional Environmental Records								
Federal								
PFAS GHG	Y	0.5	0	0	0	0	-	0
OSC RESPONSE	Y	0.125	0	0	-	-	-	0
FINDS/FRS	Y	PO	**1**	-	-	-	-	**1**
TRIS	Y	PO	0	-	-	-	-	0
PFAS NPL	Y	0.5	0	0	0	0	-	0
PFAS FED SITES	Y	0.5	0	0	0	0	-	0
PFAS SSEHRI	Y	0.5	0	0	0	0	-	0
PFAS ERNS	Y	0.5	0	0	0	0	-	0
PFAS NPDES	Y	0.5	0	0	0	0	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
PFAS TSCA	Y	0.5	0	0	0	0	-	0
PFAS E-MANIFEST	Y	0.5	0	0	0	0	-	0
PFAS IND	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
FUDS MRS	Y	1	0	0	0	0	0	0
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0
MRDS	Y	1	0	0	0	0	0	0
LM SITES	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
CONSENT DECREES	Y	0.25	0	0	0	-	-	0
AFS	Y	PO	0	-	-	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCBT	Y	0.5	0	0	0	0	-	0
PCB	Y	0.5	0	0	0	0	-	0
POWER PLANTS	Y	0.125	0	0	-	-	-	0
State								
PFAS SAMPLING	Y	0.5	0	0	0	0	-	0
DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DRYC GRANT	Y	0.25	0	0	0	-	-	0
PFAS GT CLEANUPS	Y	0.5	0	0	0	0	-	0
PFAS GW	Y	0.5	0	0	0	0	-	0
PFAS INVEST	Y	0.5	0	0	0	0	-	0
HWSS CLEANUP	Y	0.5	0	0	0	0	-	0
TOXIC PITS	Y	1	0	0	0	0	0	0

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
DTSC HWF	Y	0.5	0	0	0	0	-	0
INSP COMP ENF	Y	1	0	0	0	**1**	**1**	**2**
SCH	Y	1	0	0	0	0	0	0
CHMIRS	Y	PO	0	-	-	-	-	0
HIST CHMIRS	Y	PO	0	-	-	-	-	0
HAZNET	Y	PO	**1**	-	-	-	-	**1**
HAZ GEN	Y	PO	0	-	-	-	-	0
HAZ TSD	Y	0.5	0	0	0	0	-	0
HIST MANIFEST	Y	PO	0	-	-	-	-	0
HW TRANSPORT	Y	0.125	0	0	-	-	-	0
WASTE TIRE	Y	PO	0	-	-	-	-	0
MEDICAL WASTE	Y	0.25	0	0	0	-	-	0
HIST CORTESE	Y	0.5	0	0	0	0	-	0
CDO/CAO	Y	0.5	0	0	0	0	-	0
CERS HAZ	Y	0.125	0	0	-	-	-	0
DELISTED HAZ	Y	0.5	0	0	0	0	-	0
GEOTRACKER	Y	0.125	0	0	-	-	-	0
MINE	Y	1	0	0	0	0	0	0
LIEN	Y	PO	0	-	-	-	-	0
WASTE DISCHG	Y	0.25	0	0	0	-	-	0
EMISSIONS	Y	0.25	0	0	**1**	-	-	**1**
CDL	Y	0.125	0	0	-	-	-	0
Tribal	***No Tribal additional environmental record sources available for this State.***							
County								
Total:			***4***	*0*	***4***	***1***	***2***	***11***

**** PO – Property Only***
**** 'Property and adjoining properties' database search radii are set at 0.25 miles.***

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
1	HAZNET	JOHN DOMINGOS HARVESTING	122 W PAIGE AVE TULARE CA 932749496	W	0.00 / 0.00	0	19
1	CUPA TULARE	JOHN DOMINGOS HAY HARVESTING INC	122 W PAIGE AVE TULARE CA 93274	W	0.00 / 0.00	0	19
1	FINDS/FRS	JOHN DOMINGOS HAY HARVESTING INC	122 W PAIGE AVE TULARE CA 93274 ***Registry ID:*** *110064983558*	W	0.00 / 0.00	0	19
1	DELISTED CTNK	JOHN DOMINGOS HAY HARVESTING INC	122 W PAIGE AVE TULARE CA 93274	W	0.00 / 0.00	0	20

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
2	AST		2569 S IST TULARE CA	E	0.25 / 1,293.65	0	20
2	CUPA TULARE	LINDER EQUIPMENT COMPANY	2569 S I ST TULARE CA 93274-6308	E	0.25 / 1,293.65	0	20
2	EMISSIONS	LINDER EQUIPMENT CO	2569 SOUTH 'I' STREET TULARE CA	E	0.25 / 1,293.65	0	21
2	CERS TANK	LINDER EQUIPMENT COMPANY	2569 S I ST TULARE CA 93274-6308 ***Site ID:*** 185071	E	0.25 / 1,293.65	0	21
3	INSP COMP ENF	SA RECYLING (TULARE)	2525 S K ST TULARE CA 93274	E	0.43 / 2,278.18	1	24
4	INSP COMP ENF	ALL AMERICAN RECYCLERS LLC	3531 S K ST UNIT B TULARE CA 93274	SE	0.76 / 4,030.76	0	25
5	ENVIROSTOR	ALL AMERICAN RECYCLERS LLC	3615 S K ST TULARE CA 93274 ***Estor/EPA ID	Cleanup Status:*** 60003770 | ACTIVE AS OF 2/2/2024	SE	0.77 / 4,069.82	0	25

Executive Summary: Summary by Data Source

Standard

State

ENVIROSTOR - EnviroStor Database

A search of the ENVIROSTOR database, dated Sep 25, 2024 has found that there are 1 ENVIROSTOR site(s) within approximately 1.00miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
ALL AMERICAN RECYCLERS LLC	3615 S K ST TULARE CA 93274	SE	0.77 / 4,069.82	5
	Estor/EPA ID* | *Cleanup Status: *60003770 | ACTIVE AS OF 2/2/2024*			

AST - Aboveground Storage Tanks

A search of the AST database, dated Aug 31, 2009 has found that there are 1 AST site(s) within approximately 0.25miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
	2569 S IST TULARE CA	E	0.25 / 1,293.65	2

CERS TANK - California Environmental Reporting System (CERS) Tanks

A search of the CERS TANK database, dated Oct 28, 2024 has found that there are 1 CERS TANK site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
LINDER EQUIPMENT COMPANY	2569 S I ST TULARE CA 93274-6308	E	0.25 / 1,293.65	2
	Site ID: *185071*			

DELISTED CTNK - Delisted California Environmental Reporting System (CERS) Tanks

A search of the DELISTED CTNK database, dated Oct 28, 2024 has found that there are 1 DELISTED CTNK site(s) within approximately 0.25miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
JOHN DOMINGOS HAY HARVESTING INC	122 W PAIGE AVE TULARE CA 93274	W	0.00 / 0.00	1

County

CUPA TULARE - Tulare County - CUPA List

A search of the CUPA TULARE database, dated May 13, 2023 has found that there are 2 CUPA TULARE site(s) within approximately 0.25miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
JOHN DOMINGOS HAY HARVESTING INC	122 W PAIGE AVE TULARE CA 93274	W	0.00 / 0.00	1
LINDER EQUIPMENT COMPANY	2569 S I ST TULARE CA 93274-6308	E	0.25 / 1,293.65	2

Non Standard

Federal

FINDS/FRS - Facility Registry Service/Facility Index

A search of the FINDS/FRS database, dated Aug 1, 2024 has found that there are 1 FINDS/FRS site(s) within approximately 0.02miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
JOHN DOMINGOS HAY HARVESTING INC	122 W PAIGE AVE TULARE CA 93274 ***Registry ID**: 110064983558*	W	0.00 / 0.00	1

State

INSP COMP ENF - EnviroStor Inspection, Compliance, and Enforcement

A search of the INSP COMP ENF database, dated Nov 23, 2023 has found that there are 2 INSP COMP ENF site(s) within approximately 1.00miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
SA RECYLING (TULARE)	2525 S K ST TULARE CA 93274	E	0.43 / 2,278.18	3
ALL AMERICAN RECYCLERS LLC	3531 S K ST UNIT B TULARE CA 93274	SE	0.76 / 4,030.76	4

HAZNET - Handlers from Hazardous Waste Manifest Data

A search of the HAZNET database, dated Oct 24, 2016 has found that there are 1 HAZNET site(s) within approximately 0.02miles of the project property.

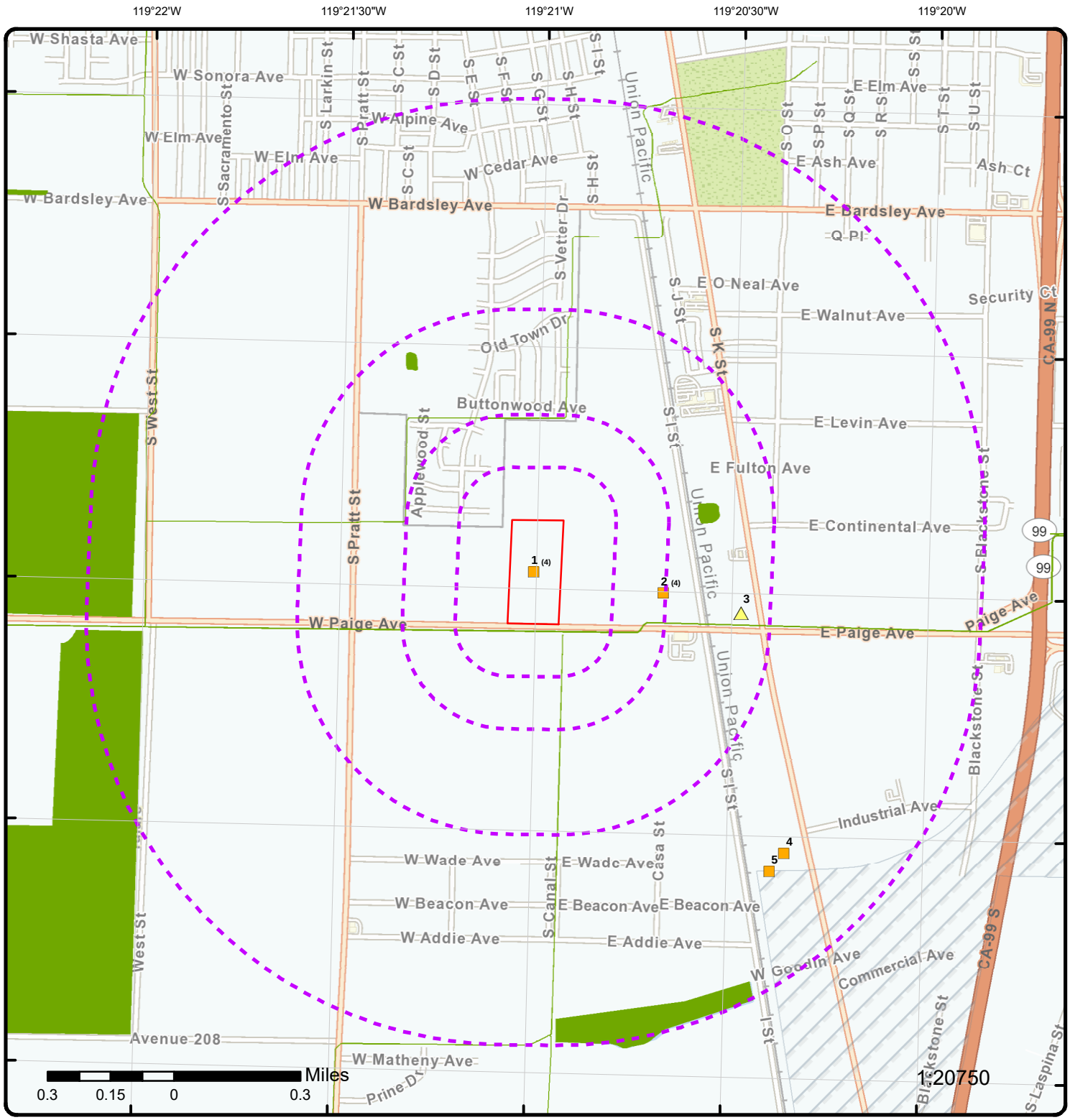
Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
JOHN DOMINGOS HARVESTING	122 W PAIGE AVE TULARE CA 932749496	W	0.00 / 0.00	1

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key

EMISSIONS - Toxic Pollutant Emissions Facilities

A search of the EMISSIONS database, dated Dec 31, 2021 has found that there are 1 EMISSIONS site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance (mi/ft)	Map Key
LINDER EQUIPMENT CO	2569 SOUTH 'I' STREET TULARE CA	E	0.25 / 1,293.65	2



Map: 1.0 Mile Radius

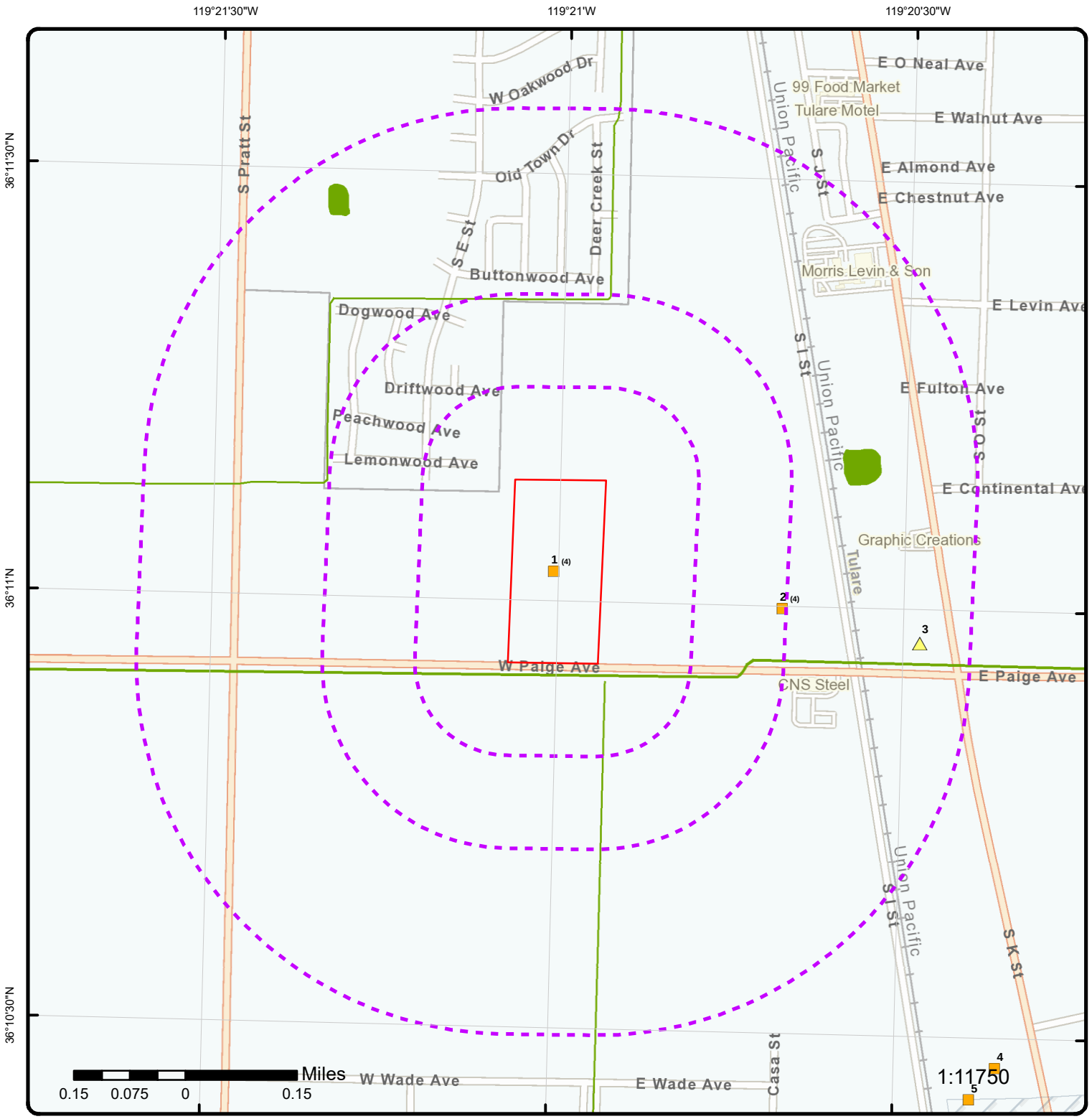
Order Number: 25011500707

Address: 122 W Paige Ave, Tulare, CA

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

Source: © 2021 ESRI StreetMap Premium

© ERIS Information Inc.



Map: 0.5 Mile Radius

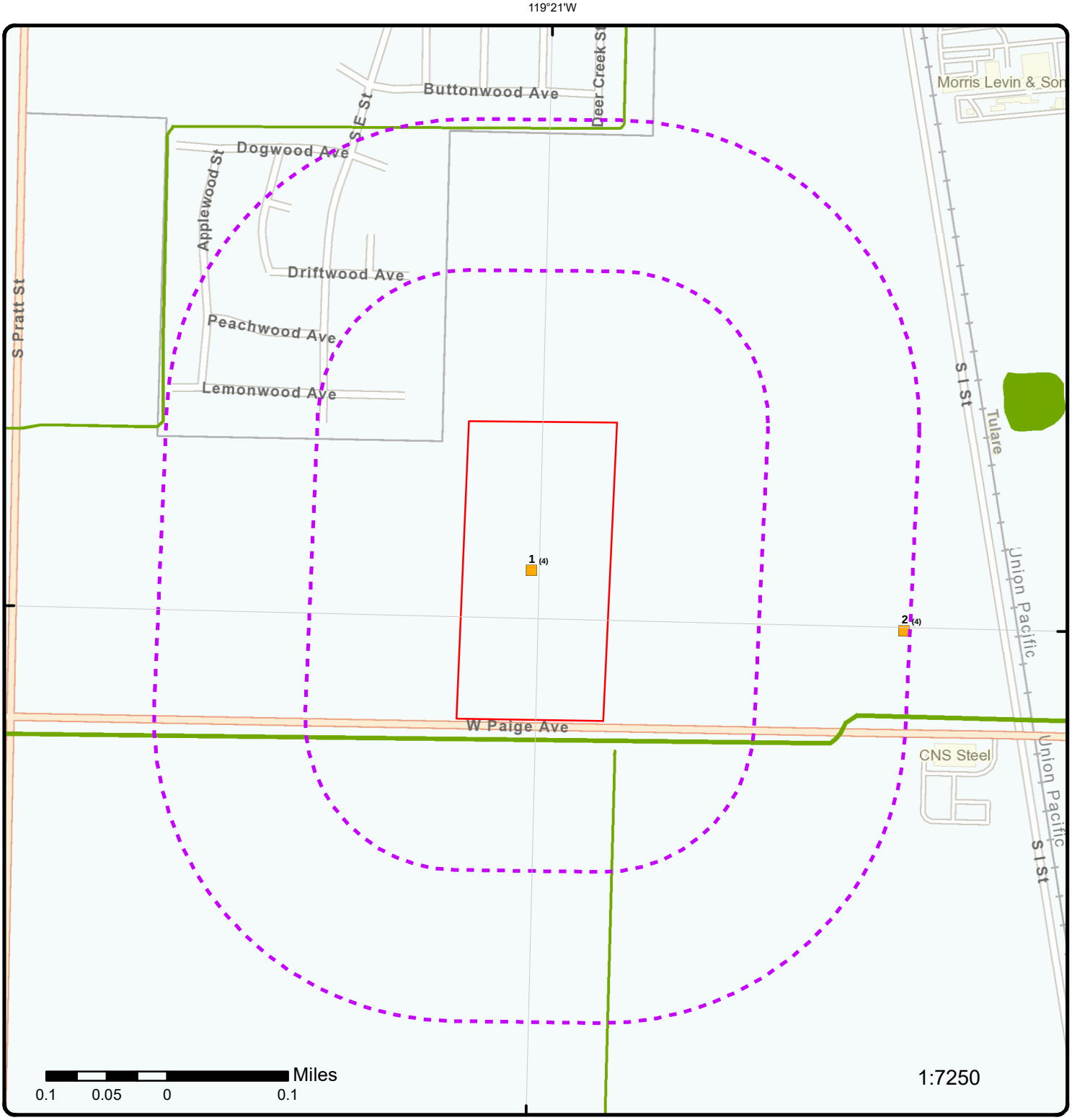
Order Number: 25011500707

Address: 122 W Paige Ave, Tulare, CA

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

Source: © 2021 ESRI StreetMap Premium

© ERIS Information Inc.



Map: 0.25 Mile Radius

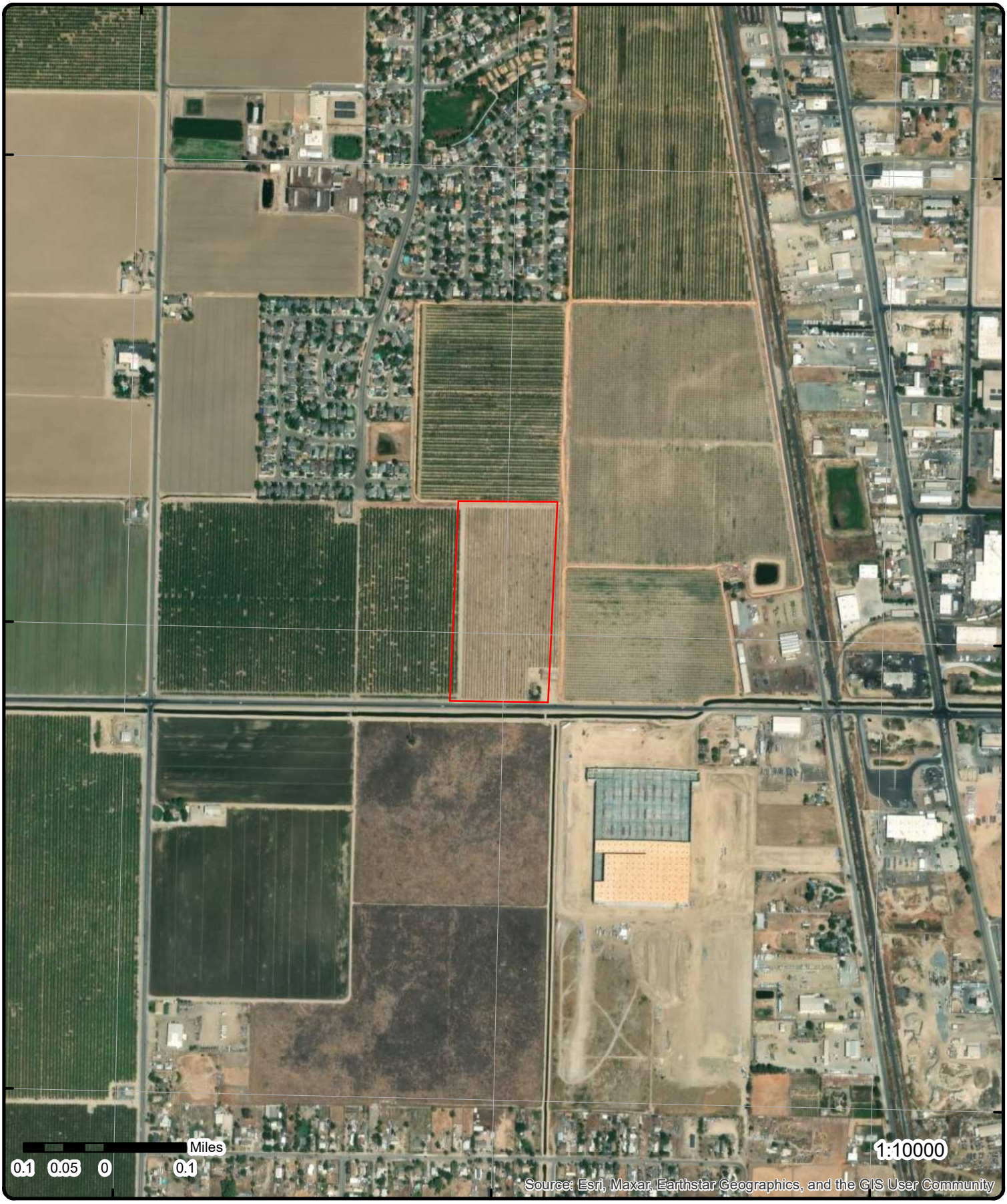
Order Number: 25011500707

Address: 122 W Paige Ave, Tulare, CA

- Project Property
- Buffer Outline
- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation
- Areas with Higher Elevation
- Areas with Same Elevation
- Areas with Lower Elevation
- Areas with Unknown Elevation
- Freeways; Highways
- Traffic Circle; Ramp
- Major & Minor Arterial
- Traffic Circle; Ramp
- Local Road
- Rail
- State
- Country
- National Wetland
- Indian Reserve Land
- 100 Year Flood Zone
- 500 Year Flood Zone
- FWS Special Designation Areas
- National Priorities List (Active, Delisted, Proposed, Institutional Control)

Source: © 2021 ESRI StreetMap Premium

© ERIS Information Inc.



Aerial **Year: 2023**

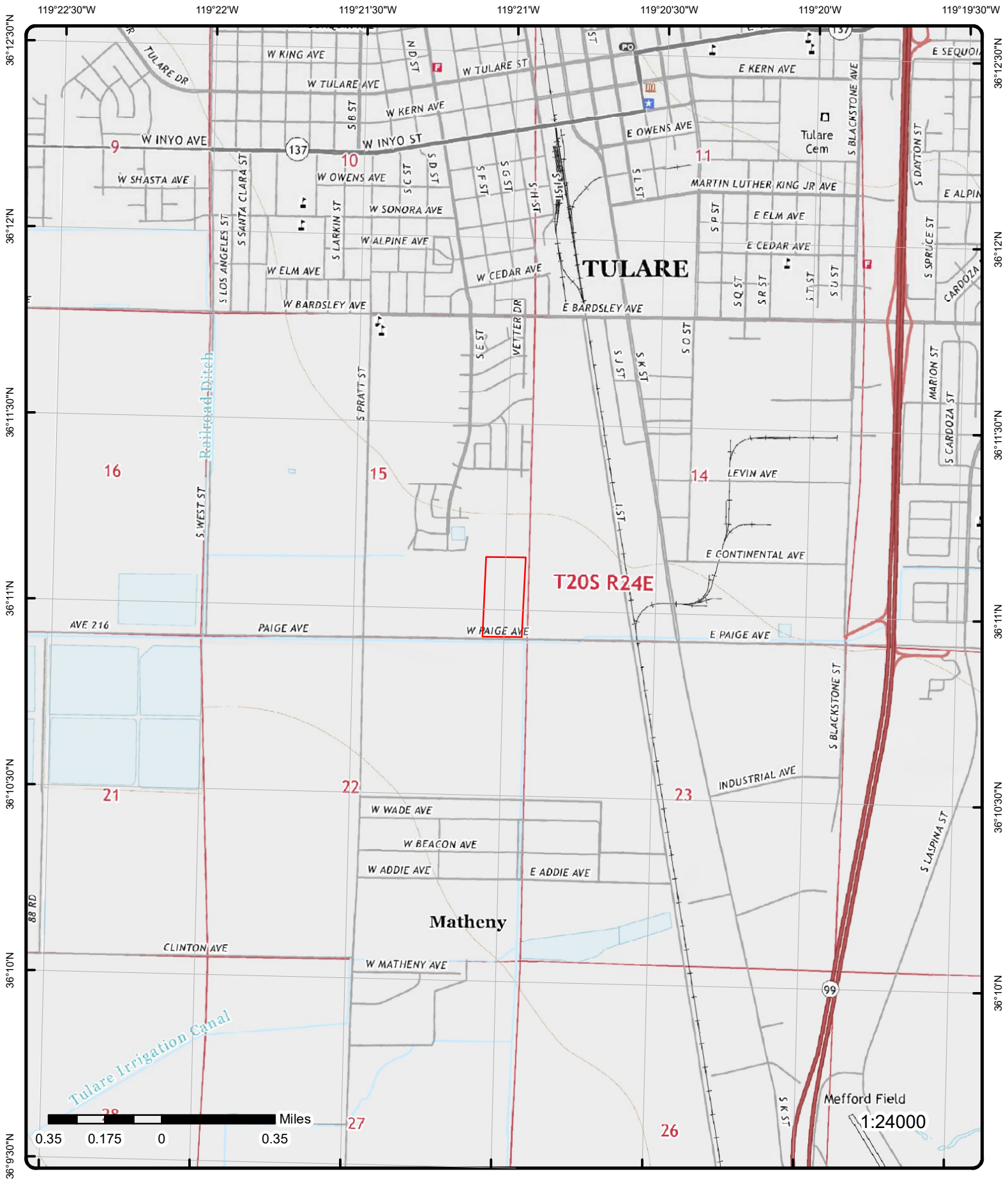
Address: 122 W Paige Ave, Tulare, CA

Source: ESRI World Imagery

Order Number: 25011500707

ERIS

© ERIS Information Inc.



Topographic Map

Year: 2021

Order Number: 25011500707

Address: 122 W Paige Ave, CA

Quadrangle(s): Paige CA, Tulare CA

Source: USGS Topographic Map

© ERIS Information Inc.

Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	1 of 4	W	0.00 / 0.00	276.90 / 0	JOHN DOMINGOS HARVESTING 122 W PAIGE AVE TULARE CA 932749496	HAZNET

SIC Code: 0119
NAICS Code: 111199
EPA ID: CAL000255837
Create Date: 7/17/2002
Fac Act Ind: Yes
Inact Date:
County Code: 54
County Name: Tulare
Mail Name:
Mailing Addr 1: 237 MITCHELL AVE
Mailing Addr 2:
Owner Fax: 0000000000
Mailing City: TULARE
Mailing State: CA
Mailing Zip: 932740000
Region Code: 1
Owner Name: JOHN DOMINGOS HAY HARVESTING INC
Owner Addr 1: 237 MITCHELL AVE
Owner Addr 2:
Owner City: TULARE
Owner State: CA
Owner Zip: 932740000
Owner Phone: 5596869602
Details DTSC HWTS: The Department of Toxic Substances Control (DTSC) makes available a Waste Code Matrix showing each Waste Code, its description, and annual amounts in its Hazardous Waste Tracking System: https://hwts.dtsc.ca.gov/search
DTSC Handler Profile url: https://hwts.dtsc.ca.gov/facility/CAL000255837

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	2 of 4	W	0.00 / 0.00	276.90 / 0	JOHN DOMINGOS HAY HARVESTING INC 122 W PAIGE AVE TULARE CA 93274	CUPA TULARE

Facility ID: FA1348962
CERS ID: 10603828
Phone: 5599018306
Second Phone: 5596869602
GIS Latitude: 36.182317695
GIS Longitude: -119.349273505
APN: 174-030-008

Details

Gen Prog Record ID: PR1351932
Haz Emerg Record ID: EM0001435
PE: 2224
Description: Haz Mat 6 - 15 Reportable Quantities of Chem
Comment: TULARE CITY
Current Status: Inactive, non-billable
Billing Status: Inactive, non-billable

Gen Prog Record ID: PR1351996
Haz Emerg Record ID: EM0001435
PE: 2312
Description: EXEMPT TANK FA - STORAGE<20,000
Comment: TULARE CITY
Current Status: Inactive, non-billable
Billing Status: Inactive, non-billable

Gen Prog Record ID: PR1351934
Haz Emerg Record ID: EM0001435
PE: 2277
Description: CUPA OVERSIGHT CA SURCHARGE
Comment: TULARE CITY
Current Status: Inactive, non-billable
Billing Status: Inactive, non-billable

Gen Prog Record ID: PR1351933
Haz Emerg Record ID: EM0001435
PE: 2254
Description: HW - SMALL GENERATOR
Comment: TULARE CITY
Current Status: Inactive, non-billable
Billing Status: Inactive, non-billable

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	3 of 4	W	0.00 / 0.00	276.90 / 0	JOHN DOMINGOS HAY HARVESTING INC	FINDS/FRS

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
					122 W PAIGE AVE TULARE CA 93274	

Registry ID:	110064983558
FIPS Code:	
HUC Code:	18030012
Site Type Name:	STATIONARY
Location Description:	
Supplemental Location:	
Create Date:	10-OCT-15
Update Date:	
Interest Types:	STATE MASTER
SIC Codes:	
SIC Code Descriptions:	
NAICS Codes:	
NAICS Code Descriptions:	
Conveyor:	FRS-GEOCODE
Federal Facility Code:	
Federal Agency Name:	
Tribal Land Code:	
Tribal Land Name:	
Congressional Dist No:	21
Census Block Code:	061070030022000
EPA Region Code:	09
County Name:	TULARE
US/Mexico Border Ind:	
Latitude:	36.1839
Longitude:	-119.35008
Reference Point:	CENTER OF A FACILITY OR STATION
Coord Collection Method:	ADDRESS MATCHING-HOUSE NUMBER
Accuracy Value:	30
Datum:	NAD83
Source:	
Facility Detail Rprt URL:	https://ofmpub.epa.gov/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110064983558
Data Source:	Facility Registry Service - Single File
Program Acronyms:	

CA-ENVIROVIEW:177593

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
1	4 of 4	W	0.00 / 0.00	276.90 / 0	JOHN DOMINGOS HAY HARVESTING INC 122 W PAIGE AVE TULARE CA 93274	DELISTED CTNK

Site ID:	177593	**Latitude:**	36.183907
County:	Tulare County	**Longitude:**	-119.350082
Tank Type:			
Original Source:	CTNK		
Record Date:	18-FEB-2020		

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	1 of4	E	0.25 / 1,293.65	277.29 / 0	2569 S IST TULARE CA	AST

Total Capacity(Gal):	4000	**Owner Name:**	LINDER EQUIP CO
CUPA:	Tulare	**County:**	Tulare

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
2	2 of4	E	0.25 / 1,293.65	277.29 / 0	LINDER EQUIPMENT COMPANY 2569 S I ST TULARE CA 93274-6308	CUPA TULARE

Facility ID:	FA0004623	**GIS Latitude:**	36.1831834
CERS ID:	10610578	**GIS Longitude:**	-119.34367

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

Phone: 5596855028 **APN:** 181-150-003
Second Phone: 5596855000

Details

Gen Prog Record ID: PR0002388 **Comment:** TULARE CITY
Haz Emerg Record ID: EM0001045 **Current Status:** Active, billable
PE: 2223 **Billing Status:** Active, billable
Description: Haz Mat - < 6 Reportable Quantities of Chem

Gen Prog Record ID: PR1346306 **Comment:** TULARE CITY
Haz Emerg Record ID: EM0001045 **Current Status:** Active, billable
PE: 2277 **Billing Status:** Active, billable
Description: CUPA OVERSIGHT CA SURCHARGE

Gen Prog Record ID: PR1350918 **Comment:** TULARE CITY
Haz Emerg Record ID: EM0001045 **Current Status:** Active, billable
PE: 2313 **Billing Status:** Active, billable
Description: TANK FA >1,320 AND <10,000 GAL

2	3 of4	E	0.25 / 1,293.65	277.29 / 0	LINDER EQUIPMENT CO 2569 SOUTH 'I' STREET TULARE CA	EMISSIONS

2013 Criteria Data

Facility ID: 1513 **CERR Code:**
Facility SIC Code: 5541 **TOGT:** .051257
CO: 54 **ROGT:** .051257
Air Basin: SJV **COT:**
District: SJU **NOXT:**
COID: TUL **SOXT:**
DISN: SAN JOAQUIN VALLEY APCD **PMT:**
CHAPIS: **PM10T:**

2013 Toxic Data

Facility ID: 1513 **COID:** TUL
Facility SIC Code: 5541 **DISN:** SAN JOAQUIN VALLEY APCD
CO: 54 **CHAPIS:**
Air Basin: SJV **CERR Code:**
District: SJU
TS:
Health Risk Asmt:
Non-Cancer Chronic Haz Ind:
Non-Cancer Acute Haz Ind:

2	4 of4	E	0.25 / 1,293.65	277.29 / 0	LINDER EQUIPMENT COMPANY 2569 S I ST TULARE CA 93274-6308	CERS TANK

Site ID: 185071
Latitude: 36.183183
Longitude: -119.343670

Regulated Programs

EI ID: 10610578
EI Description: Chemical Storage Facilities

EI ID: 10610578
EI Description: Hazardous Waste Generator

EI ID: 10610578
EI Description: Aboveground Petroleum Storage

Violations

Violation Date: 08/01/2018 ***Violation Source:*** CERS
Violation Program: APSA ***Violation Division:*** Tulare County Environmental Health
Citation: HSC 6.67 25270.4.5 (a) - California Health and Safety Code, Chapter 6.67, Section(s) 25270.4.5 (a)
Violation Notes:

Returned to compliance on 08/20/2018.

Violation Description:

Failure to complete a review and evaluation of the SPCC Plan at least once every five years, document the completion of the review, and sign a statement as to whether the SPCC Plan will be amended.

Violations

Violation Date: 08/01/2018 ***Violation Source:*** CERS
Violation Program: HMRRP ***Violation Division:*** Tulare County Environmental Health
Citation: HSC 6.95 25508(a)(1) - California Health and Safety Code, Chapter 6.95, Section(s) 25508(a)(1)
Violation Notes:

Returned to compliance on 08/01/2018.

Violation Description:

Failure to annually review and electronically certify that the business plan is complete and accurate on or before the annual due date.

Enforcements

Enf Action Date: 08/01/2018 ***Enf Action Program:*** APSA
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Tulare County Environmental Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Enf Action Date: 08/01/2018 ***Enf Action Program:*** HMRRP
Enf Action Type: Notice of Violation (Unified Program) ***Enf Action Source:*** CERS
Enf Action Division: Tulare County Environmental Health
Enf Action Description: Notice of Violation Issued by the Inspector at the Time of Inspection
Enf Action Notes:

Evaluations

Eval Date: 07/16/2015
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Tulare County Environmental Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Eval Date: 08/01/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Tulare County Environmental Health

Eval Program: APSA
Eval Source: CERS
Eval Notes:

Annette Doom; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 08/01/2018
Violations Found: Yes
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Tulare County Environmental Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Annette Doom; Note: data in [EVAL Notes] field for some records is truncated from the source.

Eval Date: 07/16/2015
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Tulare County Environmental Health
Eval Program: HMRRP
Eval Source: CERS
Eval Notes:

Eval Date: 08/01/2018
Violations Found: No
Eval General Type: Compliance Evaluation Inspection
Eval Type: Routine done by local agency
Eval Division: Tulare County Environmental Health
Eval Program: HW
Eval Source: CERS
Eval Notes:

Annette Doom; Note: data in [EVAL Notes] field for some records is truncated from the source.

Affiliations

Affil Type Desc: Legal Owner
Entity Name: TROY ALLEN
Entity Title:
Address: 311 KERN
City: TULARE
State: CA
Country: United States
Zip Code: 93274
Phone: (559) 685-5000

Affil Type Desc: Parent Corporation
Entity Name: LINDER EQUIPMENT COMPANY
Entity Title:
Address:
City:
State:
Country:
Zip Code:
Phone:

Affil Type Desc: Environmental Contact
Entity Name: CARRIE LINDER
Entity Title:
Address: PO BOX 1139
City: TULARE
State: CA

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
Country:						
Zip Code:		93274				
Phone:						
Affil Type Desc:		CUPA District				
Entity Name:		Tulare County Environmental Health				
Entity Title:						
Address:		5957 South Mooney Boulevard				
City:		Visalia				
State:		CA				
Country:						
Zip Code:		93277				
Phone:		(559) 624-7400				
Affil Type Desc:		Operator				
Entity Name:		LINDER EQUIPMENT COMPANY				
Entity Title:						
Address:						
City:						
State:						
Country:						
Zip Code:						
Phone:		(559) 685-5000				
Affil Type Desc:		Property Owner				
Entity Name:		Linder Equipment Company				
Entity Title:						
Address:		P.O. BOX 1139				
City:		TULARE				
State:		CA				
Country:		United States				
Zip Code:		93275				
Phone:		(559) 685-5000				
Affil Type Desc:		Identification Signer				
Entity Name:		ANNETTE D DOOM				
Entity Title:		SAFETY DIRECTOR				
Address:						
City:						
State:						
Country:						
Zip Code:						
Phone:						
Affil Type Desc:		Document Preparer				
Entity Name:		ANNETTE O DOOM				
Entity Title:						
Address:						
City:						
State:						
Country:						
Zip Code:						
Phone:						
Affil Type Desc:		Facility Mailing Address				
Entity Name:		Mailing Address				
Entity Title:						
Address:		PO BOX 1139				
City:		TULARE				
State:		CA				
Country:						
Zip Code:		93275				
Phone:						
3	1 of1	E	0.43 / 2,278.18	278.00 / 1	SA RECYLING (TULARE) 2525 S K ST TULARE CA 93274	INSP COMP ENF

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB

EPA ID: CAR000334896 **County:** TULARE
Geotracker Address: **Geotracker Lat:**
Geotracker City: **Geotracker Long:**
Report URL: https://www.envirostor.dtsc.ca.gov/public/eerp_profile_report?global_id=3004895

Inspection Information

Inspection Type: Compliance Evaluation Inspection - Generator
Violations: Class 2, Minor
Inspection Date: 10/19/2022
Return to Compliance: 1/21/2023
Report Sent Date: 11/17/2022

Site Details (Download)

Envirostor ID: 3004895 **Status:** No Action
Site Type: INSPECTION

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
4	1 of1	SE	0.76 / 4,030.76	276.39 / 0	ALL AMERICAN RECYCLERS LLC 3531 S K ST UNIT B TULARE CA 93274	INSP COMP ENF

EPA ID: CAL000474724 **County:** TULARE
Geotracker Address: **Geotracker Lat:**
Geotracker City: **Geotracker Long:**
Report URL: https://www.envirostor.dtsc.ca.gov/public/eerp_profile_report?global_id=3004894

Inspection Information

Inspection Type: Compliance Evaluation Inspection - Generator
Violations: Class 1, Class 2, Minor
Inspection Date: 1/18/2023
Return to Compliance: 6/19/2023
Report Sent Date: 2/17/2023

Site Details (Download)

Envirostor ID: 3004894 **Status:** No Action
Site Type: INSPECTION

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
5	1 of1	SE	0.77 / 4,069.82	276.86 / 0	ALL AMERICAN RECYCLERS LLC 3615 S K ST TULARE CA 93274	ENVIROSTOR

Estor/EPA ID: 60003770 **Assembly District:** 33
Site Code: 102543 **Senate District:** 12
Nat Priority List: NO **Permit Renewal Lead:**
APN: NONE SPECIFIED **Public Partici Spclst:**
Census Tract: **Project Manager:** ALBERTO GUTIERREZ
Site Type: CORRECTIVE ACTION **County:** TULARE
Address Description: 3615 S K ST **Latitude:** 0
Office: CLEANUP SACRAMENTO **Longitude:** 0
Special Program: **Acres:** NONE SPECIFIED
Funding: RESPONSIBLE PARTY **Supervisor:** DUANE WHITE
Cleanup Status: ACTIVE AS OF 2/2/2024
Cleanup Oversight Agencies: DTSC - HAZARDOUS WASTE MANAGEMENT PROGRAM - LEAD AGENCY
School District:
Past Use that Caused Contam: NONE SPECIFIED
Potential Media Affected: NONE SPECIFIED
Potential Contamin of Concern:

NONE SPECIFIED

Site History:

Status:	ACTIVE
Program Type:	CORRECTIVE ACTION
CalEnviroScreen Score:	
Summary Link:	https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60003770

Unplottable Summary

Total: 1 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
CHMIRS	City of Tulare	Page at West	Tulare CA		821801873
		Control No* | *Notified Date: 2/13/200204:20:09 PM			

Unplottable Report

Site: ***City of Tulare***
Page at West Tulare CA

CHMIRS

Control No:		***Notified Date:***	2/13/200204:20:09 PM
County:	Tulare County	***Notified Date Time:***	
Year:	2002		
URL:			

California Hazardous Material Incident Report System (as of 1997 to 2005)

Contained:	Yes	***Bbls:***	0
Substance:	Secondary Affluent	***Cups:***	0
Incident Date:	2/13/200212:00:00 AM	***Cu Ft:***	0
No of Injuries:	0	***Gals:***	3000
No of Fatals:	0	***Grams:***	0
No of Evacs:	0	***Lbs:***	0
Cleanup:	Unknown	***Liters:***	0
Water:	Yes	***Oz:***	0
Water Way:	irrigation canal	***Pts:***	0
City:	Tulare	***Qts:***	0
County:	Tulare County	***Sheen:***	0
ZIP:		***Tons:***	0
Site:	Waterways	***Unknown:***	0
Admin Agency:	Tulare County Health Department		
Location:	Page at West		
Description:	Water from a farmer's irrigation ditch spilled into a city irrigation canal.		

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13 and E1527-21, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List: NPL

The U.S. Environmental Protection Agency (EPA)'s National Priorities List (NPL) includes the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program, based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action. This data includes NPL sites represented as polygons, where available, that can be sourced from the EPA NPL Superfund Site Boundaries dataset, refreshed by the Shared Enterprise Geodata and Services (SEGS). These site boundaries represent the footprint of a whole site, the sum of all the Operable Units (OUs) and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. As site investigation and remediation progress, OUs may be added, modified or refined. Data provided by external parties is not independently verified by EPA. This boundary data is made available to the public strictly for informational purposes. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: Sep 25, 2024

National Priority List - Proposed: PROPOSED NPL

Sites proposed by the U.S. Environmental Protection Agency (EPA), the state agency, or concerned citizens for addition to the National Priorities List (NPL) due to contamination by hazardous waste and identified by the EPA as a candidate for cleanup because it poses a risk to human health and/or the environment. Sites represented as polygons, where available, can be sourced from the EPA NPL Superfund Site Boundaries dataset, refreshed by the Shared Enterprise Geodata and Services (SEGS). These site boundaries represent the footprint of a whole site, the sum of all the Operable Units (OUs) and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Data provided by external parties is not independently verified by EPA. This boundary data is made available to the public strictly for informational purposes. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: Sep 25, 2024

Deleted NPL: DELETED NPL

Sites deleted from the U.S. Environmental Protection Agency (EPA)'s National Priorities List (NPL). The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. Sites represented as polygons, where available, can be sourced from the EPA NPL Superfund Site Boundaries dataset, refreshed by the Shared Enterprise Geodata and Services (SEGS). These site boundaries represent the footprint of a whole site, the sum of all the Operable Units (OUs) and the current understanding of the full extent of contamination; for Federal Facility sites, the total site polygon may be the Facility boundary. Data provided by external parties is not independently verified by EPA. This boundary data is made available to the public strictly for informational purposes. Where there is no polygon boundary data available for a given site, the site is represented as a point.

Government Publication Date: Sep 25, 2024

SEMS List 8R Active Site Inventory: SEMS

The U.S. Environmental Protection Agency's (EPA) Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted. This data includes SEMS sites from the List 8R Active file as well as applicable sites from the EPA's Facility Registry Service map tool.

Government Publication Date: Oct 24, 2024

SEMS List 8R Archive Sites: SEMS ARCHIVE

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. This data includes sites from the List 8R Archived site file.

Government Publication Date: Oct 24, 2024

Inventory of Open Dumps, June 1985: ODI

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

Government Publication Date: Jun 1985

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

Government Publication Date: Oct 25, 2013

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA). This database was provided by the United States Environmental Protection Agency (EPA). Refer to SEMS LIEN as the current data source for Superfund Liens.

Government Publication Date: Jan 30, 2014

RCRA CORRACTS-Corrective Action: RCRA CORRACTS

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

Government Publication Date: Oct 21, 2024

RCRA non-CORRACTS TSD Facilities: RCRA TSD

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites that have indicated engagement in the treatment, storage, or disposal of hazardous waste which requires a RCRA hazardous waste permit.

Government Publication Date: Oct 21, 2024

RCRA Generator List: RCRA LQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

Government Publication Date: Oct 21, 2024

RCRA Small Quantity Generators List: RCRA SQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

Government Publication Date: Oct 21, 2024

RCRA Very Small Quantity Generators List: RCRA VSQG

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

Government Publication Date: Oct 21, 2024

RCRA Non-Generators: RCRA NON GEN

RCRA Info is the U.S. Environmental Protection Agency's (EPA) comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

Government Publication Date: Oct 21, 2024

RCRA Sites with Controls: RCRA CONTROLS

List of Resource Conservation and Recovery Act (RCRA) facilities with institutional controls in place. RCRA gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Government Publication Date: Oct 21, 2024

Federal Engineering Controls-ECs: FED ENG

List of Engineering controls (ECs) made availabe by the United States Environmental Protection Agency (EPA). ECs encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. The EC listing includes remedy component data from Superfund decision documents for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Nov 20, 2024

Federal Institutional Controls- ICs: FED INST

List of Institutional controls (ICs) made available by the United States Environmental Protection Agency (EPA). ICs are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site. The IC listing includes remedy component data from Superfund decision documents for applicable sites on the final or deleted on the National Priorities List (NPL); and sites with a Superfund Alternative Approach (SAA) Agreement in place. The only sites included that are not on the NPL; proposed for NPL; or removed from proposed NPL, are those with an SAA Agreement in place.

Government Publication Date: Nov 20, 2024

Land Use Control Information System: LUCIS

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

Government Publication Date: Sep 1, 2006

Institutional Control Boundaries at NPL sites: NPL IC

These boundaries of Institutional Control areas at sites on the U.S. Environmental Protection Agency's (EPA) National Priorities List (NPL), or as Proposed or Deleted, are sourced from the EPA NPL Superfund Site Boundaries dataset, refreshed by the Shared Enterprise Geodata and Services (SEGS). The EPA's NPL includes the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. Institutional controls are non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Data provided by external parties is not independently verified by EPA. This boundary data is made available to the public strictly for informational purposes.

Government Publication Date: Sep 25, 2024

Emergency Response Notification System: ERNS 1982 TO 1986

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

Government Publication Date: Oct 15, 2024

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This data is provided by the United States Environmental Protection Agency (EPA) and includes Brownfield sites from the Cleanups in My Community (CIMC) web application.

Government Publication Date: Feb 7, 2024

FEMA Underground Storage Tank Listing: FEMA UST

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

Government Publication Date: Dec 31, 2017

Facility Response Plan: FRP

This listing contains facilities that have submitted Facility Response Plans (FRPs) to the U.S. Environmental Protection Agency (EPA). Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit FRPs. Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments. This listing includes FRP facilities from an applicable EPA FOIA file and Homeland Infrastructure Foundation-Level Data (HIFLD) data file.

Government Publication Date: Jan 9, 2024

Delisted Facility Response Plans: DELISTED FRP

Facilities that once appeared in - and have since been removed from - the list of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

Government Publication Date: Jan 9, 2024

Historical Gas Stations: HIST GAS STATIONS

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

Government Publication Date: Jul 1, 1930

Petroleum Refineries: REFN

This list of petroleum refineries is sourced from the U.S. Energy Information Administration (EIA), Refinery Capacity Report. The listing includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year. The geographic area the report covers is the 50 States, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, Guam, and other U.S. possessions. Per the EIA, the facility location data represents the approximate location based on research of publicly available information from sources such as Federal agencies, company websites, and satellite images on public websites.

Government Publication Date: Oct 31, 2024

Petroleum Product and Crude Oil Rail Terminals: BULK TERMINAL

A list of petroleum product and crude oil rail terminals from the U.S. Energy Information Administration (EIA), as well as petroleum terminals sourced from the Federal Communications Commission Data hosted by the Homeland Infrastructure Foundation-Level Database. Data includes operable bulk petroleum product terminals with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil with activity between 2017 and 2018. EIA petroleum product terminal data comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings.

Government Publication Date: Jun 6, 2024

LIEN on Property: SEMS LIEN

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS) provides Lien details on applicable properties, such as the Superfund lien on property activity, the lien property information, and the parties associated with the lien.

Government Publication Date: Oct 24, 2024

Superfund Decision Documents: SUPERFUND ROD

This database contains a list of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include completed Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD) for active and archived sites stored in the Superfund Enterprise Management System (SEMS), along with other associated memos and files. This information is maintained and made available by the U.S. Environmental Protection Agency.

Government Publication Date: Oct 24, 2024

Formerly Utilized Sites Remedial Action Program: DOE FUSRAP

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

Government Publication Date: Mar 4, 2017

State

State Response Sites: RESPONSE

A list of identified confirmed release sites where the Department of Toxic Substances Control (DTSC) is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. This database serves a purpose similar to that of the federal NPL, functioning as a state-level counterpart for prioritizing cleanup efforts at hazardous substance release sites.

Government Publication Date: Sep 25, 2024

EnviroStor Database: ENVIROSTOR

The EnviroStor Data Management System is made available by the Department of Toxic Substances Control (DTSC). Includes Corrective Action sites, Tiered Permit sites, Historical Sites and Evaluation/Investigation sites. This database serves a purpose similar to that of the federal Superfund Enterprise Management System (SEMS), functioning as a state-level counterpart for tracking potential hazardous substance release sites.

Government Publication Date: Sep 25, 2024

Delisted State Response Sites: DELISTED ENVS

Sites removed from the list of State Response Sites made available by the EnviroStor Data Management System, Department of Toxic Substances Control (DTSC).

Government Publication Date: Sep 25, 2024

Solid Waste Information System (SWIS): SWF/LF

The Solid Waste Information System (SWIS) database made available by the Department of Resources Recycling and Recovery (CalRecycle) contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

Government Publication Date: Oct 26, 2024

Solid Waste Disposal Sites with Waste Constituents Above Hazardous Waste Levels: SWRCB SWF

This is a list of solid waste disposal sites identified by California State Water Resources Control Board with waste constituents above hazardous waste levels outside the waste management unit.

Government Publication Date: Sep 20, 2006

Waste Management Unit Database: WMUD

The Waste Management Unit Database System tracks and inventories waste management units. CCR Title 27 contains criteria stating that Waste Management Units are classified according to their ability to contain wastes. Containment shall be determined by geology, hydrology, topography, climatology, and other factors relating to the ability of the Unit to protect water quality. Water Code Section 13273.1 requires that operators submit a water quality solid waste assessment test (SWAT) report to address leak status. The WMUDS was last updated by the State Water Resources control board in 2000.

Government Publication Date: Jan 1, 2000

EnviroStor Hazardous Waste Facilities: HWP

A list of hazardous waste facilities including permitted, post-closure and historical facilities found in the Department of Toxic Substances Control (DTSC) EnviroStor database.

Government Publication Date: Sep 25, 2024

Sites Listed in the Solid Waste Assessment Test (SWAT) Program Report: SWAT

In a 1993 Memorandum of Understanding, the State Water Resources Control Board (SWRCB) agreed to submit a comprehensive report on the Solid Waste Assessment Test (SWAT) Program to the California Integrated Waste Management Board (CIWMB). This report summarizes the work completed to date on the SWAT Program, and addresses both the impacts that leakage from solid waste disposal sites (SWDS) may have upon waters of the State and the actions taken to address such leakage.

Government Publication Date: Dec 31, 1995

Construction and Demolition Debris Recyclers: C&D DEBRIS RECY

This listing of Construction and Demolition Debris Recyclers is maintained by the California Intergrated Waste Management Board-common C&D materials include lumber, drywall, metals, masonry (brick, concrete, etc.), carpet, plastic, pipe, rocks, dirt, paper, cardboard, or green waste related to land development.

Government Publication Date: Jun 20, 2018

Recycling Centers: RECYCLING

This list of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.
Government Publication Date: Oct 5, 2024

Listing of Certified Processors: PROCESSORS

This list of Certified Processors that are operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.
Government Publication Date: Oct 4, 2024

Listing of Certified Dropoff, Collection, and Community Service Programs: CONTAINER RECY

This list of Certified Dropoff, Collection, and Community Service Programs (non-buyback) operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.
Government Publication Date: Jan 2, 2025

Land Disposal Sites: LDS

Land Disposal Sites in GeoTracker, the State Water Resources Control Board (SWRCB)'s data management system. The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units. Waste management units include waste piles, surface impoundments, and landfills.
Government Publication Date: Jul 4, 2024

Leaking Underground Fuel Tank Reports: LUST

List of Leaking Underground Storage Tanks within the Cleanup Sites data in GeoTracker database. GeoTracker is the State Water Resources Control Board's (SWRCB) data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense and Site Cleanup Program) as well as permitted facilities such as operating Underground Storage Tanks. The Leak Prevention Program that overlooks LUST sites is the SWRCB in California's Environmental Protection Agency.
Government Publication Date: Jul 4, 2024

Delisted Leaking Storage Tanks: DELISTED LST

List of Leaking Underground Storage Tanks (LUST) cleanup sites removed from GeoTracker, the State Water Resources Control Board (SWRCB)'s database system, as well as sites removed from the SWRCB's list of UST Case closures.
Government Publication Date: Oct 26, 2024

Permitted Underground Storage Tank (UST) in GeoTracker: UST

List of Permitted Underground Storage Tank (UST) sites made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA).
Government Publication Date: Nov 17, 2024

Proposed Closure of Underground Storage Tank Cases: UST CLOSURE

This listing includes Proposed Closure of Underground Storage Tank (UST) Cases which are being considered for closure by either the State Water Resources Control Board at a Future Board Meeting or the Executive Director that have been posted for a 60-day public comment period, and Closure of UST Cases with Closure Denials and Approved Orders. The lists are provided by the California Water Boards.
Government Publication Date: Oct 26, 2024

Historical Hazardous Substance Storage Information Database: HHSS

The Historical Hazardous Substance Storage database contains information collected in the 1980s from facilities that stored hazardous substances. The information was originally collected on paper forms, was later transferred to microfiche, and recently indexed as a searchable database. When using this database, please be aware that it is based upon self-reported information submitted by facilities which has not been independently verified. It is unlikely that every facility responded to the survey and the database should not be expected to be a complete inventory of all facilities that were operating at that time. This database is maintained by the California State Water Resources Control Board's (SWRCB) Geotracker.
Government Publication Date: Aug 27, 2015

Statewide Environmental Evaluation and Planning System: UST SWEEPS

The Statewide Environmental Evaluation and Planning System (SWEEPS) is a historical listing of active and inactive underground storage tanks made available by the California State Water Resources Control Board (SWRCB).
Government Publication Date: Oct 1, 1994

Aboveground Storage Tanks: AST

A statewide list from 2009 of aboveground storage tanks (ASTs) made available by the Cal FIRE Office of the State Fire Marshal (OSFM). This list is no longer maintained or updated by the Cal FIRE OSFM.

Government Publication Date: Aug 31, 2009

SWRCB Historical Aboveground Storage Tanks: AST SWRCB

A list of aboveground storage tanks made available by the California State Water Resources Control Board (SWRCB). Effective January 1, 2008, the Certified Unified Program Agencies (CUPAs) are vested with the responsibility and authority to implement the Aboveground Petroleum Storage Act (APSA).

Government Publication Date: Dec 1, 2007

Oil and Gas Facility Tanks: TANK OIL GAS

Locations of oil and gas tanks that fall under the jurisdiction of the Geologic Energy Management Division of the California Department of Conservation (CalGEM) (CCR 1760). CalGEM was formerly the Division of Oil, Gas, and Geothermal Resources (DOGGR).

Government Publication Date: Nov 14, 2024

Delisted Storage Tanks: DELISTED TNK

This database contains a list of storage tank sites that were removed by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency (EPA) and the Cal FIRE Office of State Fire Marshal (OSFM).

Government Publication Date: Nov 14, 2024

California Environmental Reporting System (CERS) Tanks: CERS TANK

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs. The CalEPA oversees the statewide implementation of the Unified Program which applies regulatory standards to protect Californians from hazardous waste and materials.

Government Publication Date: Oct 28, 2024

Delisted California Environmental Reporting System (CERS) Tanks: DELISTED CTNK

This database contains a list of Aboveground Petroleum Storage and Underground Storage Tank sites that were removed from in the California Environmental Protection Agency (CalEPA) Regulated Site Portal.

Government Publication Date: Oct 28, 2024

Historical Hazardous Substance Storage Container Information - Facility Summary: HIST TANK

The State Water Resources Control Board maintained the Hazardous Substance Storage Containers listing and inventory in th 1980s. This facility summary lists historic tank sites where the following container types were present: farm motor vehicle fuel tanks; waste tanks; sumps; pits, ponds, lagoons, and others; and all other product tanks. This set, published in May 1988, lists facility and owner information, as well as the number of containers. This data is historic and will not be updated.

Government Publication Date: May 27, 1988

Site Mitigation and Brownfields Reuse Program Facility Sites with Land Use Restrictions: LUR

The Department of Toxic Substances Control (DTSC) Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents land use restrictions that are active. Some sites have multiple land use restrictions.

Government Publication Date: Sep 25, 2024

CALSITES Database: CALSITES

This historical database was maintained by the Department of Toxic Substance Control (DTSC) for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields site database.

Government Publication Date: May 1, 2004

Hazardous Waste Management Program Facility Sites with Deed / Land Use Restrictions: HLUR

The Department of Toxic Substances Control (DTSC) Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Government Publication Date: Feb 18, 2021

Deed Restrictions and Land Use Restrictions: DEED

List of Deed Restrictions, Land Use Restrictions and Covenants in GeoTracker made available by the State Water Resources Control Board (SWRCB) in California's Environmental Protection Agency. A deed restriction (land use covenant) may be required to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

Government Publication Date: Jul 4, 2024

Voluntary Cleanup Program: VCP

List of sites in the Voluntary Cleanup Program made available by the Department of Toxic Substances and Control (DTSC). The Voluntary Cleanup Program was designed to respond to lower priority sites. Under the Voluntary Cleanup Program, DTSC enters site-specific agreements with project proponents for DTSC oversight of site assessment, investigation, and/or removal or remediation activities, and the project proponents agree to pay DTSC's reasonable costs for those services.

Government Publication Date: Sep 25, 2024

GeoTracker Cleanup Program Sites: CLEANUP SITES

A list of Cleanup Program sites in the state of California made available by The State Water Resources Control Board (SWRCB) of the California Environmental Protection Agency (EPA). SWRCB tracks leaking underground storage tank cleanups as well as other water board cleanups.

Government Publication Date: Jul 4, 2024

Delisted Cleanup Program Sites: DELISTED CLEANUP

A list of Cleanup Program sites which were once included - and have since been removed from - the list of Cleanup Program Sites in GeoTracker. GeoTracker is the State Water Resource Control Boards' data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Government Publication Date: Jul 4, 2024

Delisted County Records: DELISTED COUNTY

Records removed from county or CUPA databases. Records may be removed from the county lists made available by the respective county departments because they are inactive, or because they have been deemed to be below reportable thresholds.

Government Publication Date: Oct 28, 2024

Tribal

Leaking Underground Storage Tanks on Tribal/Indian Lands: INDIAN LUST

This list of leaking underground storage tanks (LUSTs) on Tribal/Indian Lands in Region 9, which includes California, is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: May 7, 2024

Underground Storage Tanks on Tribal/Indian Lands: INDIAN UST

This list of underground storage tanks (USTs) on Tribal/Indian Lands in Region 9, which includes California, is made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: May 7, 2024

Delisted Tribal Leaking Storage Tanks: DELISTED INDIAN LST

Leaking Underground Storage Tank (LUST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian LUST lists made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: May 7, 2024

Delisted Tribal Underground Storage Tanks: DELISTED INDIAN UST

Underground Storage Tank (UST) facilities which once appeared on - and have since been removed from - the Regional Tribal/Indian UST lists made available by the United States Environmental Protection Agency (EPA).

Government Publication Date: May 7, 2024

County

Tulare County - CUPA List: CUPA TULARE

The Certified Unified Program Agency (CUPA) unifies and consolidates under one roof the various requirements for businesses handling hazardous materials, generating or treating hazardous wastes, or operating aboveground or underground storage tanks. CUPA thereby enhances consistency, reduces duplication, and simplifies compliance for the regulated public. The Tulare County Environmental Health Division was certified as a CUPA in December, 1996.

Government Publication Date: May 13, 2023

Additional Environmental Record Sources

Federal

PFAS Greenhouse Gas Emissions Data: PFAS GHG

The U.S. Environmental Protection Agency's Greenhouse Gas Reporting Program (GHGRP) collects Greenhouse Gas (GHG) data from large emitting facilities (25,000 metric tons of carbon dioxide equivalent (CO2e) per year), and suppliers of fossil fuels and industrial gases that results in GHG emissions when used. Includes GHG emissions data for facilities that emit or have emitted since 2010 chemicals identified in EPA's CompTox Chemicals Dashboard list of PFAS without explicit structures and list of PFAS structures by DSSTox. PFAS emissions data has been identified for facilities engaged in the following industrial processes: Aluminum Production (GHGRP Subpart F), HCFC-22 Production and HFC-23 Destruction (Subpart O), Electronics Manufacturing (Subpart I), Fluorinated Gas Production (Subpart L), Magnesium Production (Subpart T), Electrical Transmission and Distribution Equipment Use (Subpart DD), and Manufacture of Electric Transmission and Distribution Equipment (Subpart SS). Over time, other industrial processes with required GHGRP reporting may include PFAS emissions data and the list of reportable gases may change over time.

Government Publication Date: Aug 5, 2024

On-Scene Coordinator Response Sites: OSC RESPONSE

This list of On-Scene Coordinator (OSC) Response Sites is provided by the U.S. Environmental Protection Agency (EPA). OSCs are the federal officials responsible for monitoring or directing responses to all oil spills and hazardous substance releases reported to the federal government. OSCs coordinate all federal efforts with, and provide support and information to local, state, and regional response communities. An OSC is an agent of either EPA or the U.S. Coast Guard (USCG), depending on where the incident occurs. EPA's OSCs have primary responsibility for spills and releases to inland areas and waters. USCG OSCs have responsibility for coastal waters and the Great Lakes. In general, an OSC has the following key responsibilities during and after a response: Assessment, Monitoring, Response Assistance, and Evaluation.

Government Publication Date: Apr 4, 2024

Facility Registry Service/Facility Index: FINDS/FRS

The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the U.S. Environmental Protection Agency (EPA).

Government Publication Date: Aug 1, 2024

Toxics Release Inventory (TRI) Program: TRIS

The U.S. Environmental Protection Agency's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of toxic chemicals from U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. There are currently 770 individually listed chemicals and 33 chemical categories covered by the TRI Program. Facilities that manufacture, process or otherwise use these chemicals in amounts above established levels must submit annual reporting forms for each chemical. Note that the TRI chemical list does not include all toxic chemicals used in the U.S. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment. This database includes TRI Reporting Data for calendar years 1987 through 2021 and Preliminary Data for 2022.

Government Publication Date: Sep 20, 2023

PFOA/PFOS Contaminated Sites: PFAS NPL

This list of Superfund Sites with Per- and Polyfluoroalkyl Substances (PFAS) detections is made available by the U.S. Environmental Protection Agency (EPA) in their PFAS Analytic Tools data, previously the list was obtained by EPA FOIA requests. EPA's Office of Land and Emergency Management and EPA Regional Offices maintain what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment. Limitations: Detections of PFAS at National Priorities List (NPL) sites do not mean that people are at risk from PFAS, are exposed to PFAS, or that the site is the source of the PFAS. The information in the Superfund NPL and Superfund Alternative Agreement (SAA) PFAS detection site list is years old and may not be accurate today. Site information such as site name, site ID, and location has been confirmed for accuracy; however, PFAS-related information such as media sampled, drinking water being above the health advisory, or mitigation efforts has not been verified. For Federal Facilities data, the other Federal agencies (OFA) are the lead agency for their data and provided them to EPA.

Government Publication Date: Dec 17, 2024

Federal Agency Locations with Known or Suspected PFAS Detections: PFAS FED SITES

This list of federal agency locations with known or suspected detections of Per- and Polyfluoroalkyl Substances (PFAS) is made available by the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools data. The EPA outlines that these data are gathered from several federal entities, such as the federal Superfund program, Department of Defense (DOD), National Aeronautics and Space Administration (NASA), Department of Transportation (DOT), and Department of Energy (DOE). The dates this data was extracted for the PFAS Analytic Tools range from 2022 to 2024. Sites on this list do not necessarily reflect the source/s of PFAS contamination and detections do not indicate level of risk or human exposure at the site. Agricultural notifications in this data are limited to DOD sites only. At this time, the EPA is aware that this list is not comprehensive of all Federal agencies.

Government Publication Date: Oct 24, 2024

SSEHRI PFAS Contamination Sites: PFAS SSEHRI

This PFAS Contamination Site Tracker database is compiled by the PFAS Project Lab, part of the Social Science Environmental Health Research Institute (SSEHRI) at Northeastern University. According to the SSEHRI, the database records qualitative and quantitative data from each known site of PFAS contamination, including timeline of discovery, sources, levels, health impacts, community response, and government response. The goal of this database is to compile information and support public understanding of the rapidly unfolding issue of PFAS contamination. All data presented was extracted from government websites, news articles, or publicly available documents. Locations for the Known PFAS Contamination Sites are sourced from the PFAS Sites and Community Resources Map by the PFAS-REACH team, credited to PFAS Project Lab, Silent Spring Institute, and PFAS Exchange. Disclaimer: The source conveys the data undergoes regular updates as new information becomes available, some sites may be missing and/or contain information that is incorrect or outdated, as well as their information represents all contamination sites SSEHRI is aware of, not all possible contamination sites. This data is not intended to be used for legal purposes. Access the following source link for the most current information: https://pfasproject.com/pfas-sites-and-community-resources/

Government Publication Date: Jun 27, 2024

National Response Center PFAS Spills: PFAS ERNS

This Per- and Poly-Fluoroalkyl Substances (PFAS) Spills dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The National Response Center (NRC), operated by the U.S. Coast Guard, is the designated federal point of contact for reporting all oil, chemical, and other discharges into the environment, for the United States and its territories. This dataset contains NRC spill information from 1990 to the present that is restricted to records associated with PFAS and PFAS-containing materials. Incidents are filtered to include only records with a "Material Involved" or "Incident Description" related to Aqueous Film Forming Foam (AFFF). The keywords used to filter the data included "AFFF," "Fire Fighting Foam," "Aqueous Film Forming Foam," "Fire Suppressant Foam, "PFAS," "PERFL," "PFOA," "PFOS," and "Genx." Limitations: The data from the NRC website contains initial incident data that has not been validated or investigated by a federal/state response agency. Keyword searches may misidentify some incident reports that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS spills/release incidents.

Government Publication Date: Dec 9, 2024

PFAS NPDES Discharge Monitoring: PFAS NPDES

This list of National Pollutant Discharge Elimination System (NPDES) permitted facilities with required monitoring for Per- and Polyfluoroalkyl (PFAS) Substances is made available via the U.S. Environmental Protection Agency (EPA)'s PFAS Analytic Tools. Any point-source wastewater discharger to waters of the United States must have a NPDES permit, which defines a set of parameters for pollutants and monitoring to ensure that the discharge does not degrade water quality or impair human health. This list includes NPDES permitted facilities associated with permits that monitor for Per- and Polyfluoroalkyl Substances (PFAS), limited to the years 2007 - present. EPA further advises the following regarding these data: currently, fewer than half of states have required PFAS monitoring for at least one of their permittees, and fewer states have established PFAS effluent limits for permittees. For states that may have required monitoring, some reporting and data transfer issues may exist on a state-by-state basis.

Government Publication Date: Dec 16, 2024

Perfluorinated Alkyl Substances (PFAS) from Toxic Release Inventory: PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a per- or polyfluoroalkyl (PFAS) substance included in the U.S. Environmental Protection Agency's (EPA) consolidated PFAS Master List of PFAS Substances. Encompasses Toxics Release Inventory records included in the EPA PFAS Analytic Tools. The EPA's TRI database currently tracks information on disposal or releases of 770 individually listed toxic chemicals and 33 chemical categories from thousands of U.S. facilities and details about how facilities manage those chemicals through recycling, energy recovery, and treatment. This listing includes TRI Reporting Data for calendar years 1987 through 2021 and Preliminary Data for 2022.

Government Publication Date: Sep 20, 2023

PFAS Water Quality Portal Sampling Data: PFAS WATER

This Per- and Poly-Fluoroalkyl Substances (PFAS) Environmental Media Sampling Data is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The Water Quality Portal (WQP), as a cooperative service sponsored by the United States Geological Survey, the EPA, and the National Water Quality Monitoring Council, is part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations, and individuals submit project details and sampling results to this public repository. Limitations: EPA did not carry out the sampling or testing of a majority of the data in the WQP PFAS dataset. EPA can only speak to the accuracy and completeness of the data from projects like the National Aquatic Resource Surveys for which EPA is the data owner/organization. Data may exist within the file on Quality Assurance Project Plans (QAPPs) and the approving agency of the QAPP, if a QAPP is entered.

Government Publication Date: Jul 22, 2024

PFAS TSCA Manufacture and Import Facilities: PFAS TSCA

The U.S. Environmental Protection Agency (EPA) issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. This list is specific only to TSCA Manufacture and Import Facilities with reported per- and poly-fluoroalkyl (PFAS) substances. Data file is sourced from EPA's PFAS Analytic Tools TSCA dataset which includes CDR/Inventory Update Reporting data from 1998 up to 2020. Disclaimer: This data file includes production and importation data for chemicals identified in EPA's CompTox Chemicals Dashboard list of PFAS without explicit structures and list of PFAS structures in DSSTox. Note that some regulations have specific chemical structure requirements that define PFAS differently than the lists in EPA's CompTox Chemicals Dashboard. Reporting information on manufactured or imported chemical substance amounts should not be compared between facilities, as some companies claim Chemical Data Reporting Rule data fields for PFAS information as Confidential Business Information.

Government Publication Date: Jan 5, 2023

PFAS Waste Transfers from RCRA e-Manifest : PFAS E-MANIFEST

This Per- and Poly-Fluoroalkyl Substances (PFAS) Waste Transfers dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. Every shipment of hazardous waste in the U.S. must be accompanied by a shipment manifest, which is a critical component of the cradle-to-grave tracking of wastes mandated by the Resource Conservation and Recovery Act (RCRA). According to the EPA, currently no Federal Waste Code exists for any PFAS compounds. To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: • PFAS • PFOA • PFOS • PERFL • AFFF • GENX • GEN-X (plus the Vermont state-specific waste codes). Limitations: Amount or concentration of PFAS being transferred cannot be determined from the manifest information. Keyword searches may misidentify some manifest records that do not contain PFAS. This dataset should also not be considered to be exhaustive of all PFAS waste transfers.

Government Publication Date: Dec 15, 2024

PFAS Industry Sectors: PFAS IND

This Per- and Poly-Fluoroalkyl Substances (PFAS) Industry Sectors dataset is made available via the U.S. Environmental Protection Agency's (EPA) PFAS Analytic Tools. The EPA developed the dataset from various sources that show which industries may be handling PFAS including: EPA's Enforcement and Compliance History Online (ECHO) records restricted to potential PFAS-handling industry sectors; ECHO records for Fire Training Sites identified where fire-fighting foam may have been used in training exercises; and 14 CFR Part 139 Airports compiled from historic and current records from the FAA Airport Data and Information Portal. Since July 2006, all certificated Part 139 Airports are required to have fire-fighting foam onsite that meet certain military specifications, which to date have been fluorinated (Aqueous Film Forming Foam). Limitations: Inclusion in this dataset does not indicate that PFAS are being manufactured, processed, used, or released by the facility. Listed facilities potentially handle PFAS based on their industrial profile, but are unconfirmed by the EPA. Keyword searches in ECHO for Fire Training sites may misidentify some facilities and should not be considered to be an exhaustive list of fire training facilities in the U.S.

Government Publication Date: Dec 16, 2024

Hazardous Materials Information Reporting System: HMIRS

The Hazardous Materials Incident Reporting System (HMIRS) database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration.

Government Publication Date: May 29, 2024

National Clandestine Drug Labs: NCDL

The U.S. Department of Justice ("the Department"), Drug Enforcement Administration (DEA), provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Nov 30, 2023

Toxic Substances Control Act: TSCA

The U.S. Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule. The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI). EPA CDR collections occur approximately every four years and reporting requirements change per collection.

Government Publication Date: May 12, 2022

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

FTTS Administrative Case Listing: FTTS ADMIN

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

FTTS Inspection Case Listing: FTTS INSP

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

Potentially Responsible Parties List: PRP

Early in the site cleanup process, the U.S. Environmental Protection Agency (EPA) conducts a search to find the Potentially Responsible Parties (PRPs). The EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site. This listing contains PRPs, Noticed Parties, at sites in the EPA's Superfund Enterprise Management System (SEMS).

Government Publication Date: Nov 20, 2024

State Coalition for Remediation of Drycleaners Listing: SCRD DRYCLEANER

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin. Since 2017, the SCRD no longer maintains this data, refer to applicable state source data where available.

Government Publication Date: Nov 08, 2017

Integrated Compliance Information System (ICIS): ICIS

The Integrated Compliance Information System (ICIS) database contains integrated enforcement and compliance information across most of U.S. Environmental Protection Agency's (EPA) programs. The vision for ICIS is to replace EPA's independent databases that contain enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions and a subset of the Permit Compliance System (PCS), which supports the National Pollutant Discharge Elimination System (NPDES). This information is maintained by the EPA Headquarters and at the Regional offices. A future release of ICIS will completely replace PCS and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities that support compliance and enforcement programs, including incident tracking, compliance assistance, and compliance monitoring.

Government Publication Date: Apr 13, 2024

Drycleaner Facilities: FED DRYCLEANERS

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) data as made available by the U.S. Environmental Protection Agency (EPA), sourced from the ECHO Exporter file. The EPA tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

Government Publication Date: May 5, 2024

Delisted Drycleaner Facilities: DELISTED FED DRY

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

Government Publication Date: May 5, 2024

Formerly Used Defense Sites: FUDS

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DOD) is responsible for an environmental restoration. The FUDS Annual Report to Congress (ARC) is published by the U.S. Army Corps of Engineers (USACE). This data is compiled from the USACE's Geospatial FUDS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) FUDS dataset which applies to the Fiscal Year 2021 FUDS Inventory.

Government Publication Date: May 15, 2023

FUDS Munitions Response Sites: FUDS MRS

Boundaries of Munitions Response Sites (MRS), published with the Formerly Used Defense Sites (FUDS) Annual Report to Congress (ARC) by the U.S. Army Corps of Engineers (USACE). An MRS is a discrete location within a Munitions response area (MRA) that is known to require a munitions response. An MRA means any area on a defense site that is known or suspected to contain unexploded ordnance (UXO), discarded military munitions (DMM), or munitions constituents (MC). This data is compiled from the USACE's Geospatial MRS data layers and Homeland Infrastructure Foundation-Level Data (HIFLD) MRS dataset.

Government Publication Date: May 15, 2023

Former Military Nike Missile Sites: FORMER NIKE

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

Government Publication Date: Dec 2, 1984

PHMSA Pipeline Safety Flagged Incidents: PIPELINE INCIDENT

This list of flagged pipeline incidents is made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types. Accidents reported on hazardous liquid gravity lines (§195.13) and reporting-regulated-only hazardous liquid gathering lines (§195.15) and incidents reported on Type R gas gathering (§192.8(c)) are not included in the flagged incident file data.

Government Publication Date: May 6, 2024

Material Licensing Tracking System (MLTS): MLTS

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

Government Publication Date: May 11, 2021

Historic Material Licensing Tracking System (MLTS) sites: HIST MLTS

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

Government Publication Date: Jan 31, 2010

Mines Master Index File: MINES

The Master Index File (MIF) is provided by the United States Department of Labor, Mine Safety and Health Administration (MSHA). This file, which was originally created in the 1970's, contained many Mine-IDs that were invalid. MSHA removes invalid IDs from the MIF upon discovery. MSHA applicable data includes the following: all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970; mine addresses for all mines in the database except for Abandoned mines prior to 1998 from MSHA's legacy system (addresses may or may not correspond with the physical location of the mine itself); violations that have been assessed penalties as a result of MSHA inspections beginning on 1/1/2000; and violations issued as a result of MSHA inspections conducted beginning on 1/1/2000.

Government Publication Date: Feb 5, 2024

Surface Mining Control and Reclamation Act Sites: SMCRA

This inventory of land and water impacted by past mining (primarily legacy coal mining operations) is maintained by the U.S. Department of the Interior's Office of Surface Mining Reclamation and Enforcement (OSMRE), as it provides information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). This inventory contains information on the type and extent of Abandoned Mine Land (AML) Problems, as well as information on the cost associated with the reclamation of those problems. The data is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed. Disclaimer: Per the OSMRE, States and tribes who enter their data into e-AMLIS (AML Inventory System) may truncate their latitude and longitude so the precise location of usually dangerous AMLs is not revealed in an effort to protect the public from searching for these AMLs, most of which are on private property. If more precise location information is needed, please contact the applicable state/tribe of interest.

Government Publication Date: May 20, 2024

Mineral Resource Data System: MRDS

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2016

DOE Legacy Management Sites: LM SITES

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) currently manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The LM manages sites with diverse regulatory drivers (statutes or programs that direct cleanup and management requirements at DOE sites) or as part of internal DOE or congressionally-recognized programs, such as but not limited to: Formerly Utilized Sites Remedial Action Program (FUSRAP), Uranium Mill Tailings Radiation Control Act (UMTRCA Title I, Tile II), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), Decontamination and Decommissioning (D&D), Nuclear Waste Policy Act (NWPA). This site listing includes data exported from the DOE Office of LM's Geospatial Environmental Mapping System (GEMS). GEMS Data disclaimer: The DOE Office of LM makes no representation or warranty, expressed or implied, regarding the use, accuracy, availability, or completeness of the data presented herein.

Government Publication Date: Dec 12, 2023

Alternative Fueling Stations: ALT FUELS

This list of alternative fueling stations is sourced from the Alternative Fuels Data Center (AFDC). The U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy launched the AFDC in 1991 as a repository for alternative fuel vehicle performance data, which provides a wealth of information and data on alternative and renewable fuels, advanced vehicles, fuel-saving strategies, and emerging transportation technologies. The data includes Biodiesel (B20 and above), Compressed Natural Gas (CNG), Electric, Ethanol (E85), Hydrogen, Liquefied Natural Gas (LNG), Propane (LPG), and Renewable Diesel (R20 and above) fuel type locations.

Government Publication Date: Aug 29, 2024

Superfunds Consent Decrees: CONSENT DECREES

This list of Superfund consent decrees is provided by the Department of Justice, Environment & Natural Resources Division (ENRD) through a Freedom of Information Act (FOIA) applicable file. This listing includes Cases filed since 2010 limited to the following: Consent Decrees for CERCLA or Superfund Sites filed and/or as proposed within the ENRD's Case Management System (CMS); and applicable ENRD's Environmental Defense Section (EDS) CERCLA Cases with "Consent" in History Note. CMS may not reflect the latest developments in a case, nor can the agency guarantee the accuracy of the data. ENRD Disclaimer: Congress excluded three discrete categories of law enforcement and national security records from the requirements of the FOIA; response is limited to those records that are subject to the requirements of the FOIA; however, this should not be taken as an indication that excluded records do, or do not, exist.

Government Publication Date: Jun 26, 2024

Air Facility System: AFS

This EPA retired Air Facility System (AFS) dataset contains emissions, compliance, and enforcement data on stationary sources of air pollution. Regulated sources cover a wide spectrum; from large industrial facilities to relatively small operations such as dry cleaners. AFS does not contain data on facilities that are solely asbestos demolition and/or renovation contractors, or landfills. ECHO Clean Air Act data from AFS are frozen and reflect data as of October 17, 2014; the EPA retired this system for Clean Air Act stationary sources and transitioned to ICIS-Air.

Government Publication Date: Oct 17, 2014

Registered Pesticide Establishments: SSTS

This national list of active EPA-registered foreign and domestic pesticide and/or device-producing establishments is based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that each producing establishment must place its EPA establishment number on the label or immediate container of each pesticide, active ingredient or device produced. An EPA establishment number on a pesticide product label identifies the EPA registered location where the product was produced. The list of establishments is made available by the U.S. Environmental Protection Agency (EPA).

Government Publication Date: Feb 29, 2024

Polychlorinated Biphenyl (PCB) Transformers: PCBT

Locations of Transformers Containing Polychlorinated Biphenyls (PCBs) registered with the United States Environmental Protection Agency. PCB transformer owners must register their transformer(s) with EPA. Although not required, PCB transformer owners who have removed and properly disposed of a registered PCB transformer may notify EPA to have their PCB transformer de-registered. Data made available by EPA.

Government Publication Date: Oct 15, 2019

Polychlorinated Biphenyl (PCB) Notifiers: PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: May 23, 2024

Power Plants: POWER PLANTS

This list of power plants is provided by the U.S. Energy Information Administration (EIA). The listing includes operable electric generating plants in the United States by energy source, originating from the EIA-860, Annual Electric Generator Report; EIA-860M, Monthly Update to the Annual Electric Generator Report; and EIA-923, Power Plant Operations Report. It includes all operable plants by energy source with a combined nameplate capacity of 1 megawatt or more that are operating, are on standby, or out of service for short- or long-term.

Government Publication Date: Apr 15, 2024

State

PFAS Sampling Locations: PFAS SAMPLING

This data is sourced from the State Water Board's GeoTracker Per- and Polyfluoroalkyl Substances (PFAS) Map tool which contains individual sampling points (i.e., soil boring, groundwater monitoring well, drinking water well for municipal drinking water systems, etc.) or a site location with PFAS analytical data. Includes analytical results that are finalized and submitted electronically by the Responsible Parties via GeoTracker's Electronic Submittal of Information Portal, and after it's accepted by a Regional Water Quality Control Board.

Government Publication Date: Dec 6, 2024

Dry Cleaning Facilities: DRYCLEANERS

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial, linen supply, commercial laundry, dry cleaning and pressing machines - Coin Operated Laundry and Dry Cleaning. This is provided by the Department of Toxic Substance Control.

Government Publication Date: Dec 20, 2021

Delisted Drycleaners: DELISTED DRYCLEANERS

Sites removed from the list of drycleaner related facilities that have EPA ID numbers, made available by the California Department of Toxic Substance Control.

Government Publication Date: Jan 31, 2022

Non-Toxic Dry Cleaning Incentive Program: DRYC GRANT

A list of grant recipients of the Non-Toxic Dry Cleaning Incentive Program made available by the California Air Resources Board (CARB). The program provides grants to eligible dry cleaning businesses to assist them in transitioning away from PERC machines to alternative non-toxic and non-smog forming technologies.

Government Publication Date: Jan 31, 2022

PFAS GeoTracker Cleanup Sites: PFAS GT CLEANUPS

A list of applicable cleanup sites from the State Water Resources Control Board's (SWRCB) GeoTracker data management system where one or more of the potential contaminants of concern are identified in the PFAS Structure List and/or PFAS Chemicals Without Explicit Structure List made available by the United States Environmental Protection Agency (US EPA).

Government Publication Date: Jul 4, 2024

PFOA/PFOS Groundwater: PFAS GW

A list of water wells from the Groundwater Ambient Monitoring and Assessment Program (GAMA) Groundwater Information System with the groundwater chemical perfluorooctanoic acid (PFOA) (NL = 0.014 UG/L) or perfluorooctanoic sulfonate (PFOS) (NL = 0.013 UG/L). The GAMA Groundwater Information System search is made available by California Water Boards.

Government Publication Date: Dec 1, 2024

PFAS Investigations: PFAS INVEST

This list of potential Per- and Polyfluoroalkyl Substance (PFAS) sites is compiled from the California State Water Resources Control Board's (SWRCB) PFAS Investigations Map tool. The SWRCB issued investigative orders, per California Water Code (CWC) Section 13267 and/or 13383, to these sites. Orders were also issued to the public water systems to sample wells in the vicinity of these locations. Military facilities have been identified by the Department of Defense (DOD) as part of their efforts to investigate PFAS per the Defense Environmental Restoration Program (DERP) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The data includes locations for Airports, Chrome Plating Facilities, Landfills, Publicly Owned Treatment Works, Refineries and Bulk Terminals, DOD Facilities, and Monitored Drinking Water Wells being investigated for potential PFAS.

Government Publication Date: Jan 23, 2024

Hazardous Waste and Substances Site List - Site Cleanup: HWSS CLEANUP

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. This list is published by California Department of Toxic Substance Control.

Government Publication Date: Mar 15, 2023

Toxic Pit Cleanup Act Sites: TOXIC PITS

The Toxic Pits Cleanup Act (TPCA) list identifies sites suspected of containing hazardous substances where cleanup has not yet been completed. This list was maintained by the State Water Resources Control Board (SWRCB), is not longer maintained, and updates are not planned.

Government Publication Date: Jul 1, 1995

List of Hazardous Waste Facilities Subject to Corrective Action: DTSC HWF

This is a list of hazardous waste facilities identified in Health and Safety Code (HSC) § 25187.5. These facilities are those where Department of Toxic Substances Control (DTSC) has taken or contracted for corrective action because a facility owner/operator has failed to comply with a date for taking corrective action in an order issued under HSC § 25187, or because DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment.

Government Publication Date: Jul 18, 2016

EnviroStor Inspection, Compliance, and Enforcement: INSP COMP ENF

A list of permitted facilities with inspections and enforcements tracked by the California Department of Toxic Substance Control's (DTSC) EnviroStor data management system.

Government Publication Date: Nov 23, 2023

School Property Evaluation Program Sites: SCH

A list of sites registered with The Department of Toxic Substances Control (DTSC) School Property Evaluation and Cleanup (SPEC) Division. SPEC is responsible for assessing, investigating and cleaning up proposed school sites. The Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy the new school.

Government Publication Date: Sep 25, 2024

California Hazardous Material Incident Report System (CHMIRS): CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS). This listing has been made available by the California Governor's Office of Emergency Services (Cal OES).

Government Publication Date: Oct 21, 2024

Historical California Hazardous Material Incident Report System (CHMIRS): HIST CHMIRS

A list of reported hazardous material incidents, spills, and releases from the California Hazardous Material Incident Report System (CHMIRS) prior to 1993. This list has been made available by the California Office of Emergency Services (OES).

Government Publication Date: Jan 1, 1993

Handlers from Hazardous Waste Manifest Data: HAZNET

A list of handlers not otherwise classified as Treatment, Storage, Disposal facilities (TSDF) or generators from the facilities and manifests data made available by the California Department of Toxic Substances Control (DTSC) in their Hazardous Waste Tracking System (HWTS).

Government Publication Date: Oct 24, 2016

Generators from Hazardous Waste Manifest Data: HAZ GEN

List of handlers listed as having generated waste from the facilities and manifests data made available by the California Department of Toxic Substances Control (DTSC) in their Hazardous Waste Tracking System (HWTS).

Government Publication Date: Dec 31, 2017

TSDF from Hazardous Waste Manifest Data: HAZ TSD

List of Treatment, Storage, and Disposal Facilities (TSDFs) from the facilities and manifests data made available by the California Department of Toxic Substances Control (DTSC) in their Hazardous Waste Tracking System (HWTS).

Government Publication Date: Dec 31, 2017

Historical Hazardous Waste Manifest Data: HIST MANIFEST

A list of historic hazardous waste manifests received by the Department of Toxic Substances Control (DTSC) from year the 1980 to 1992. The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.

Government Publication Date: Dec 31, 1992

DTSC Registered Hazardous Waste Transporters: HW TRANSPORT

The California Department of Toxic Substances Control (DTSC) maintains this list of Registered Hazardous Waste Transporters.

Government Publication Date: Oct 5, 2024

Registered Waste Tire Haulers: WASTE TIRE

This list of registered waste tire haulers is maintained by the California Department of Resources Recycling and Recovery.

Government Publication Date: Oct 28, 2024

California Medical Waste Management Program Facility List: MEDICAL WASTE

This list of Medical Waste Management Program Facilities is maintained by the California Department of Public Health. The Medical Waste Management Program (MWMP) regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). The MWMP permits and inspects all medical waste off-site treatment facilities, medical waste transporters, and medical waste transfer stations. This list contains transporters, treatment, and transfer facilities.

Government Publication Date: Sep 5, 2024

Historical Cortese List: HIST CORTESE

List of sites which were once included on the Cortese list. The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements for providing information about the location of hazardous sites.

Government Publication Date: Nov 13, 2008

Cease and Desist Orders and Cleanup and Abatement Orders: CDO/CAO

The California Environment Protection Agency "Cortese List" of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO). This list contains many CDOs and CAOs that do NOT concern the discharge of wastes that are hazardous materials. Many of the listed orders concern, as examples, discharges of domestic sewage, food processing wastes, or sediment that do not contain hazardous materials, but the Water Boards' database does not distinguish between these types of orders.

Government Publication Date: Dec 6, 2021

California Environmental Reporting System (CERS) Hazardous Waste Sites: CERS HAZ

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the following regulatory programs: Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, RCRA LQ HW Generator. The CalEPA oversees the statewide implementation of the Unified Program which applies regulatory standards to protect Californians from hazardous waste and materials.

Government Publication Date: Oct 28, 2024

Delisted Environmental Reporting System (CERS) Hazardous Waste Sites: DELISTED HAZ

This database contains a list of sites that were removed from the California Environmental Protection Agency (CalEPA) in the following regulatory programs: Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, RCRA LQ HW Generator.

Government Publication Date: Nov 29, 2018

Sites in GeoTracker: GEOTRACKER

GeoTracker is the State Water Resource Control Boards' data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater. This is a list of sites in GeoTracker that aren't otherwise categorized as LUST, Land Disposal Sites (LDS), Cleanup Sites, or sites having Waste Discharge Requirements (WDR). This listing includes program types such as Underground Injection Control (UIC), Confined Animal Facilities (CAF), Irrigated Lands Regulatory Program, plans, and non-case information.

Government Publication Date: Jul 4, 2024

Mines Listing: MINE

This list includes mine site locations extracted from the Mines Online database, maintained by the California Department of Conservation. Mines Online (MOL) is an interactive web map designed with GIS features that provide information such as the mine name, mine status, commodity sold, location, and other mine specific data. Please note: Mine location information is provided to assist experts in determining the location of mine operators in accordance with California Civil Code section 1103.4 and reflects information reported by mine operators in annual reports provided under Public Resources Code section 2207. While the Division of Mine Reclamation (DMR) attempts to populate MOL with accurate location information, the DMR cannot guarantee the accuracy of operator reported location information.

Government Publication Date: Oct 3, 2024

Recorded Environmental Cleanup Liens: LIEN

The California Department of Toxic Substance Control (DTSC) maintains this list of liens placed upon real properties. A lien is utilized by the DTSC to obtain reimbursement from responsible parties for costs associated with the remediation of contaminated properties.

Government Publication Date: Dec 18, 2023

Waste Discharge Requirements: WASTE DISCHG

List of sites in California State Water Resources Control Board (SWRCB) Waste Discharge Requirements (WDRs) Program in California, made available by the SWRCB via GeoTracker. The WDR program regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Government Publication Date: Jul 4, 2024

Toxic Pollutant Emissions Facilities: EMISSIONS

A list of criteria and toxic pollutant emissions data for facilities in California made available by the California Environmental Protection Agency - Air Resources Board (ARB). Risk data may be based on previous inventory submittals. The toxics data are submitted to the ARB by the local air districts as requirement of the Air Toxics "Hot Spots" Program.

Government Publication Date: Dec 31, 2021

Clandestine Drug Lab Sites: CDL

The Department of Toxic Substances Control (DTSC) maintains a listing of drug lab sites. DTSC is responsible for removal and disposal of hazardous substances discovered by law enforcement officials while investigating illegal/clandestine drug laboratories.

Government Publication Date: Jan 19, 2021

Tribal

No Tribal additional environmental record sources available for this State.

County

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

EXHIBIT C-2

GENERAL PUBLIC RECORDS

California Environmental Reporting System (CERS) — Business Activities

Site Identification

JOHN DOMINGOS HAY HARVESTING INC
122 W PAIGE AVE
TULARE, CA 93274
County
Tulare

CERS ID
10603828
EPA ID Number
CAL000255837

Submittal Status

Submitted on 6/2/2019 by *Staff of Tulare County Environmental Health* of JOHN DOMINGOS HAY HARVESTING INC (TULARE, CA)
Comments by submitter: There is regulator-entered information in this submittal
Submittal was ***Accepted***; Processed on 6/2/2019 by *MARTENS, JOEL* for Tulare County Environmental Health

Hazardous Materials

Does your facility have on site (for any purpose) at any one time, hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or is regulated under more restrictive inventory local reporting requirements (shown below if present); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	**Yes**

Underground Storage Tank(s) (UST)

Does your facility own or operate underground storage tanks?	**No**

Hazardous Waste

Is your facility a Hazardous Waste Generator?	**Yes**
Does your facility treat hazardous waste on-site?	**No**
Is your facility's treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	**No**
Does your facility consolidate hazardous waste generated at a remote site?	**No**
Does your facility need to report the closure/removal of a tank that was classified as hazardous waste and cleaned on-site?	**No**
Does your facility generate in any single calendar month 1,000 kilograms (kg) (2,200 pounds) or more of federal RCRA hazardous waste, or generate in any single calendar month greater than 1 kg (2.2 pounds) of RCRA acute hazardous waste; or generate more than 100 kg (220 pounds) of spill cleanup materials contaminated with RCRA acute hazardous waste.	**No**
Is your facility a Household Hazardous Waste (HHW) Collection site?	**No**

Excluded and/or Exempted Materials

Does your facility recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC 25143.2)?	**No**

Aboveground Petroleum Storage

Does your facility own or operate aboveground petroleum storage tanks or containers AND: * have a total aboveground petroleum storage capacity of 1,320 gallons or more, OR * have one or more petroleum tanks in an underground area?	**Yes**

Regulated Substances

Does your facility have Regulated Substances stored onsite in quantities greater than the threshold quantities established by the California Accidental Release prevention Program (CalARP)?	**No**

Additional Information

No additional comments provided.

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **JOHN DOMINGOS HAY HARVESTING INC**
Facility Name **JOHN DOMINGOS HAY HARVESTING INC**
122 W PAIGE AVE , TULARE 93274

Chemical Location **INSIDE SHOP**

CERS ID **10603828**
Facility ID **FA1348962**
Status **Submitted** on 6/2/2019 4:46 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	ARGON/CARBON DIOXIDE	**Cu. Feet**	**381**	**381**	200			ARGON	75%		7440-37-1
	CAS No	State: Gas	Storage Container: Cylinder		Pressue: > Ambient	Waste Code		CARBON DIOXIDE	25%		124-38-9
		Type: Mixture	Days on Site: 365		Temperature: Ambient						
	OXYGEN	**Cu. Feet**	**616**	**154**	308		- Fire - Pressure Release				
	CAS No 7782-44-7	State: Gas	Storage Container: Cylinder		Pressue: > Ambient	Waste Code					
		Type: Pure	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **JOHN DOMINGOS HAY HARVESTING INC**
Facility Name **JOHN DOMINGOS HAY HARVESTING INC**
122 W PAIGE AVE , TULARE 93274

Chemical Location **NORTH SIDE OF PROPERTY**

CERS ID **10603828**
Facility ID **FA1348962**
Status **Submitted** on 6/2/2019 4:46 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	DIESEL FUEL #2	**Gallons**	**7500**	**10000**	5000						
	CAS No: 68476-34	State: Liquid	Storage Container: Aboveground Tank		Pressue: Ambient	Waste Code					
		Type: Pure	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **JOHN DOMINGOS HAY HARVESTING INC**
Facility Name **JOHN DOMINGOS HAY HARVESTING INC**
122 W PAIGE AVE , TULARE 93274

Chemical Location **SOUTH SIDE OF PROPERTY**

CERS ID **10603828**
Facility ID **FA1348962**
Status **Submitted** on 6/2/2019 4:46 PM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	PROPANE, LIQUIFIED PETROLEUM GAS	Gallons	**1600**	**1000**	1000		- Fire - Pressure Release				
	CAS No: 74-98-6	State: Liquid Type: Pure	Storage Container: Aboveground Tank Days on Site: 365		Pressue: > Ambient Temperature: Ambient	Waste Code					

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **JOHN DOMINGOS HAY HARVESTING INC**
Facility Name **JOHN DOMINGOS HAY HARVESTING INC**
122 W PAIGE AVE , TULARE 93274

Chemical Location **WEST OF SHOP**

CERS ID **10603828**
Facility ID **FA1348962**
Status **Submitted** on 6/2/2019 4:46 PM

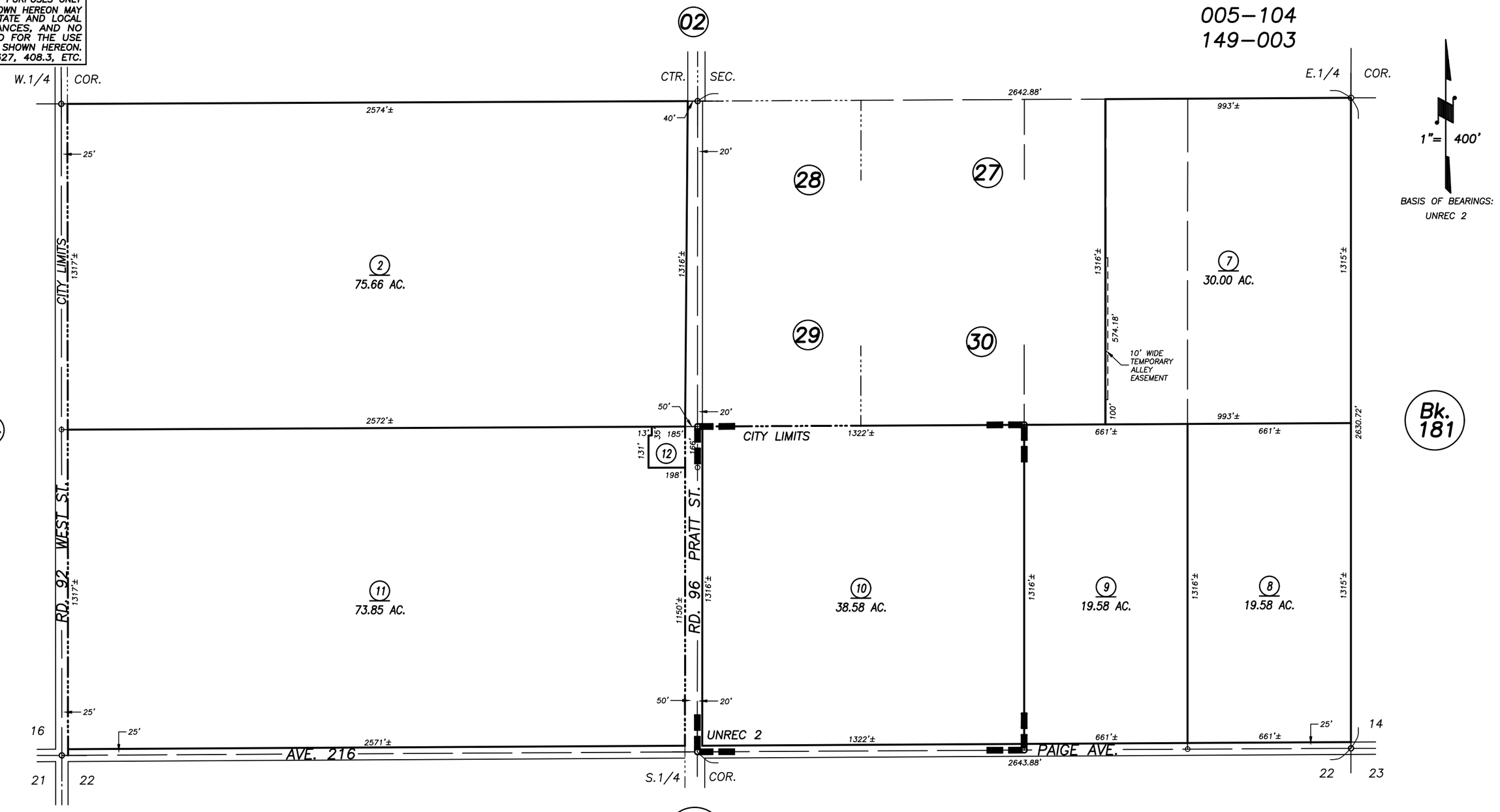
DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	DRAINED USED OIL FILTERS CAS No	**Gallons** State: Solid Type: Waste	**55** Storage Container: Steel Drum Days on Site: 365	**55**	15 Pressue: Ambient Temperature: Ambient	Waste Code		WASTE OIL COMPONENTS	10%		
	ENGINE OIL CAS No	**Gallons** State: Liquid Type: Mixture	**150** Storage Container: Aboveground Tank Days on Site: 365	**200**	100 Pressue: Ambient Temperature: Ambient	Waste Code		HIGHLY REFINED MINDERAL OIL (C15-C50)	100%		
	HYDRAULIC OIL CAS No	**Gallons** State: Liquid Type: Mixture	**150** Storage Container: Aboveground Tank Days on Site: 365	**200**	100 Pressue: Ambient Temperature: Ambient	Waste Code		HIGHLY REFINED PETROLEUM OILS	100%		
	WASTE ABSORBENT/SAW DUST CAS No	**Gallons** State: Solid Type: Waste	**25** Storage Container: Steel Drum Days on Site: 365	**55**	15 Pressue: Ambient Temperature: Ambient	25 Waste Code		REFINED BASE OILS, FUEL, DIRT, WATER, ADDITIVES	100%		
	WASTE OIL CAS No	**Gallons** State: Liquid Type: Waste	**250** Storage Container: Aboveground Tank Days on Site: 365	**250**	50 Pressue: Ambient Temperature: Ambient	400 Waste Code	- Chronic health	REFINED BASE OILS, FUEL, DIRT, WATER, ADDITIVES			

S1/2, SEC.15, T.20S., R.24E., M.D.B.&M.

Tax Area Codes 174–03
005–089
005–104
149–003

DISCLAIMER

THIS MAP WAS PREPARED FOR LOCAL PROPERTY ASSESSMENT PURPOSES ONLY AND THE PARCELS SHOWN HEREON MAY NOT COMPLY WITH STATE AND LOCAL SUBDIVISION ORDINANCES, AND NO LIABILITY IS ASSUMED FOR THE USE OF THE INFORMATION SHOWN HEREON. R & T CODE SEC. 327, 408.3, ETC.



1"= 400'

BASIS OF BEARINGS: UNREC 2

Bk. 181

Bk. 187

POR. TULARE IRRIGATION DISTRICT, UNREC 1 (SEC.15, ETC.)
POR. 199 DEVELOPMENT PARTNERS SURVEY, UNREC 2

VICINITY OF TULARE
ASSESSOR'S MAPS BK. 174 , PG. 03
COUNTY OF TULARE, CALIFORNIA, U.S.A.

NOTE: Assessor's Parcel Numbers Shown in Circles (1)
Assessor's Block Numbers Shown in Ellipses (123)

CAD CONVERSION	09/15/2015	ARL
REVISION	DATE	TECH

APPENDIX D

INTERVIEW RECORDS

RECORD OF COMMUNICATION						
Project Name: Proposed Development			Location (city): Tulare, California			
Communication with: Landon Fernandes						
Of: Owner of Subject Property						
Location: Tulare, CA			Phone: 559 471-6262			
Communication via	**X**	Telephone		Letter		In Person
Recorded By: Paul Humphrey			Of: Paul Humphrey, EP			
At: (time): 0830			On (date): January 20, 2025			
Re: Property Use						
Summary of Communication: Mr. Fernandes was not aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the Subject Property; any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Subject Property; or any notices from a governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.						
Conclusions/Required Action/Follow-up: None						

RECORD OF COMMUNICATION						
Project Name: Proposed Development				Location (city): Tulare, California		
Communication with: Clerk						
Of: Tulare County Department of Environmental Health						
Location: Visalia, CA				Phone: 559 624-7400		
Communication via	**X**	Telephone		Letter		In Person
Recorded By: Paul Humphrey				Of: Paul Humphrey, EP		
At: (time): 1030				On (date): January 22, 2025		
Re: Records						
Summary of Communication: Records were identified and provided for review.						
Conclusions/Required Action/Follow-up: None						

RECORD OF COMMUNICATION						
Project Name: Proposed Development			Location (city): Tulare, California			
Communication with: Clerk						
Of: Tulare County Planning and Development Department						
Location: Visalia, CA			Phone: 559			
Communication via		Telephone		Letter	**X**	In Person
Recorded By: Paul Humphrey			Of: Paul Humphrey, EP			
At: (time): 1500			On (date): January 24, 2025			
Re: Records						
Summary of Communication: No records of land use limitations associated with the Subject Property.						
Conclusions/Required Action/Follow-up: None						

RECORD OF COMMUNICATION						
Project Name: Proposed Development				Location (city): Tulare, California		
Communication with: Receptionist						
Of: CalFire						
Location: Tulare, CA				Phone: 559-802-9800		
Communication via	**X**	Telephone		Letter		In Person
Recorded By: Paul Humphrey				Of: Paul Humphrey, EP		
At: (time): 1515				On (date): January 24, 2025		
Re: Records						
Summary of Communication: According to the clerk, no record was identified for the Subject Property and the area is under the jurisdiction of the Tulare County Department of Environmental Health.						
Conclusions/Required Action/Follow-up: None						

APPENDIX E

CLIENT PROVIDED DOCUMENTATION

NOT APPLICABLE FOR THIS REPORT

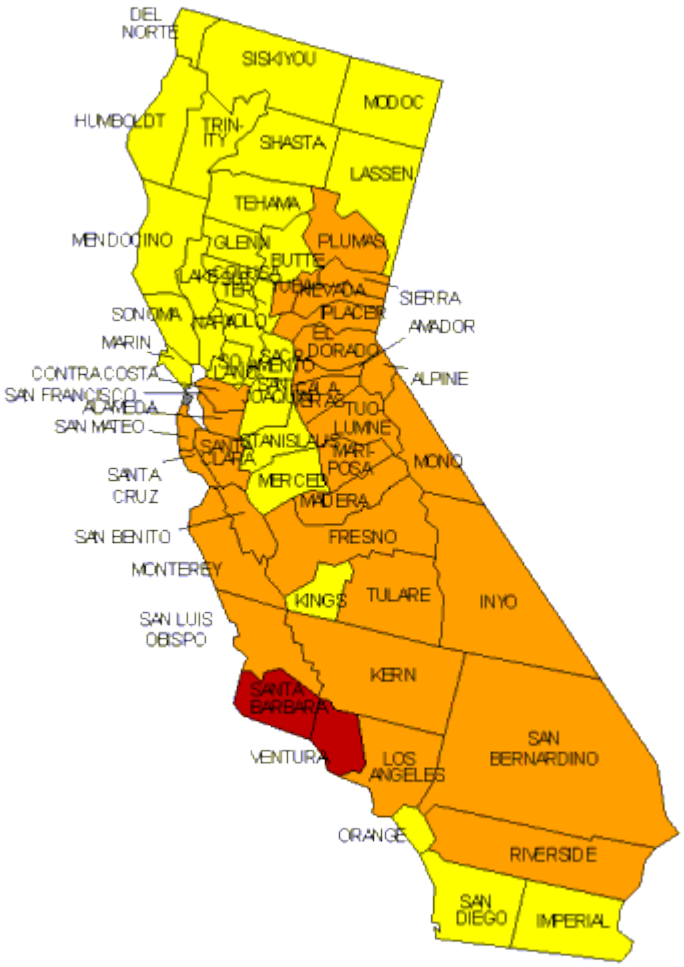
APPENDIX F

OTHER SUPPORTING DOCUMENTATION

Zone 1 Highest Potential (greater than 4 pCi/L)

Zone 2 Moderate Potential (from 2 to 4 pCi/L)

Zone 3 Low Potential (less than 2 pCi/L)



PAUL HUMPHREY, EP
7402 E. CLINTON AVENUE
FRESNO, CALIFORNIA 93737
(559) 977-9813

RADON MAP

N↑

APPENDIX G

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Paul J. Humphrey, REPA, CAC

Education:	College of the Sequoias, Visalia, California
	Associate of Science in Biology, 1994
Licenses/Registrations:	Registered Environmental Property Assessor #827718
	Certified Asbestos Consultant, #03-3495
Years of Experience:	Twenty-Six

Summary of Professional Experience

Mr. Humphrey has more than twenty-five years experience in the environmental field including asbestos surveys, asbestos abatement monitoring and project design, environmental site assessment, soil and groundwater assessment and is an Environmental Professional as defined by the Environmental Protection Agency. Mr. Humphrey has conducted more than 2,000 Phase I Environmental Site Assessments of commercial, industrial, agricultural and multi-family residential properties in California, Nevada, Arizona, and Washington. Mr. Humphrey has more than two years experience in the ground-up development and management of a Hazardous Building Materials Department for a local environmental and engineering firm. Mr. Humphrey has also provided regulatory guidance, assessments, and asbestos surveys and monitoring to utility companies, flood control districts, public works departments, and branches of the military as part of facility expansion projects as well as new site development.

Mr. Humphrey's experience has included preliminary environmental assessments and various soil and groundwater investigations for highway expansion for the State of California Department of Transportation. Projects for the State of California highway expansion also included asbestos surveys of bridges and overpasses.

For a national environmental consulting firm, Mr. Humphrey served as Project Coordinator, where he performed and managed asbestos abatement oversight projects for national clients. Mr. Humphrey has also conducted environmental site assessments on multi-site industrial and commercial properties for various national financial institutions, developers, and property management companies. Assessments included limited and comprehensive surveys for asbestos, lead-based paint, lead-in-drinking-water and radon gas emissions.

Appendix F

Phase II Limited Site Assessment

March 21, 2025 Project No. 014-25012

Mr. Scott Rosenstock
BF Central Valley Holdings, LLC
18300 Redmond Way, Suite 120
Redmond, Washington 98052
scott@bluefern.com

RE: Phase II Limited Site Assessment
Fernandes Subdivision
122 West Paige Avenue
APN 174-030-008
Tulare, California 93274

Dear Mr. Rosenstock:

Pursuant to the request of BF Central Valley Holdings, LLC (client), Krazan & Associates, Inc. (Krazan) has conducted this Phase II Limited Site Assessment (LSA) at the referenced property (subject site). The work was based on a client request contained in an email dated January 9, 2025, a *Phase I Environmental Site Assessment* (ESA) dated February 5, 2025, prepared by Paul Humphrey, EP, and a telephone conversation with client on February 17, 2025. The work was conducted in connection with a real estate transaction and not at the request of a regulatory agency.

BACKGROUND

January 9, 2025 Client Email

Based on a letter dated December 2024 from the Department of Toxic Substances Control (DTSC), the client, in the email dated January 9, 2025, requested that Krazan conduct testing to determine if environmentally persistent pesticides/herbicides may be present in soil on the subject site.

February 5, 2025 Phase I ESA

The Humphrey Phase I ESA concluded that two (2) Recognized Environmental Conditions (RECs) were identified as follows:

1. Stained soil was observed in the central and west open area near the Shop Building. The report concluded that the likely cause of the staining was maintenance of the former farm equipment.

2. The Storage Building located northwest of the Shop Building was possibly utilized for storage or agricultural chemicals, hazardous substances and/or petroleum products.

The Phase I ESA also discussed three (3) Business Environmental Risks including the fact that the subject property was historically and is currently used for agricultural purposes. The Phase I ESA stated that if redevelopment activities for residential use are planned, it should be determined whether sampling related to the former agricultural use is required by the local planning department or other applicable oversight agency.

Client Telephone Conversation – February 17, 2025

In a telephone conversation on February 17, 2025, the client stated that since the nearby properties did not analyze for CHs, then we could remove CHs from the analysis for the subject site. The client also stated that they would provide the Paul Humphreys Phase I ESA for Krazan's review. Krazan stated that additional sampling and analysis would be necessary to address the RECs.

PURPOSE

The purpose of the Phase II LSA was to address the RECs and assess the presence/concentrations, if any, of pesticides and arsenic in soil at the subject site.

SCOPE OF WORK

Pre-Field Activities

A site-specific health and safety plan was prepared including an appropriate level of personal protection equipment for Krazan personnel, to cover sampling activities.

Industry standard methods and protocols for sample collection, sampling equipment decontamination, sample storage, transport, hold times, chain-of-custody, etc. were implemented.

Site Safety protocols, including appropriate level of personal protection equipment, were maintained as was a proper exclusion zone around the work area.

Soil samples were collected in 1.5-inch by six (6)-inch stainless steel sleeves and were immediately placed in an iced chest. The soil samples were labeled and identified on a chain of custody. The soil samples were transferred to an analytical laboratory under chain of custody protocol.

Soil samples will be analyzed by a State-approved laboratory for constituents of potential concern (COPCs) as specified below. Various COPCs, depending upon the area of concern, in soil investigated during this assessment and their respective analytical methods include the following:

- Total petroleum hydrocarbons carbon chain (TPH-cc) by EPA Method 81015M;
- Volatile organic compounds (VOCs) by EPA Method 8260B;
- CAM 17 Metals by EPA Method 6020B/7471A;
- Polychlorinated biphenyls (PCBs) by EPA Method 8082;
- Organochlorine pesticides (OCPs) by EPA Method 8081A; and,
- Arsenic and Lead by EPA Method 6020B.

Investigation of Agricultural Cultivation Soil Sampling

On February 19, 2025, Krazan conducted fieldwork for sampling agricultural land. Based on the generalized number of sampling locations recommended for a 20-acre site by the Department of Toxic Substances Control (DTSC) in their August 7, *2008, Interim Guidance for Sampling Agricultural Properties*, a total of 30 discrete soil samples were collected from the subject site.

The 30 discrete soil samples were composited in the field into seven (7), four (4)-part composite soil samples and one (1) and one (1), two (2)-part composite sample, as shown on Figure 2A. Each of the eight (8) composite soil samples (CS1 through CS8) was analyzed for OCPs.

A total of eight (8) discrete soil samples (D1 though D8) were collected from the agricultural cultivation areas on the subject site and submitted for laboratory analysis for arsenic.

One (1), four (4)-part duplicate composite sample CS8-DUP) was collected and analyzed for OCPs, and one (1) discrete duplicate sample was collected and analyzed for arsenic (D2 DUP).

Investigation of RECs – Stained Soil

On February 19, 2025, two (2) soil borings (SP1 and SP2) were completed using hand-held equipment in the stained soil areas to a depth of 2.5 feet below ground surface (bgs), as shown on Figure 2B. Two (2) soil samples per boring were collected at depths of 0.5 and 2.0 feet bgs. The soil samples were transported to SunStar Laboratories, Inc. of Lake Forest, California. under strict chain-of-custody protocols. The four (4) soil samples were analyzed for TPH-cc, VOCs and metals.

Investigation of RECs – Storage Building

On February 19, 2025. four (4) soil samples (SB1, SB2, SB3, and SB4) were collected along the drip lines of the Storage Building, two (2) on each side of the roof line, as shown Figure 2B. One (1) sample (SB5) was collected near the Storage Building entrance. The five (5) soil samples were collected from ground surface to 0.5 feet bgs and were analyzed for OCPs, PCBs, lead, and arsenic.

APPLICABLE REGULATORY AGENCY REFERENCES

Krazan's evaluation of the results and findings associated with the soil and soil vapor included referencing the California Department of Toxic Substances Control (DTSC), Human and Ecological Risk Office's (HERO) *Human Health Risk Assessment (HHRA) Note Number 3, DTSC-modified Screening Levels* (DTSC-SLs). The DTSC has developed modified screening levels based on the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for use in the human risk assessment process at hazardous waste sites and permitted facilities. The DTSC and USEPA Screening levels do not include established levels for soil impacted by TPH.

Krazan also evaluated analytical results for soil sampling by comparing results to the July 2019 Rev. 2 San Francisco Regional Water Quality Control Board's (SFRWQCB) Commercial and Construction Worker Environmental Screening Levels (ESLs) referenced in the technical document titled, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*. According to the RWQCB's, ESLs are conservative. Under most circumstances and within limits described by the SFRWQCB, the presence of a chemical in soil at concentrations below the corresponding Commercial/Industrial Exposure ESL for the respective constituent can be assumed not to pose a significant, long-term (chronic) threat to human health and the environment.

REPORT AND DISCUSSION OF FINDINGS

Former Agricultural Land Use - Shallow Soil Sampling

Analytical results for the eight (8), four (4)-part composite soil samples (CS1 through CS8) submitted for laboratory analysis for OCPs were reported as not detected (ND) at or above laboratory method detection (MDLs), shown on Table 1. The result for CS8-DUP were consistent with the OCP result from sample CS8.

Arsenic was present in discrete samples D1 through D8 ranging in concentration from 2.2 milligrams per kilogram (mg/kg) in sample D4 to 3.0 mg/kg in sample D3, as shown on Table 2. The arsenic concentrations reported for samples D1 through D8 exceeded their Residential DTSC SL and RL for arsenic. The results for D2-DUP were consistent with the OCP results from sample D2. Based on referenced studies, the DTSC considers natural background concentrations in California for arsenic (12.0 mg/kg and 12.7 mg/kg).[1] Therefore, the reported concentrations of arsenic would not appear to represent an environmental concern for the site.

Investigation of RECs – Stained Soil

The analytical results for TPH as gasoline (TPH-g), TPH as diesel (TPH-d) and TPH as motor oil (TPH-mo) in borings SP1 and SP2 were reported as ND at or above the laboratory MDLs with the exception that TPH-mo was detected at a concentration of 300 mg/kg and 360 mg/kg in sample SP1 at 0.5 and 2.0 feet bgs, respectively, as shown on Table 3. The reported TPH-mo concentration did not exceed the Commercial/Industrial ESL for TPH-mo but did exceed the and Construction Worker ESL.

The analytical results for VOCs were reported as ND at or above the laboratory MDLs, as shown on Table 4.

Various **metals** were reported including barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc, as shown on Table 5. None of the reported concentrations of metals exceeded their respective Residential RSLs. the laboratory MDL for arsenic, at 0.8 mg/kg, exceeds the Residential RSL concentrations established for arsenic. However, the MDL for arsenic is below 12 mg/kg arsenic concentrations that the California Department of Toxic Substances Control (DTSC) considers natural background concentrations in California.[1] Thus, although the laboratory MDL for arsenic is above the Commercial/Industrial and Construction Worker ESLs, the laboratory MDL for arsenic is below the accepted background level for arsenic in California. Thus, the arsenic in these samples is not expected to pose a significant environmental concern.

Investigation of RECs – Storage Building

Analytical results for samples from SB1 through SB5 were reported as ND at or above laboratory MDLs, as shown on Table 1.

The analytical results for PCBs were reported at ND at or above the laboratory NMDLs, as shown on Table 6.
The analytical results for arsenic for samples SB1 through SB5 ranged from 2.7 mg/kg in samples SB1 and SB4 to 45 mg/kg in sample SB3, as shown on Table 2. Arsenic, at 45 mg/kg exceed the Residential RSL.

The analytical results for lead for samples SB1 through SB5 ranged from 22 mg/kg in sample SB1 to 200 mg/kg in sample SB5, as shown on Table 7. None of the lead results exceeds the Residential RSL for lead, but the lead concentration for SB5 is at the RSL.

[1] Human Health Risk Assessment (HHRA) Note 11, Southern California Ambient Arsenic Data. DTSC, December 28, 2020. .

The laboratory report is provided in Appendix A.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings in the field and the laboratory analytical reports for the soil samples collected and analyzed from the subject site during this investigation, no evidence of a known significant impact (based on a comparison with established regulatory screening levels) was identified with respect to the COPCs, with the exception of the following:

- The arsenic concentration of 45 mg/kg reported for sample SB3.
- Although the TPH-co concentration in samples SP1 did not exceed the Commercial/Industrial ESL for TPH-mo, the TPH-mo concentration is increasing with depth.
- The lead concentration in sample SB5 was *at* the Residential ESL and thus, needs further investigation.

Based on the conclusions discussed above, additional subsurface investigation is recommended for the areas of samples SB3, SP1 and SB5.

LIMITATIONS

This soil investigation conducted at the subject site was not intended to characterize or define the extent of possible impact beneath the subject site; rather, this work was conducted to assess the presence or absence of significant concentrations of COPCs in shallow subsurface soil. The findings of this report were based upon the results of our field and laboratory investigations, along with the interpretation of subsurface conditions associated with our exploratory soil borings and soil samples. Therefore, the data are accurate only to the degree implied by review of the data obtained and by professional interpretation.

The soil sample locations were plotted using available maps (Figure 2) and existing site features. Therefore, the location of the samples should be considered accurate only to the degree implied by the methods used to locate them. The composite soil sample locations for OCPs and arsenic were established using ArcGIS software based on imagery from the National Aerial Imagery Program. These locations were then exported to and located in the field using the ArcCollector mobile application. Therefore, the location of the soil samples should be within 15 feet of the points displayed on Figure 2.

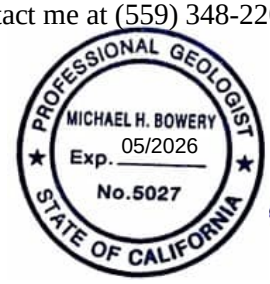
Chemical testing was done by laboratories certified by the State of California Department of Health Services. The results of the chemical testing are accurate only to the degree of care of ensuring the testing accuracy and the representative nature of the soil samples obtained.

This subsurface investigation of the subject site has been limited in scope. This type of assessment is undertaken with the calculated risk that the presence, full nature and extent of contamination would not be revealed by methods employed. Therefore, no warranty is given; either expressed or implied that hazardous material contamination or buried structures, which would not have been disclosed through this investigation, do not exist at the subject site. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used.

This assessment and report were authorized by and prepared for the exclusive use of our client. Unauthorized use of or reliance on the information contained in this report without the expressed written consent of Krazan & Associates, Inc. is strictly prohibited.

CLOSING

We appreciate the opportunity to be of service. If you have any questions, or if we can be of further assistance, please feel free to contact me at (559) 348-2200.



Respectfully Submitted,
KRAZAN & ASSOCIATES, INC.

Michael H. Bowery, PG 5027
Senior Project Manager



Remington R. Alexander, PE 93713
Environmental Regional Manager

MHB/RRA/mlt

Attachments

Tables

Figure 1	Vicinity Map
Figure 2A	Site Map – Agriuctural Field
Figure 2B	Site Map – Buildings

Appendix A Laboratory Analytical Report

Table 1

Fernandes Subdivision

122 West Paige Avenue, Tulare, California 93274

February 19, 2025 - Soil Sample Results - OCPs

Concentrations are expressed in milligrams per kilogram (mg/kg)

Analyte	Sample ID														Residential
	CS1	CS2	CS3	CS4	CS5	CS6	CS7	CS8	CS8-DUP	SB1	SB2	SB3	SB4	SB5	RSLs
alpha-BHC	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	<0.00056	0.086 c
gamma-BHC (Lindane)	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	<0.00096	0.57 c
beta-BHC	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	<0.0014	0.3 c
delta-BHC	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	--
Heptachlor	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	<0.00059	0.13 c
Aldrin	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	0.039 c
Heptachlor epoxide	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	0.07 c
gamma-Chlordane	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	36 n/c
alpha-Chlordane	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	<0.00083	36 n/c
Endosulfan I	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	<0.00081	470 n/c
4,4´-DDE	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	<0.00078	2 c
Dieldrin	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	0.034 c
Endrin	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	19 n/c
4,4´-DDD	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	1.9 n/c
Endosulfan II	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	470 n/c
4,4´-DDT	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	1.9 c
Endrin aldehyde	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	--
Endosulfan sulfate	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	380 n/c
Methoxychlor	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	4100 n/c
Endrin ketone	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	--
Toxaphene	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	2.1 c

OCPs = Organochlorine Pesticides by EPA Method 8081

RSL = United States Environmental Protection Agency, Regional Screening Level Summary Table (TR=1E-06, HQ=1) May 2024

Bolded = Concentrations reported are higher than the laboratory method detection limit (MDL).

Underlined = Concentrations are reported higher than RSLs

Italicized = Not-detected; the MDL is displayed.

-- = Not established

n/c = Non-cancerous

c = cancerous

Table 2

Fernandes Subdivision

122 West Paige Avenue, Tulare, California 93274

February 19, 2025 - Soil Sample Results - Arsenic

Concentrations are expressed in milligrams per kilogram (mg/kg)

Sample ID	**Analyte** Arsenic
D1	**2.5**
D2	**2.7**
D2-DUP	**2.7**
D3	**3.0**
D4	**2.2**
D5	**2.4**
D6	**2.2**
D7	**2.5**
D8	**2.3**
SB1	**2.7**
SB2	**2.8**
SB3	**45**
SB4	**2.7**
SB5	**5.8**
Residential RSL	0.68 c

Arsenic = Arsenic analyzed by EPA Method 6020B

RSL = United States Environmental Protection Agency, Regional Screening Level Summary Table (TR=1E-06, HQ=1) May 2024

Bolded = Concentrations reported are higher than the laboratory method detection limit (MDL).

Underlined = Concentrations are reported higher than RSL

Italicized = Not-detected; the MDL is displayed.

-- = Not established

n/c = Non-cancerous

c = cancerous

Table 3

Fernandes Subdivision

122 West Paige Avenue, Tulare, California 93274

February 19, 2025 - Soil Sample Results - TPH-cc

Concentrations are expressed in milligrams per kilogram (mg/kg)

Sample ID	Analyte		
	TPH-g C6-C12 (GRO)	TPH-d C13-C28 (DRO)	TPH-mo C29-C40 (MORO)
SP1-0.5'	*<0.76*	*<0.66*	**300**
SP1-2.0'	*<0.76*	*<0.66*	**360**
SP2-0.5'	*<0.76*	*<0.66*	*<0.56*
SP2-2.0'	*<0.76*	*<0.66*	*<0.56*
Residential ESLs	430 n/c	260 n/c	1.2E+04 n/c
Construction Worker ESLs	250 n/c	96 n/c	250 n/c

TPH-cc = Total Petroleum Hydrocarbon Carbon Chains by EPA Method 8015

GRO = Gasoline Range Organics, DRO = Diesel Range Organics, MORO = Motor Oil Range Organics

ESL = San Francisco Regional Water Quality Control Board, Residential and Construction Worker Environmental Screening Levels, January 2019 (Rev.2)

Bolded = Concentrations reported are higher than the laboratory method detection limit (MDL).

Underlined = Concentrations are reported higher than RSLs

Italicized = Not-detected; the MDL is displayed.

-- = Not established

n/c = Non-cancerous

c = cancerous

Table 4
Fernandes Subdivision
122 West Paige Avenue, Tulare, California 93274
February 19, 2025 - Soil Sample Results - VOCs
Concentrations are expressed in milligrams per kilogram (mg/kg)

Analyte	Sample ID				Residential
	SP1-0.5'	SP1-2.0'	SP2-0.5'	SP2-2.0'	**RSLs**
Bromobenzene	<0.00025	<0.00025	<0.00025	<0.00025	290 n/c
Bromochloromethane	<0.00041	<0.00041	<0.00041	<0.00041	150 n/c
Bromodichloromethane	<0.00014	<0.00014	<0.00014	<0.00014	0.29 c
Bromoform	<0.00019	<0.00019	<0.00019	<0.00019	19 c
Bromomethane	<0.00020	<0.00020	<0.00020	<0.00020	6.8 n/c
n-Butylbenzene	<0.00013	<0.00013	<0.00013	<0.00013	3900 n/c
sec-Butylbenzene	<0.00016	<0.00016	<0.00016	<0.00016	7800 n/c
tert-Butylbenzene	<0.00016	<0.00016	<0.00016	<0.00016	7800 n/c
Carbon tetrachloride	<0.00019	<0.00019	<0.00019	<0.00019	0.65 c
Chlorobenzene	<0.00018	<0.00018	<0.00018	<0.00018	280 n/c
Chloroethane	<0.00050	<0.00050	<0.00050	<0.00050	--
Chloroform	<0.000081	<0.000081	<0.000081	<0.000081	0.32 c
Chloromethane	<0.00026	<0.00026	<0.00026	<0.00026	110 n/c
2-Chlorotoluene	<0.00012	<0.00012	<0.00012	<0.00012	--
4-Chlorotoluene	<0.00019	<0.00019	<0.00019	<0.00019	--
Dibromochloromethane	<0.00012	<0.00012	<0.00012	<0.00012	8.3 c
1,2-Dibromo-3-chloropropane	<0.00045	<0.00045	<0.00045	<0.00045	0.0053 c
1,2-Dibromoethane (EDB)	<0.00014	<0.00014	<0.00014	<0.00014	0.036 c
Dibromomethane	<0.00020	<0.00020	<0.00020	<0.00020	24 n/c
1,2-Dichlorobenzene	<0.00013	<0.00013	<0.00013	<0.00013	1800 n/c
1,3-Dichlorobenzene	<0.00015	<0.00015	<0.00015	<0.00015	--
1,4-Dichlorobenzene	<0.00012	<0.00012	<0.00012	<0.00012	2.6 c
Dichlorodifluoromethane	<0.00032	<0.00032	<0.00032	<0.00032	87 n/c
1,1-Dichloroethane	<0.00016	<0.00016	<0.00016	<0.00016	3.6 c
1,2-Dichloroethane	<0.00031	<0.00031	<0.00031	<0.00031	0.46 c
1,1-Dichloroethene	<0.00018	<0.00018	<0.00018	<0.00018	230 n/c
cis-1,2-Dichloroethene	<0.00014	<0.00014	<0.00014	<0.00014	160 n/c
trans-1,2-Dichloroethene	<0.00017	<0.00017	<0.00017	<0.00017	70 n/c
1,2-Dichloropropane	<0.00012	<0.00012	<0.00012	<0.00012	2.5 c
1,3-Dichloropropene	<0.00017	<0.00017	<0.00017	<0.00017	1600 n/c
2,2-Dichloropropane	<0.00016	<0.00016	<0.00016	<0.00016	--
1,1-Dichloropropene	<0.00014	<0.00014	<0.00014	<0.00014	--
cis-1,3-Dichloropropene	<0.00013	<0.00013	<0.00013	<0.00013	1.8 c
trans-1,3-Dichloropropene	<0.00019	<0.00019	<0.00019	<0.00019	1.8 c
Hexachlorobutadiene	<0.00012	<0.00012	<0.00012	<0.00012	1.2 c
Isopropylbenzene	<0.000097	<0.000097	<0.000097	<0.000097	--
p-Isopropyltoluene	<0.000099	<0.000099	<0.000099	<0.000099	--
Methylene chloride	<0.0016	<0.0016	<0.0016	<0.0016	57 c
Naphthalene	<0.00014	<0.00014	<0.00014	<0.00014	--
n-Propylbenzene	<0.00018	<0.00018	<0.00018	<0.00018	3800 n/c
Styrene	<0.00013	<0.00013	<0.00013	<0.00013	6000 n/c
1,1,2,2-Tetrachloroethane	<0.00022	<0.00022	<0.00022	<0.00022	0.6 c
1,1,1,2-Tetrachloroethane	<0.00016	<0.00016	<0.00016	<0.00016	2 c
Tetrachloroethene	<0.00019	<0.00019	<0.00019	<0.00019	24 c
1,2,3-Trichlorobenzene	<0.00014	<0.00014	<0.00014	<0.00014	63 n/c
1,2,4-Trichlorobenzene	<0.00011	<0.00011	<0.00011	<0.00011	24 c
1,1,2-Trichloroethane	<0.00025	<0.00025	<0.00025	<0.00025	1.1 c
1,1,1-Trichloroethane	<0.00017	<0.00017	<0.00017	<0.00017	8100 n/c
Trichloroethene	<0.00019	<0.00019	<0.00019	<0.00019	0.94 c
Trichlorofluoromethane	<0.00011	<0.00011	<0.00011	<0.00011	23000 n/c
1,2,3-Trichloropropane	<0.00026	<0.00026	<0.00026	<0.00026	0.0051 c
1,3,5-Trimethylbenzene	<0.000064	<0.000064	<0.000064	<0.000064	270 n/c
1,2,4-Trimethylbenzene	<0.00018	<0.00018	<0.00018	<0.00018	300 n/c
Vinyl chloride	<0.00014	<0.00014	<0.00014	<0.00014	0.059 c
Benzene	<0.00013	<0.00013	<0.00013	<0.00013	1.2 c
Toluene	<0.00012	<0.00012	<0.00012	<0.00012	4900 n/c
Ethylbenzene	<0.00014	<0.00014	<0.00014	<0.00014	5.8 c
m,p-Xylene	<0.00029	<0.00029	<0.00029	<0.00029	550 n/c
o-Xylene	<0.00013	<0.00013	<0.00013	<0.00013	650 n/c
Acetone	<0.0010	<0.0010	<0.0010	<0.0010	7.0E+04 n/c
Methyl ethyl ketone	<0.0020	<0.0020	<0.0020	<0.0020	2.7E+04 n/c
Methyl isobutyl ketone	<0.0020	<0.0020	<0.0020	<0.0020	3.3E+04 n/c
2-Hexanone (MBK)	<0.0010	<0.0010	<0.0010	<0.0010	200 n/c

VOCs = Volitile Organic Compounds by EPA Method 8260
RSL = United States Environmental Protection Agency, Regional Screening Level Summary Table (TR=1E-06, HQ=1) May 2024
Bolded = Concentrations reported are higher than the laboratory method detection limit (MDL).
<u>Underlined</u> = Concentrations are reported higher than Commercial/Industrial ESLs
Italicized = Not-detected; the MDL is displayed.
-- = Not established
n/c = Non-cancerous
c = cancerous

Table 5
Fernandes Subdivision
122 West Paige Avenue, Tulare, California 93274
February 19, 2025 - Soil Sample Results - CAM 17 Metals
Concentrations are expressed in milligrams per kilogram (mg/kg)

Analyte	Sample ID				Residential RSLs
	SP1-0.5'	SP1-2.0'	SP2-0.5'	SP2-2.0'	
Antimony	*<1.8*	*<1.8*	*<1.8*	*<1.8*	31 n/c
Arsenic	*<0.80*	*<0.80*	*<0.80*	*<0.80*	0.68 c
Barium	**62**	**79**	**74**	**73**	1.5E+04 n/c
Beryllium	*<0.40*	*<0.40*	*<0.40*	*<0.40*	160 n/c
Cadmium	*<0.40*	*<0.40*	*<0.40*	*<0.40*	7.1 n/c
Chromium	**7.4**	**11**	**9.8**	**9**	8.5E+04 n/c (III), 0.3 c (IV)
Cobalt	**3.4**	**5.0**	**4.7**	**5.1**	23 n/c
Copper	**8.7**	**6.9**	**7.0**	**7.2**	3,100 n/c
Lead	**30**	*<0.70*	**24**	*<0.70*	200
Mercury	*<0.080*	*<0.080*	*<0.080*	*<0.080*	11 n/c
Molybdenum	*<0.40*	*<0.40*	*<0.40*	*<0.40*	390 n/c
Nickel	**3.2**	**6.1**	**4.5**	**6.0**	1,400 n/c
Selenium	*<0.70*	*<0.70*	*<0.70*	**5.2**	390 n/c
Silver	*<0.50*	*<0.50*	*<0.50*	*<0.50*	390 n/c
Thallium	*<1.2*	*<1.2*	*<1.2*	*<1.2*	0.78 n/c
Vanadium	**20**	**27**	**24**	**26**	390 n/c
Zinc	**57**	**29**	**52**	**29**	2.3E+04 n/c

CAM17 Metals = Metals analyzed by EPA Method 6010B; Mercury analyzed by EPA Method 7471A
RSL = United States Environmental Protection Agency, Regional Screening Level Summary Table (TR=1E-06, HQ=1) May 2024
Bolded = Concentrations reported are higher than the laboratory method detection limit (MDL).
Underlined = Concentrations are reported higher than Commercial/Industrial ESLs
Italicized = Not-detected; the MDL is displayed.
-- = Not established
n/c = Non-cancerous
c = cancerous

Table 6

Fernandes Subdivision

122 West Paige Avenue, Tulare, California 93274

February 19, 2025 - Soil Sample Results -PCBs

Concentrations are expressed in milligrams per kilogram (mg/kg)

Analyte	Sample ID					Residential
	SB1	SB2	SB3	SB4	SB5	**RSLs**
Aroclor-1016	*<0.0018*	*<0.018*	*<0.018*	*<0.0018*	*<0.018*	4.1 n/c
Aroclor-1221	*<0.0018*	*<0.018*	*<0.018*	*<0.0018*	*<0.018*	0.2 c
Aroclor-1232	*<0.0018*	*<0.018*	*<0.018*	*<0.0018*	*<0.018*	0.17 c
Aroclor-1242	*<0.0018*	*<0.018*	*<0.018*	*<0.0018*	*<0.018*	0.23 c
Aroclor-1248	*<0.0018*	*<0.018*	*<0.018*	*<0.0018*	*<0.018*	0.23 c
Aroclor-1254	*<0.0018*	*<0.018*	*<0.018*	*<0.0018*	*<0.018*	0.24 c
Aroclor-1260	*<0.0018*	*<0.018*	*<0.018*	*<0.0018*	*<0.018*	35 n/c

PCBs = Polychlorinated Biphenyls by EPA Method 8082

RSL = United States Environmental Protection Agency, Regional Screening Level Summary Table (TR=1E-06, HQ=1) May 2024

Bolded = Concentrations reported are higher than the laboratory method detection limit (MDL).

Underlined = Concentrations are reported higher than Commercial/Industrial ESLs

Italicized = Not-detected; the MDL is displayed.

-- = Not established

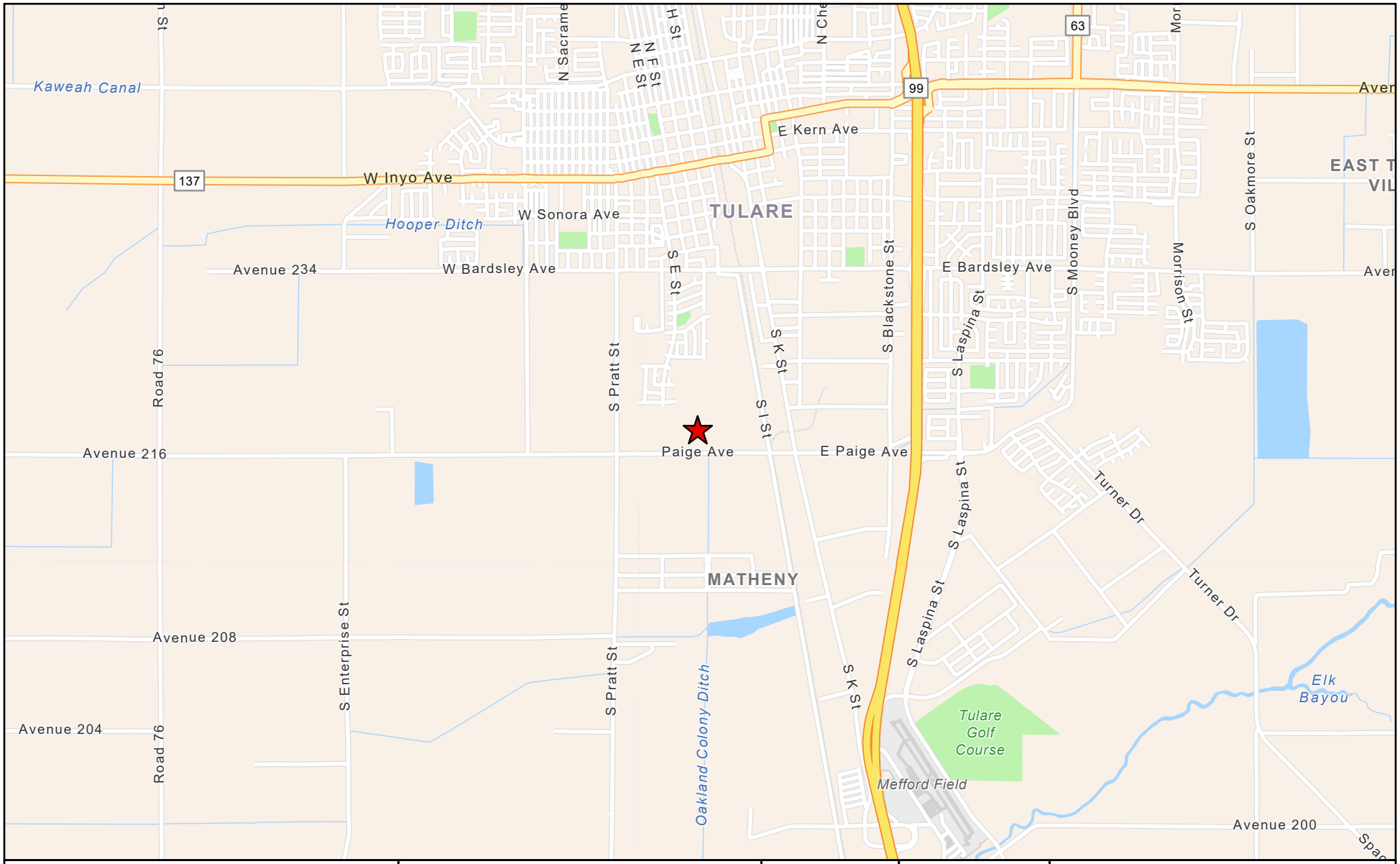
n/c = Non-cancerous

c = cancerous

Table 7
Fernandes Subdivision
122 West Paige Avenue, Tulare, California 93274
February 19, 2025 - Soil Sample Results - Lead
Concentrations are expressed in milligrams per kilogram (mg/kg)

Sample ID	Analyte Lead
SB1	**66**
SB2	**22**
SB3	**41**
SB4	**18**
SB5	**200**
Residential RSL	200

Lead = Lead analyzed by EPA Method 6010
RSL = United States Environmental Protection Agency, Regional Screening Level Summary Table (TR=1E-06, HQ=1) May 2024
Bolded = Concentrations reported are higher than the laboratory method detection limit (MDL).
Underlined = Concentrations are reported higher than RSL
Italicized = Not-detected; the MDL is displayed.
-- = Not established
n/c = Non-cancerous
c = cancerous



LEGEND

Project Location

N

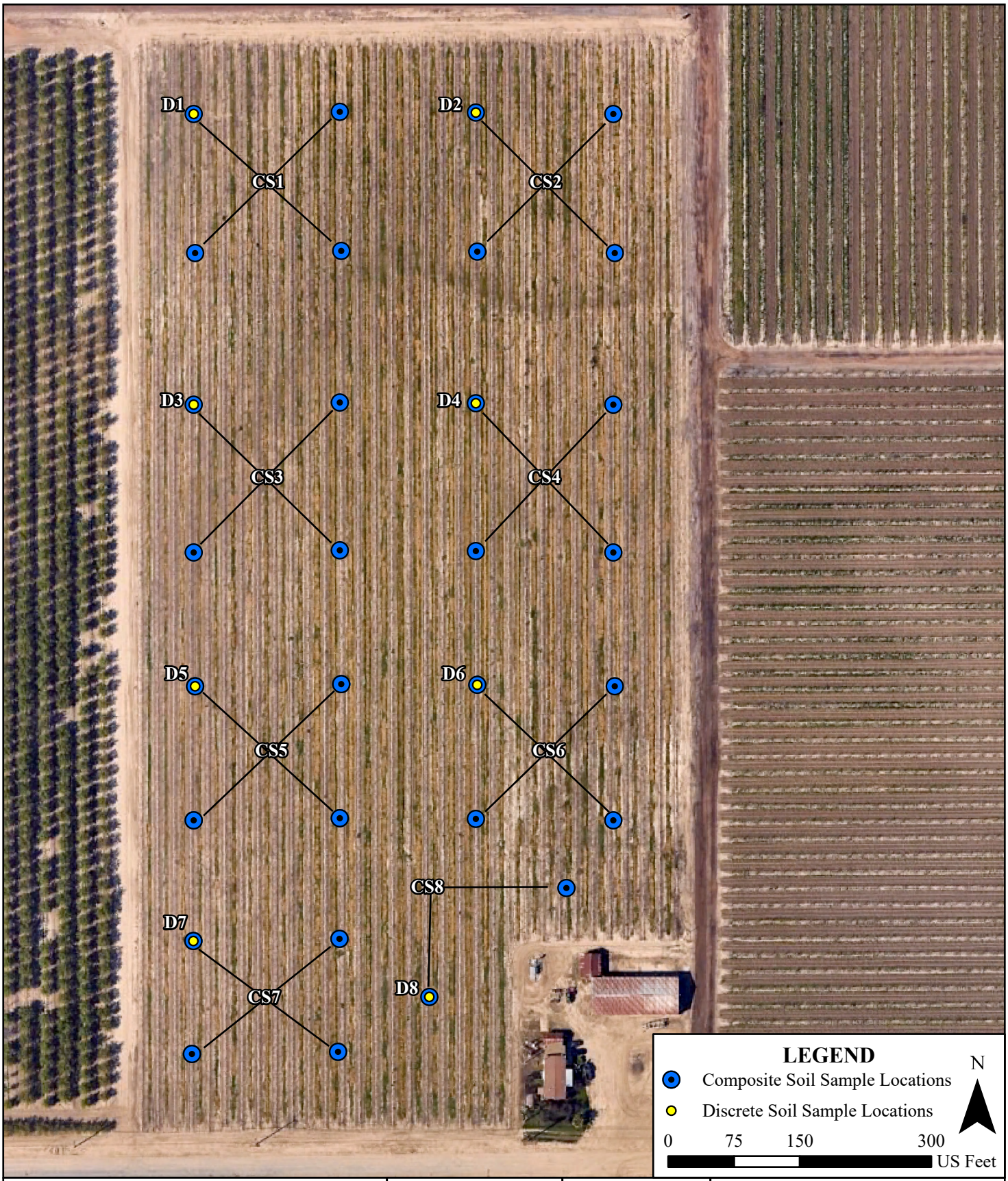
0 0.38 0.75 1.5 Miles

VICNINITY MAP		**Scale:** 1" = 0.75 Miles	**Date:** March 2025
Phase II Limited Site Assessment **Fernandez Subdivision** 122 West Paige Avenue APN 174-030-008 (19.58 Acres) Tulare, California 93274		**Drawn By:** DD	**Approved By:** DD
		Project No: 014-25012	**Figure No:** 1

Krazan

SITE DEVELOPMENT ENGINEERS

With Offices Serving the Western United States



SOIL SAMPLE LOCATION MAP **AGRICULTURAL FIELD**	**Scale:** 1" = 150'	**Date:** March 2025	Krazan SITE DEVELOPMENT ENGINEERS *With Offices Serving the Western United States*
Phase II Limited Site Assessment **Fernandez Subdivision** 122 West Paige Avenue APN 174-030-008 (19.58 Acres) Tulare, California 93274	**Drawn By:** DD	**Approved By:** MB	
	Project No: 014-25012	**Figure No.** 2A	



LEGEND

Discrete Soil Sample Locations

N

0 7.5 15 30 US Feet

SOIL SAMPLE LOCATION MAP - BUILDINGS

Phase II Limited Site Assessment
Fernandez Subdivision
122 West Paige Avenue
APN 174-030-008 (19.58 Acres)
Tulare, California 93274

Scale:	Date:
1" = 15'	March 2025
Drawn By:	**Approved By:**
DD	MB
Project No:	**Figure No:**
014-25012	2B

Krazan

SITE DEVELOPMENT ENGINEERS

With Offices Serving the Western United States

Appendix A

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

04 March 2025

Mike Bowery
Krazan, Clovis
215 West Dakota Avenue
Clovis, CA 93612

RE: Fernandes Subdivision

Enclosed are the results of analyses for samples received by the laboratory on 02/20/25 11:41. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joann Marroquin For Jeff Lee
Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
D1	T250860-01	Soil	02/19/25 07:35	02/20/25 11:41
D2	T250860-02	Soil	02/19/25 08:15	02/20/25 11:41
D2-DUP	T250860-03	Soil	02/19/25 07:40	02/20/25 11:41
D3	T250860-04	Soil	02/19/25 07:40	02/20/25 11:41
D4	T250860-05	Soil	02/19/25 08:20	02/20/25 11:41
D5	T250860-06	Soil	02/19/25 07:45	02/20/25 11:41
D6	T250860-07	Soil	02/19/25 08:25	02/20/25 11:41
D7	T250860-08	Soil	02/19/25 07:50	02/20/25 11:41
D8	T250860-09	Soil	02/19/25 08:30	02/20/25 11:41
CS1	T250860-10	Soil	02/19/25 08:10	02/20/25 11:41
CS2	T250860-11	Soil	02/19/25 08:55	02/20/25 11:41
CS3	T250860-12	Soil	02/19/25 08:05	02/20/25 11:41
CS4	T250860-13	Soil	02/19/25 08:50	02/20/25 11:41
CS5	T250860-14	Soil	02/19/25 08:00	02/20/25 11:41
CS6	T250860-15	Soil	02/19/25 08:45	02/20/25 11:41
CS7	T250860-16	Soil	02/19/25 07:55	02/20/25 11:41
CS8	T250860-17	Soil	02/19/25 08:35	02/20/25 11:41
CS8-DUP	T250860-18	Soil	02/19/25 08:35	02/20/25 11:41
SP1-0.5'	T250860-19	Soil	02/19/25 09:40	02/20/25 11:41
SP1-2.0'	T250860-20	Soil	02/19/25 09:45	02/20/25 11:41
SP2-0.5'	T250860-21	Soil	02/19/25 09:50	02/20/25 11:41
SP2-2.0'	T250860-22	Soil	02/19/25 09:55	02/20/25 11:41
SB1	T250860-23	Soil	02/19/25 10:00	02/20/25 11:41
SB2	T250860-24	Soil	02/19/25 10:01	02/20/25 11:41
SB3	T250860-25	Soil	02/19/25 10:02	02/20/25 11:41
SB4	T250860-26	Soil	02/19/25 10:03	02/20/25 11:41

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB5	T250860-27	Soil	02/19/25 10:04	02/20/25 11:41

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

DETECTIONS SUMMARY

Sample ID: D1 **Laboratory ID:** T250860-01

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**2.5**	0.050	mg/kg	6020 ICP-MS	

Sample ID: D2 **Laboratory ID:** T250860-02

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**2.7**	0.050	mg/kg	6020 ICP-MS	

Sample ID: D2-DUP **Laboratory ID:** T250860-03

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**2.7**	0.050	mg/kg	6020 ICP-MS	

Sample ID: D3 **Laboratory ID:** T250860-04

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**3.0**	0.050	mg/kg	6020 ICP-MS	

Sample ID: D4 **Laboratory ID:** T250860-05

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**2.2**	0.050	mg/kg	6020 ICP-MS	

Sample ID: D5 **Laboratory ID:** T250860-06

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**2.4**	0.050	mg/kg	6020 ICP-MS	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Sample ID: D6 **Laboratory ID:** T250860-07

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**2.2**	0.050	mg/kg	6020 ICP-MS	

Sample ID: D7 **Laboratory ID:** T250860-08

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**2.5**	0.050	mg/kg	6020 ICP-MS	

Sample ID: D8 **Laboratory ID:** T250860-09

Analyte	Result	Reporting Limit	Units	Method	Notes
Arsenic	**2.3**	0.050	mg/kg	6020 ICP-MS	

Sample ID: CS1 **Laboratory ID:** T250860-10

No Results Detected

Sample ID: CS2 **Laboratory ID:** T250860-11

No Results Detected

Sample ID: CS3 **Laboratory ID:** T250860-12

No Results Detected

Sample ID: CS4 **Laboratory ID:** T250860-13

No Results Detected

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Sample ID: CS5 **Laboratory ID:** T250860-14

No Results Detected

Sample ID: CS6 **Laboratory ID:** T250860-15

No Results Detected

Sample ID: CS7 **Laboratory ID:** T250860-16

No Results Detected

Sample ID: CS8 **Laboratory ID:** T250860-17

No Results Detected

Sample ID: CS8-DUP **Laboratory ID:** T250860-18

No Results Detected

Sample ID: SP1-0.5' **Laboratory ID:** T250860-19

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**330**	10	mg/kg	EPA 8015B	D-06
Barium	**62**	1.0	mg/kg	EPA 6010b	
Chromium	**7.4**	2.0	mg/kg	EPA 6010b	
Cobalt	**3.4**	2.0	mg/kg	EPA 6010b	
Copper	**8.7**	1.0	mg/kg	EPA 6010b	
Lead	**30**	3.0	mg/kg	EPA 6010b	
Nickel	**3.2**	2.0	mg/kg	EPA 6010b	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Sample ID: SP1-0.5' **Laboratory ID:** T250860-19

Analyte	Result	Reporting Limit	Units	Method	Notes
Vanadium	**20**	5.0	mg/kg	EPA 6010b	
Zinc	**57**	1.0	mg/kg	EPA 6010b	

Sample ID: SP1-2.0' **Laboratory ID:** T250860-20

Analyte	Result	Reporting Limit	Units	Method	Notes
C29-C40 (MORO)	**360**	10	mg/kg	EPA 8015B	D-06
Barium	**79**	1.0	mg/kg	EPA 6010b	
Chromium	**11**	2.0	mg/kg	EPA 6010b	
Cobalt	**5.0**	2.0	mg/kg	EPA 6010b	
Copper	**6.9**	1.0	mg/kg	EPA 6010b	
Nickel	**6.1**	2.0	mg/kg	EPA 6010b	
Vanadium	**27**	5.0	mg/kg	EPA 6010b	
Zinc	**29**	1.0	mg/kg	EPA 6010b	

Sample ID: SP2-0.5' **Laboratory ID:** T250860-21

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**74**	1.0	mg/kg	EPA 6010b	
Chromium	**9.8**	2.0	mg/kg	EPA 6010b	
Cobalt	**4.7**	2.0	mg/kg	EPA 6010b	
Copper	**7.0**	1.0	mg/kg	EPA 6010b	
Lead	**24**	3.0	mg/kg	EPA 6010b	
Nickel	**4.5**	2.0	mg/kg	EPA 6010b	
Vanadium	**24**	5.0	mg/kg	EPA 6010b	
Zinc	**52**	1.0	mg/kg	EPA 6010b	

Sample ID: SP2-2.0' **Laboratory ID:** T250860-22

Analyte	Result	Reporting Limit	Units	Method	Notes
Barium	**73**	1.0	mg/kg	EPA 6010b	
Chromium	**9.0**	2.0	mg/kg	EPA 6010b	
Cobalt	**5.1**	2.0	mg/kg	EPA 6010b	
Copper	**7.2**	1.0	mg/kg	EPA 6010b	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Sample ID: SP2-2.0' **Laboratory ID:** T250860-22

Analyte	Result	Reporting Limit	Units	Method	Notes
Nickel	**6.0**	2.0	mg/kg	EPA 6010b	
Selenium	**5.2**	5.0	mg/kg	EPA 6010b	
Vanadium	**26**	5.0	mg/kg	EPA 6010b	
Zinc	**29**	1.0	mg/kg	EPA 6010b	

Sample ID: SB1 **Laboratory ID:** T250860-23

Analyte	Result	Reporting Limit	Units	Method	Notes
Lead	**66**	3.0	mg/kg	EPA 6010b	
Arsenic	**2.7**	0.050	mg/kg	6020 ICP-MS	

Sample ID: SB2 **Laboratory ID:** T250860-24

Analyte	Result	Reporting Limit	Units	Method	Notes
Lead	**22**	3.0	mg/kg	EPA 6010b	
Arsenic	**2.8**	0.050	mg/kg	6020 ICP-MS	

Sample ID: SB3 **Laboratory ID:** T250860-25

Analyte	Result	Reporting Limit	Units	Method	Notes
Lead	**41**	3.0	mg/kg	EPA 6010b	
Arsenic	**45**	0.050	mg/kg	6020 ICP-MS	

Sample ID: SB4 **Laboratory ID:** T250860-26

Analyte	Result	Reporting Limit	Units	Method	Notes
Lead	**18**	3.0	mg/kg	EPA 6010b	
Arsenic	**2.7**	0.050	mg/kg	6020 ICP-MS	

Sample ID: SB5 **Laboratory ID:** T250860-27

Analyte	Result	Reporting Limit	Units	Method	Notes

SunStar Laboratories, Inc.



Joann Marroquin For Jeff Lee, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Sample ID: SB5 **Laboratory ID:** T250860-27

Analyte	Result	Reporting Limit	Units	Method	Notes
Lead	**200**	3.0	mg/kg	EPA 6010b	
Arsenic	**5.8**	0.050	mg/kg	6020 ICP-MS	

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D1

T250860-01 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6020 Method									
Arsenic	**2.5**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D2

T250860-02 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6020 Method

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.7**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	

SunStar Laboratories, Inc.



Joann Marroquin For Jeff Lee, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D2-DUP

T250860-03 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6020 Method

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.7**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D3

T250860-04 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6020 Method

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**3.0**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D4

T250860-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Metals by EPA 6020 Method									
Arsenic	**2.2**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	

SunStar Laboratories, Inc.



Joann Marroquin For Jeff Lee, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D5

T250860-06 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6020 Method

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.4**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D6

T250860-07 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6020 Method

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.2**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D7

T250860-08 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6020 Method

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.5**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

D8

T250860-09 (Soil)

SunStar Laboratories, Inc.

Metals by EPA 6020 Method

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	**2.3**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS1

T250860-10 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*73.2 %*	*35-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*38.2 %*	*35-140*		"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS2

T250860-11 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*61.6 %*	*35-140*		*"*	*"*	*"*	*"*	
Surrogate: Decachlorobiphenyl		*31.1 %*	*35-140*		*"*	*"*	*"*	*"*	*S-GC*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS3

T250860-12 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*62.6 %*	*35-140*		*"*	*"*	*"*	*"*	
Surrogate: Decachlorobiphenyl		*30.0 %*	*35-140*		*"*	*"*	*"*	*"*	*S-GC*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS4

T250860-13 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*67.7 %*	*35-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*36.0 %*	*35-140*		"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS5

T250860-14 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*64.2 %*	*35-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*34.6 %*	*35-140*		"	"	"	"	*S-GC*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS6

T250860-15 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*77.0 %*	*35-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*37.3 %*	*35-140*		"	"	"	"	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS7

T250860-16 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*66.4 %*	*35-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*32.9 %*	*35-140*		"	"	"	"	*S-GC*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS8

T250860-17 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*71.4 %*	*35-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*36.2 %*	*35-140*		"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

CS8-DUP

T250860-18 (Soil)

SunStar Laboratories, Inc.

Organochlorine Pesticides by EPA Method 8081A

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*70.0 %*		*35-140*	"	"	"	"	
Surrogate: Decachlorobiphenyl		*37.7 %*		*35-140*	"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP1-0.5'

T250860-19 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Extractable Petroleum Hydrocarbons by 8015B									
C6-C12 (GRO)	ND	10	mg/kg	1	25B0442	02/21/25	02/22/25	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	**330**	10	"	"	"	"	"	"	D-06
Surrogate: p-Terphenyl		*100 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	4.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Arsenic	ND	2.0	"	"	"	"	"	"	
Barium	**62**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	**7.4**	2.0	"	"	"	"	"	"	
Cobalt	**3.4**	2.0	"	"	"	"	"	"	
Copper	**8.7**	1.0	"	"	"	"	"	"	
Lead	**30**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**3.2**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Silver	ND	2.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**20**	5.0	"	"	"	"	"	"	
Zinc	**57**	1.0	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	25B0439	02/21/25	02/24/25	EPA 7471A Soil	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP1-0.5'

T250860-19 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	25B0397	02/20/25	02/21/25	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP1-0.5'

T250860-19 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B									
cis-1,3-Dichloropropene	ND	0.0025	mg/kg	1	25B0397	02/20/25	02/21/25	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Acetone	ND	0.0050	"	"	"	"	"	"	
Methyl ethyl ketone	ND	0.0050	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.0050	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.0050	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.7 %*		*75.4-139*	"	"	"	"	

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP1-0.5'

T250860-19 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Volatile Organic Compounds by EPA Method 8260B									
Surrogate: Dibromofluoromethane	*106 %*		*73.1-125*		*25B0397*	*02/20/25*	*02/21/25*	*EPA 8260B*	
Surrogate: Toluene-d8	*102 %*		*82.6-117*		*"*	*"*	*"*	*"*	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP1-2.0'

T250860-20 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by 8015B									
C6-C12 (GRO)	ND	10	mg/kg	1	25B0442	02/21/25	02/22/25	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	**360**	10	"	"	"	"	"	"	D-06
Surrogate: p-Terphenyl		*103 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	4.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Arsenic	ND	2.0	"	"	"	"	"	"	
Barium	**79**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	02/24/25	"	
Cadmium	ND	2.0	"	"	"	"	02/24/25	"	
Chromium	**11**	2.0	"	"	"	"	"	"	
Cobalt	**5.0**	2.0	"	"	"	"	"	"	
Copper	**6.9**	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**6.1**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Silver	ND	2.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**27**	5.0	"	"	"	"	"	"	
Zinc	**29**	1.0	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	25B0439	02/21/25	02/24/25	EPA 7471A Soil	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP1-2.0'

T250860-20 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	25B0397	02/20/25	02/21/25	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP1-2.0'

T250860-20 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
cis-1,3-Dichloropropene	ND	0.0025	mg/kg	1	25B0397	02/20/25	02/21/25	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Acetone	ND	0.0050	"	"	"	"	"	"	
Methyl ethyl ketone	ND	0.0050	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.0050	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.0050	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*89.6 %*		*75.4-139*	"	"	"	"	

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP1-2.0'

T250860-20 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Dibromofluoromethane	*106 %*		*73.1-125*		*25B0397*	*02/20/25*	*02/21/25*	*EPA 8260B*	
Surrogate: Toluene-d8	*101 %*		*82.6-117*		*"*	*"*	*"*	*"*	

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP2-0.5'

T250860-21 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by 8015B									
C6-C12 (GRO)	ND	10	mg/kg	1	25B0442	02/21/25	02/22/25	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*105 %*	*65-135*		"	"	"	"	
Metals by EPA 6010B									
Antimony	ND	4.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Arsenic	ND	2.0	"	"	"	"	"	"	
Barium	**74**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	"	"	
Chromium	**9.8**	2.0	"	"	"	"	"	"	
Cobalt	**4.7**	2.0	"	"	"	"	"	"	
Copper	**7.0**	1.0	"	"	"	"	"	"	
Lead	**24**	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**4.5**	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Silver	ND	2.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**24**	5.0	"	"	"	"	"	"	
Zinc	**52**	1.0	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	25B0439	02/21/25	02/24/25	EPA 7471A Soil	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP2-0.5'

T250860-21 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	0.0025	mg/kg	1	25B0397	02/20/25	02/21/25	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP2-0.5'

T250860-21 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
cis-1,3-Dichloropropene	ND	0.0025	mg/kg	1	25B0397	02/20/25	02/21/25	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Acetone	ND	0.0050	"	"	"	"	"	"	
Methyl ethyl ketone	ND	0.0050	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.0050	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.0050	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*90.2 %*		*75.4-139*	"	"	"	"	

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP2-0.5'

T250860-21 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SunStar Laboratories, Inc.									
Volatile Organic Compounds by EPA Method 8260B									
Surrogate: Dibromofluoromethane		*108 %*	*73.1-125*		*25B0397*	*02/20/25*	*02/21/25*	*EPA 8260B*	
Surrogate: Toluene-d8		*103 %*	*82.6-117*		*"*	*"*	*"*	*"*	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP2-2.0'

T250860-22 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Extractable Petroleum Hydrocarbons by 8015B									
C6-C12 (GRO)	ND	10	mg/kg	1	25B0442	02/21/25	02/22/25	EPA 8015B	
C13-C28 (DRO)	ND	10	"	"	"	"	"	"	
C29-C40 (MORO)	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		*105 %*	*65-135*		*"*	*"*	*"*	*"*	
Metals by EPA 6010B									
Antimony	ND	4.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Arsenic	ND	2.0	"	"	"	"	"	"	
Barium	**73**	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	02/24/25	"	
Cadmium	ND	2.0	"	"	"	"	02/24/25	"	
Chromium	**9.0**	2.0	"	"	"	"	"	"	
Cobalt	**5.1**	2.0	"	"	"	"	"	"	
Copper	**7.2**	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	5.0	"	"	"	"	"	"	
Nickel	**6.0**	2.0	"	"	"	"	"	"	
Selenium	**5.2**	5.0	"	"	"	"	"	"	
Silver	ND	2.0	"	"	"	"	"	"	
Thallium	ND	5.0	"	"	"	"	"	"	
Vanadium	**26**	5.0	"	"	"	"	"	"	
Zinc	**29**	1.0	"	"	"	"	"	"	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	25B0439	02/21/25	02/24/25	EPA 7471A Soil	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP2-2.0'

T250860-22 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B									
Bromobenzene	ND	0.0025	mg/kg	1	25B0397	02/20/25	02/21/25	EPA 8260B	
Bromochloromethane	ND	0.0025	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0025	"	"	"	"	"	"	
Bromoform	ND	0.0025	"	"	"	"	"	"	
Bromomethane	ND	0.0025	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0025	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0025	"	"	"	"	"	"	
Chlorobenzene	ND	0.0025	"	"	"	"	"	"	
Chloroethane	ND	0.0025	"	"	"	"	"	"	
Chloroform	ND	0.0025	"	"	"	"	"	"	
Chloromethane	ND	0.0025	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0025	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0025	"	"	"	"	"	"	
Dibromomethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0025	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0025	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0025	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0025	"	"	"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP2-2.0'

T250860-22 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B									
cis-1,3-Dichloropropene	ND	0.0025	mg/kg	1	25B0397	02/20/25	02/21/25	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.0025	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0025	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0025	"	"	"	"	"	"	
p-Isopropyltoluene	ND	0.0025	"	"	"	"	"	"	
Methylene chloride	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.0025	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0025	"	"	"	"	"	"	
Styrene	ND	0.0025	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0025	"	"	"	"	"	"	
Tetrachloroethene	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0025	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0025	"	"	"	"	"	"	
Trichloroethene	ND	0.0025	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0025	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0025	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0025	"	"	"	"	"	"	
Vinyl chloride	ND	0.0025	"	"	"	"	"	"	
Benzene	ND	0.0025	"	"	"	"	"	"	
Toluene	ND	0.0025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0025	"	"	"	"	"	"	
m,p-Xylene	ND	0.0050	"	"	"	"	"	"	
o-Xylene	ND	0.0025	"	"	"	"	"	"	
Acetone	ND	0.0050	"	"	"	"	"	"	
Methyl ethyl ketone	ND	0.0050	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.0050	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	0.0050	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.2 %*		*75.4-139*	"	"	"	"	

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SP2-2.0'

T250860-22 (Soil)

SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Dibromofluoromethane	*106 %*		*73.1-125*		*25B0397*	*02/20/25*	*02/21/25*	*EPA 8260B*	
Surrogate: Toluene-d8	*102 %*		*82.6-117*		*"*	*"*	*"*	*"*	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB1

T250860-23 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Lead	**66**	3.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Metals by EPA 6020 Method									
Arsenic	**2.7**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	
Organochlorine Pesticides by EPA Method 8081A									
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*45.1 %*		*35-140*	"	"	"	"	
Surrogate: Decachlorobiphenyl		*16.5 %*		*35-140*	"	"	"	"	*S-GC*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB1

T250860-23 (Soil)

SunStar Laboratories, Inc.

Polychlorinated Biphenyls by EPA Method 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor-1016	ND	0.010	mg/kg	1	25B0520	02/25/25	02/27/25	EPA 8082	
Aroclor-1221	ND	0.010	"	"	"	"	"	"	
Aroclor-1232	ND	0.010	"	"	"	"	"	"	
Aroclor-1242	ND	0.010	"	"	"	"	"	"	
Aroclor-1248	ND	0.010	"	"	"	"	"	"	
Aroclor-1254	ND	0.010	"	"	"	"	"	"	
Aroclor-1260	ND	0.010	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*74.9 %*		*35-140*	"	"	"	"	
Surrogate: Decachlorobiphenyl		*12.1 %*		*35-140*	"	"	"	"	*S-GC*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB2

T250860-24 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Lead	**22**	3.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Metals by EPA 6020 Method									
Arsenic	**2.8**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	
Organochlorine Pesticides by EPA Method 8081A									
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*62.1 %*		*35-140*	"	"	"	"	
Surrogate: Decachlorobiphenyl		*40.8 %*		*35-140*	"	"	"	"	

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB2

T250860-24 (Soil)

SunStar Laboratories, Inc.

Polychlorinated Biphenyls by EPA Method 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor-1016	ND	0.10	mg/kg	10	25B0520	02/25/25	02/27/25	EPA 8082	R-07
Aroclor-1221	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1232	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1242	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1248	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1254	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1260	ND	0.10	"	"	"	"	"	"	R-07
Surrogate: Tetrachloro-meta-xylene		*97.6 %*		*35-140*	"	"	"	"	*R-07*
Surrogate: Decachlorobiphenyl		*52.2 %*		*35-140*	"	"	"	"	*R-07*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB3

T250860-25 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Lead	**41**	3.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Metals by EPA 6020 Method									
Arsenic	**45**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	
Organochlorine Pesticides by EPA Method 8081A									
alpha-BHC	ND	0.050	mg/kg	10	25B0514	02/25/25	03/03/25	EPA 8081A	R-07
gamma-BHC (Lindane)	ND	0.050	"	"	"	"	"	"	R-07
beta-BHC	ND	0.050	"	"	"	"	"	"	R-07
delta-BHC	ND	0.050	"	"	"	"	"	"	R-07
Heptachlor	ND	0.050	"	"	"	"	"	"	R-07
Aldrin	ND	0.050	"	"	"	"	"	"	R-07
Heptachlor epoxide	ND	0.050	"	"	"	"	"	"	R-07
gamma-Chlordane	ND	0.050	"	"	"	"	"	"	R-07
alpha-Chlordane	ND	0.050	"	"	"	"	"	"	R-07
Endosulfan I	ND	0.050	"	"	"	"	"	"	R-07
4,4´-DDE	ND	0.050	"	"	"	"	"	"	R-07
Dieldrin	ND	0.050	"	"	"	"	"	"	R-07
Endrin	ND	0.050	"	"	"	"	"	"	R-07
4,4´-DDD	ND	0.050	"	"	"	"	"	"	R-07
Endosulfan II	ND	0.050	"	"	"	"	"	"	R-07
4,4´-DDT	ND	0.050	"	"	"	"	"	"	R-07
Endrin aldehyde	ND	0.050	"	"	"	"	"	"	R-07
Endosulfan sulfate	ND	0.050	"	"	"	"	"	"	R-07
Methoxychlor	ND	0.050	"	"	"	"	"	"	R-07
Endrin ketone	ND	0.050	"	"	"	"	"	"	R-07
Toxaphene	ND	0.20	"	"	"	"	"	"	R-07
Surrogate: Tetrachloro-meta-xylene		*93.4 %*	*35-140*		"	"	"	"	*R-07*
Surrogate: Decachlorobiphenyl		*32.5 %*	*35-140*		"	"	"	"	*R-07, S-GC*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB3

T250860-25 (Soil)

SunStar Laboratories, Inc.

Polychlorinated Biphenyls by EPA Method 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor-1016	ND	0.10	mg/kg	10	25B0520	02/25/25	02/27/25	EPA 8082	R-07
Aroclor-1221	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1232	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1242	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1248	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1254	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1260	ND	0.10	"	"	"	"	"	"	R-07
Surrogate: Tetrachloro-meta-xylene		*80.6 %*		*35-140*	"	"	"	"	*R-07*
Surrogate: Decachlorobiphenyl		*93.1 %*		*35-140*	"	"	"	"	*R-07*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB4

T250860-26 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Lead	**18**	3.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Metals by EPA 6020 Method									
Arsenic	**2.7**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	
Organochlorine Pesticides by EPA Method 8081A									
alpha-BHC	ND	0.0050	mg/kg	1	25B0514	02/25/25	03/03/25	EPA 8081A	
gamma-BHC (Lindane)	ND	0.0050	"	"	"	"	"	"	
beta-BHC	ND	0.0050	"	"	"	"	"	"	
delta-BHC	ND	0.0050	"	"	"	"	"	"	
Heptachlor	ND	0.0050	"	"	"	"	"	"	
Aldrin	ND	0.0050	"	"	"	"	"	"	
Heptachlor epoxide	ND	0.0050	"	"	"	"	"	"	
gamma-Chlordane	ND	0.0050	"	"	"	"	"	"	
alpha-Chlordane	ND	0.0050	"	"	"	"	"	"	
Endosulfan I	ND	0.0050	"	"	"	"	"	"	
4,4´-DDE	ND	0.0050	"	"	"	"	"	"	
Dieldrin	ND	0.0050	"	"	"	"	"	"	
Endrin	ND	0.0050	"	"	"	"	"	"	
4,4´-DDD	ND	0.0050	"	"	"	"	"	"	
Endosulfan II	ND	0.0050	"	"	"	"	"	"	
4,4´-DDT	ND	0.0050	"	"	"	"	"	"	
Endrin aldehyde	ND	0.0050	"	"	"	"	"	"	
Endosulfan sulfate	ND	0.0050	"	"	"	"	"	"	
Methoxychlor	ND	0.0050	"	"	"	"	"	"	
Endrin ketone	ND	0.0050	"	"	"	"	"	"	
Toxaphene	ND	0.020	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*76.5 %*	*35-140*		"	"	"	"	
Surrogate: Decachlorobiphenyl		*31.0 %*	*35-140*		"	"	"	"	*S-GC*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB4

T250860-26 (Soil)

SunStar Laboratories, Inc.

Polychlorinated Biphenyls by EPA Method 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor-1016	ND	0.010	mg/kg	1	25B0520	02/25/25	02/27/25	EPA 8082	
Aroclor-1221	ND	0.010	"	"	"	"	"	"	
Aroclor-1232	ND	0.010	"	"	"	"	"	"	
Aroclor-1242	ND	0.010	"	"	"	"	"	"	
Aroclor-1248	ND	0.010	"	"	"	"	"	"	
Aroclor-1254	ND	0.010	"	"	"	"	"	"	
Aroclor-1260	ND	0.010	"	"	"	"	"	"	
Surrogate: Tetrachloro-meta-xylene		*90.4 %*		*35-140*	"	"	"	"	
Surrogate: Decachlorobiphenyl		*20.3 %*		*35-140*	"	"	"	"	*S-GC*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB5

T250860-27 (Soil)

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Metals by EPA 6010B									
Lead	**200**	3.0	mg/kg	1	25B0438	02/21/25	02/24/25	EPA 6010b	
Metals by EPA 6020 Method									
Arsenic	**5.8**	0.050	mg/kg	1	25B0426	02/20/25	02/24/25	6020 ICP-MS	
Organochlorine Pesticides by EPA Method 8081A									
alpha-BHC	ND	0.050	mg/kg	10	25B0514	02/25/25	03/03/25	EPA 8081A	R-07
gamma-BHC (Lindane)	ND	0.050	"	"	"	"	"	"	R-07
beta-BHC	ND	0.050	"	"	"	"	"	"	R-07
delta-BHC	ND	0.050	"	"	"	"	"	"	R-07
Heptachlor	ND	0.050	"	"	"	"	"	"	R-07
Aldrin	ND	0.050	"	"	"	"	"	"	R-07
Heptachlor epoxide	ND	0.050	"	"	"	"	"	"	R-07
gamma-Chlordane	ND	0.050	"	"	"	"	"	"	R-07
alpha-Chlordane	ND	0.050	"	"	"	"	"	"	R-07
Endosulfan I	ND	0.050	"	"	"	"	"	"	R-07
4,4´-DDE	ND	0.050	"	"	"	"	"	"	R-07
Dieldrin	ND	0.050	"	"	"	"	"	"	R-07
Endrin	ND	0.050	"	"	"	"	"	"	R-07
4,4´-DDD	ND	0.050	"	"	"	"	"	"	R-07
Endosulfan II	ND	0.050	"	"	"	"	"	"	R-07
4,4´-DDT	ND	0.050	"	"	"	"	"	"	R-07
Endrin aldehyde	ND	0.050	"	"	"	"	"	"	R-07
Endosulfan sulfate	ND	0.050	"	"	"	"	"	"	R-07
Methoxychlor	ND	0.050	"	"	"	"	"	"	R-07
Endrin ketone	ND	0.050	"	"	"	"	"	"	R-07
Toxaphene	ND	0.20	"	"	"	"	"	"	R-07
Surrogate: Tetrachloro-meta-xylene		*53.8 %*		*35-140*	"	"	"	"	*R-07*
Surrogate: Decachlorobiphenyl		*45.9 %*		*35-140*	"	"	"	"	*R-07*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

SB5

T250860-27 (Soil)

SunStar Laboratories, Inc.

Polychlorinated Biphenyls by EPA Method 8082

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Aroclor-1016	ND	0.10	mg/kg	10	25B0520	02/25/25	02/27/25	EPA 8082	R-07
Aroclor-1221	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1232	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1242	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1248	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1254	ND	0.10	"	"	"	"	"	"	R-07
Aroclor-1260	ND	0.10	"	"	"	"	"	"	R-07
Surrogate: Tetrachloro-meta-xylene		*75.7 %*		*35-140*	"	"	"	"	*R-07*
Surrogate: Decachlorobiphenyl		*51.5 %*		*35-140*	"	"	"	"	*R-07*

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Extractable Petroleum Hydrocarbons by 8015B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0442 - EPA 3550B GC										
Blank (25B0442-BLK1)				Prepared: 02/21/25 Analyzed: 02/22/25						
C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	"							
C29-C40 (MORO)	ND	10	"							
Surrogate: p-Terphenyl	*104*		*"*	*100*		*104*	*65-135*			
LCS (25B0442-BS1)				Prepared: 02/21/25 Analyzed: 02/22/25						
C13-C28 (DRO)	420	10	mg/kg	500		84.0	75-125			
Surrogate: p-Terphenyl	*101*		*"*	*100*		*101*	*65-135*			
Matrix Spike (25B0442-MS1)	**Source: T250860-19**			Prepared & Analyzed: 02/21/25						
C13-C28 (DRO)	430	10	mg/kg	500	ND	85.0	75-125			
Surrogate: p-Terphenyl	*102*		*"*	*100*		*102*	*65-135*			
Matrix Spike Dup (25B0442-MSD1)	**Source: T250860-19**			Prepared & Analyzed: 02/21/25						
C13-C28 (DRO)	420	10	mg/kg	500	ND	84.1	75-125	1.05	20	
Surrogate: p-Terphenyl	*99.4*		*"*	*100*		*99.4*	*65-135*			

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0438 - EPA 3050B										
Blank (25B0438-BLK1)				Prepared: 02/21/25 Analyzed: 02/24/25						
Antimony	ND	4.0	mg/kg							
Arsenic	ND	2.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	5.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Silver	ND	2.0	"							
Thallium	ND	5.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							
LCS (25B0438-BS1)				Prepared: 02/21/25 Analyzed: 02/24/25						
Arsenic	96.0	2.0	mg/kg	100		96.0	75-125			
Barium	96.8	1.0	"	100		96.8	75-125			
Cadmium	99.3	2.0	"	100		99.3	75-125			
Chromium	99.2	2.0	"	100		99.2	75-125			
Lead	99.2	3.0	"	100		99.2	75-125			
Lead	99.2	3.0	"	100		99.2	75-125			
Matrix Spike (25B0438-MS1)		**Source: T250860-19**		Prepared: 02/21/25 Analyzed: 02/24/25						
Arsenic	79.4	2.0	mg/kg	100	1.20	78.2	75-125			
Barium	138	1.0	"	100	61.9	75.7	75-125			
Cadmium	82.0	2.0	"	100	ND	82.0	75-125			
Chromium	87.4	2.0	"	100	7.38	80.0	75-125			
Lead	107	3.0	"	100	30.0	76.7	75-125			
Lead	107	3.0	"	100	30.0	76.7	75-125			

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0438 - EPA 3050B										
Matrix Spike Dup (25B0438-MSD1)	**Source: T250860-19**			Prepared: 02/21/25 Analyzed: 02/24/25						
Arsenic	76.8	2.0	mg/kg	100	1.20	75.6	75-125	3.38	20	
Barium	123	1.0	"	100	61.9	61.6	75-125	10.8	20	QM-07
Cadmium	80.4	2.0	"	100	ND	80.4	75-125	2.07	20	
Chromium	82.9	2.0	"	100	7.38	75.5	75-125	5.28	20	
Lead	103	3.0	"	100	30.0	73.2	75-125	3.31	20	QM-07
Lead	103	3.0	"	100	30.0	73.2	75-125	3.31	20	QM-07

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Metals by EPA 6020 Method - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0426 - EPA 3050B										
Blank (25B0426-BLK1)				Prepared: 02/20/25 Analyzed: 02/25/25						
Antimony	ND	0.25	mg/kg							
Arsenic	0.0500	0.050	"							QB-01
Barium	ND	0.25	"							
Beryllium	ND	0.25	"							
Cadmium	ND	0.25	"							
Chromium	ND	0.25	"							
Cobalt	ND	0.25	"							
Copper	ND	0.25	"							
Lead	ND	0.25	"							
Mercury	ND	0.050	"							
Molybdenum	ND	0.25	"							
Nickel	ND	0.25	"							
Selenium	ND	0.50	"							
Silver	ND	0.25	"							
Thallium	ND	0.25	"							
Vanadium	0.480	0.25	"							QB-01
Zinc	ND	0.25	"							
LCS (25B0426-BS1)				Prepared: 02/20/25 Analyzed: 02/24/25						
Arsenic	22.0	0.050	mg/kg	25.0		87.8	80-120			
Barium	23.0	2.5	"	25.0		92.0	80-120			
Cadmium	23.0	2.5	"	25.0		92.0	80-120			
Chromium	23.1	2.5	"	25.0		92.4	80-120			
Lead	23.6	2.5	"	25.0		94.4	80-120			
Matrix Spike (25B0426-MS1)	**Source: T250850-01**			Prepared: 02/20/25 Analyzed: 02/24/25						
Arsenic	32.1	0.050	mg/kg	25.0	3.37	115	75-125			
Barium	100	2.5	"	25.0	220	NR	75-125			QM-4X
Cadmium	34.1	2.5	"	25.0	0.130	136	75-125			QM-07
Chromium	78.7	2.5	"	25.0	160	NR	75-125			QM-4X
Lead	37.2	2.5	"	25.0	9.29	112	75-125			

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Metals by EPA 6020 Method - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0426 - EPA 3050B										
Matrix Spike Dup (25B0426-MSD1)	**Source: T250850-01**			Prepared: 02/20/25 Analyzed: 02/24/25						
Arsenic	21.5	0.050	mg/kg	25.0	3.37	72.6	75-125	39.5	20	QM-07
Barium	204	2.5	"	25.0	220	NR	75-125	68.6	20	QM-4X
Cadmium	19.8	2.5	"	25.0	0.130	78.7	75-125	53.1	20	QM-07
Chromium	157	2.5	"	25.0	160	NR	75-125	66.7	20	QM-4X
Lead	28.0	2.5	"	25.0	9.29	74.8	75-125	28.2	20	QM-07
Post Spike (25B0426-PS1)	**Source: T250850-01**			Prepared: 02/20/25 Analyzed: 02/24/25						
Arsenic	26.4		mg/kg	25.0	3.37	92.3	80-120			
Barium	27.5		"	25.0	220	NR	80-120			QM-PS
Cadmium	26.8		"	25.0	0.130	107	80-120			
Chromium	26.6		"	25.0	160	NR	80-120			QM-PS
Lead	27.6		"	25.0	9.29	73.2	80-120			QM-PS

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0439 - EPA 7471A Soil										
Blank (25B0439-BLK1)				Prepared: 02/21/25 Analyzed: 02/24/25						
Mercury	ND	0.10	mg/kg							
LCS (25B0439-BS1)				Prepared: 02/21/25 Analyzed: 02/24/25						
Mercury	0.461	0.10	mg/kg	0.417		111	80-120			
Matrix Spike (25B0439-MS1)	**Source: T250860-19**			Prepared: 02/21/25 Analyzed: 02/24/25						
Mercury	0.473	0.10	mg/kg	0.417	ND	114	80-120			
Matrix Spike Dup (25B0439-MSD1)	**Source: T250860-19**			Prepared: 02/21/25 Analyzed: 02/24/25						
Mercury	0.496	0.10	mg/kg	0.417	ND	119	80-120	4.82	20	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Organochlorine Pesticides by EPA Method 8081A - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0514 - EPA 3550B Soil										
Blank (25B0514-BLK1)				Prepared: 02/25/25 Analyzed: 03/03/25						
alpha-BHC	ND	0.0050	mg/kg							
gamma-BHC (Lindane)	ND	0.0050	"							
beta-BHC	ND	0.0050	"							
delta-BHC	ND	0.0050	"							
Heptachlor	ND	0.0050	"							
Aldrin	ND	0.0050	"							
Heptachlor epoxide	ND	0.0050	"							
gamma-Chlordane	ND	0.0050	"							
alpha-Chlordane	ND	0.0050	"							
Endosulfan I	ND	0.0050	"							
4,4´-DDE	ND	0.0050	"							
Dieldrin	ND	0.0050	"							
Endrin	ND	0.0050	"							
4,4´-DDD	ND	0.0050	"							
Endosulfan II	ND	0.0050	"							
4,4´-DDT	ND	0.0050	"							
Endrin aldehyde	ND	0.0050	"							
Endosulfan sulfate	ND	0.0050	"							
Methoxychlor	ND	0.0050	"							
Endrin ketone	ND	0.0050	"							
Toxaphene	ND	0.020	"							
Surrogate: Tetrachloro-meta-xylene	*0.00719*		*"*	*0.0100*		*71.9*	*35-140*			
Surrogate: Decachlorobiphenyl	*0.00370*		*"*	*0.0100*		*37.0*	*35-140*			
LCS (25B0514-BS1)				Prepared: 02/25/25 Analyzed: 03/03/25						
gamma-BHC (Lindane)	0.0348	0.0050	mg/kg	0.0404		86.1	40-120			
Heptachlor	0.0359	0.0050	"	0.0400		89.7	40-120			
Aldrin	0.0287	0.0050	"	0.0400		71.7	40-120			
Dieldrin	0.0356	0.0050	"	0.0402		88.5	40-120			
Endrin	0.0379	0.0050	"	0.0402		94.3	40-120			
4,4´-DDT	0.0379	0.0050	"	0.0404		93.8	33-147			
Surrogate: Tetrachloro-meta-xylene	*0.00676*		*"*	*0.0100*		*67.6*	*35-140*			
Surrogate: Decachlorobiphenyl	*0.0103*		*"*	*0.0100*		*103*	*35-140*			

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Organochlorine Pesticides by EPA Method 8081A - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0514 - EPA 3550B Soil										
Matrix Spike (25B0514-MS1)		**Source: T250860-10**		Prepared: 02/25/25 Analyzed: 03/03/25						
gamma-BHC (Lindane)	0.0375	0.0050	mg/kg	0.0404	ND	92.7	30-120			
Heptachlor	0.0379	0.0050	"	0.0400	ND	94.9	30-120			
Aldrin	0.0320	0.0050	"	0.0400	ND	80.0	30-120			
Dieldrin	0.0374	0.0050	"	0.0402	ND	93.0	30-120			
Endrin	0.0397	0.0050	"	0.0402	ND	98.6	30-120			
4,4′-DDT	0.0369	0.0050	"	0.0404	ND	91.3	30-120			
Surrogate: Tetrachloro-meta-xylene	*0.00829*		*"*	*0.0100*		*82.9*	*35-140*			
Surrogate: Decachlorobiphenyl	*0.00903*		*"*	*0.0100*		*90.3*	*35-140*			
Matrix Spike Dup (25B0514-MSD1)		**Source: T250860-10**		Prepared: 02/25/25 Analyzed: 03/03/25						
gamma-BHC (Lindane)	0.0365	0.0050	mg/kg	0.0404	ND	90.4	30-120	2.57	30	
Heptachlor	0.0370	0.0050	"	0.0400	ND	92.6	30-120	2.44	30	
Aldrin	0.0328	0.0050	"	0.0400	ND	81.9	30-120	2.31	30	
Dieldrin	0.0361	0.0050	"	0.0402	ND	89.8	30-120	3.56	30	
Endrin	0.0377	0.0050	"	0.0402	ND	93.7	30-120	5.15	30	
4,4′-DDT	0.0355	0.0050	"	0.0404	ND	87.8	30-120	3.92	30	
Surrogate: Tetrachloro-meta-xylene	*0.00633*		*"*	*0.0100*		*63.3*	*35-140*			
Surrogate: Decachlorobiphenyl	*0.00726*		*"*	*0.0100*		*72.6*	*35-140*			

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Polychlorinated Biphenyls by EPA Method 8082 - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0520 - EPA 3550B PCB										
Blank (25B0520-BLK1)				Prepared: 02/25/25 Analyzed: 02/27/25						
Aroclor-1016	ND	0.010	mg/kg							
Aroclor-1221	ND	0.010	"							
Aroclor-1232	ND	0.010	"							
Aroclor-1242	ND	0.010	"							
Aroclor-1248	ND	0.010	"							
Aroclor-1254	ND	0.010	"							
Aroclor-1260	ND	0.010	"							
Surrogate: Tetrachloro-meta-xylene	*0.00865*		"	*0.0100*		*86.5*	*35-140*			
Surrogate: Decachlorobiphenyl	*0.00376*		"	*0.0100*		*37.6*	*35-140*			
LCS (25B0520-BS1)				Prepared: 02/25/25 Analyzed: 02/27/25						
Aroclor-1016	0.103	0.010	mg/kg	0.101		102	40-130			
Aroclor-1260	0.111	0.010	"	0.100		111	40-130			
Surrogate: Tetrachloro-meta-xylene	*0.00884*		"	*0.0100*		*88.4*	*35-140*			
Surrogate: Decachlorobiphenyl	*0.00359*		"	*0.0100*		*35.9*	*35-140*			
Matrix Spike (25B0520-MS1)	**Source: T250860-23**			Prepared: 02/25/25 Analyzed: 02/27/25						
Aroclor-1016	0.0969	0.010	mg/kg	0.101	ND	95.9	40-130			
Aroclor-1260	0.0965	0.010	"	0.100	ND	96.5	40-130			
Surrogate: Tetrachloro-meta-xylene	*0.00814*		"	*0.0100*		*81.4*	*35-140*			
Surrogate: Decachlorobiphenyl	*0.00112*		"	*0.0100*		*11.2*	*35-140*			*S-GC*
Matrix Spike Dup (25B0520-MSD1)	**Source: T250860-23**			Prepared: 02/25/25 Analyzed: 02/27/25						
Aroclor-1016	0.103	0.010	mg/kg	0.101	ND	102	40-130	6.11	30	
Aroclor-1260	0.0971	0.010	"	0.100	ND	97.1	40-130	0.566	30	
Surrogate: Tetrachloro-meta-xylene	*0.00639*		"	*0.0100*		*63.9*	*35-140*			
Surrogate: Decachlorobiphenyl	*0.00127*		"	*0.0100*		*12.7*	*35-140*			*S-GC*

SunStar Laboratories, Inc.

Joann Marroquin

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0397 - EPA 5030 GCMS										
Blank (25B0397-BLK1)				Prepared & Analyzed: 02/20/25						
Bromobenzene	ND	0.0025	mg/kg							
Bromochloromethane	ND	0.0025	"							
Bromodichloromethane	ND	0.0025	"							
Bromoform	ND	0.0025	"							
Bromomethane	ND	0.0025	"							
n-Butylbenzene	ND	0.0025	"							
sec-Butylbenzene	ND	0.0025	"							
tert-Butylbenzene	ND	0.0025	"							
Carbon tetrachloride	ND	0.0025	"							
Chlorobenzene	ND	0.0025	"							
Chloroethane	ND	0.0025	"							
Chloroform	ND	0.0025	"							
Chloromethane	ND	0.0025	"							
2-Chlorotoluene	ND	0.0025	"							
4-Chlorotoluene	ND	0.0025	"							
Dibromochloromethane	ND	0.0025	"							
1,2-Dibromo-3-chloropropane	ND	0.0050	"							
1,2-Dibromoethane (EDB)	ND	0.0025	"							
Dibromomethane	ND	0.0025	"							
1,2-Dichlorobenzene	ND	0.0025	"							
1,3-Dichlorobenzene	ND	0.0025	"							
1,4-Dichlorobenzene	ND	0.0025	"							
Dichlorodifluoromethane	ND	0.0025	"							
1,1-Dichloroethane	ND	0.0025	"							
1,2-Dichloroethane	ND	0.0025	"							
1,1-Dichloroethene	ND	0.0025	"							
cis-1,2-Dichloroethene	ND	0.0025	"							
trans-1,2-Dichloroethene	ND	0.0025	"							
1,2-Dichloropropane	ND	0.0025	"							
1,3-Dichloropropane	ND	0.0025	"							
2,2-Dichloropropane	ND	0.0025	"							
1,1-Dichloropropene	ND	0.0025	"							
cis-1,3-Dichloropropene	ND	0.0025	"							
trans-1,3-Dichloropropene	ND	0.0025	"							
Hexachlorobutadiene	ND	0.0025	"							
Isopropylbenzene	ND	0.0025	"							

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0397 - EPA 5030 GCMS										
Blank (25B0397-BLK1)				Prepared & Analyzed: 02/20/25						
p-Isopropyltoluene	ND	0.0025	mg/kg							
Methylene chloride	ND	0.010	"							
Naphthalene	ND	0.0025	"							
n-Propylbenzene	ND	0.0025	"							
Styrene	ND	0.0025	"							
1,1,2,2-Tetrachloroethane	ND	0.0025	"							
1,1,1,2-Tetrachloroethane	ND	0.0025	"							
Tetrachloroethene	ND	0.0025	"							
1,2,3-Trichlorobenzene	ND	0.0025	"							
1,2,4-Trichlorobenzene	ND	0.0025	"							
1,1,2-Trichloroethane	ND	0.0025	"							
1,1,1-Trichloroethane	ND	0.0025	"							
Trichloroethene	ND	0.0025	"							
Trichlorofluoromethane	ND	0.0025	"							
1,2,3-Trichloropropane	ND	0.0025	"							
1,3,5-Trimethylbenzene	ND	0.0025	"							
1,2,4-Trimethylbenzene	ND	0.0025	"							
Vinyl chloride	ND	0.0025	"							
Benzene	ND	0.0025	"							
Toluene	ND	0.0025	"							
Ethylbenzene	ND	0.0025	"							
m,p-Xylene	ND	0.0050	"							
o-Xylene	ND	0.0025	"							
Acetone	ND	0.0050	"							
Methyl ethyl ketone	ND	0.0050	"							
Methyl isobutyl ketone	ND	0.0050	"							
2-Hexanone (MBK)	ND	0.0050	"							
Surrogate: 4-Bromofluorobenzene	*0.0447*		"	*0.0500*		*89.3*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0522*		"	*0.0500*		*104*	*73.1-125*			
Surrogate: Toluene-d8	*0.0504*		"	*0.0500*		*101*	*82.6-117*			

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 25B0397 - EPA 5030 GCMS										
LCS (25B0397-BS1)				Prepared & Analyzed: 02/20/25						
Chlorobenzene	0.0496	0.0025	mg/kg	0.0500		99.1	65.2-124			
1,1-Dichloroethene	0.0536	0.0025	"	0.0500		107	60.9-131			
Trichloroethene	0.0515	0.0025	"	0.0500		103	62.1-126			
Benzene	0.0495	0.0025	"	0.0500		98.9	65.3-127			
Toluene	0.0499	0.0025	"	0.0500		99.8	64.3-122			
Surrogate: 4-Bromofluorobenzene	*0.0507*		*"*	*0.0500*		*101*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0535*		*"*	*0.0500*		*107*	*73.1-125*			
Surrogate: Toluene-d8	*0.0502*		*"*	*0.0500*		*100*	*82.6-117*			
Matrix Spike (25B0397-MS1)		**Source: T250837-01**		Prepared & Analyzed: 02/20/25						
Chlorobenzene	0.0318	0.0025	mg/kg	0.0500	ND	63.5	65.2-125			QM-07
1,1-Dichloroethene	0.0386	0.0025	"	0.0500	ND	77.3	60.9-131			
Trichloroethene	0.0364	0.0025	"	0.0500	ND	72.8	62.1-126			
Benzene	0.0370	0.0025	"	0.0500	0.000530	73.0	65.3-127			
Toluene	0.0352	0.0025	"	0.0500	0.000410	69.5	64.3-125			
Surrogate: 4-Bromofluorobenzene	*0.0489*		*"*	*0.0500*		*97.9*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0522*		*"*	*0.0500*		*104*	*73.1-125*			
Surrogate: Toluene-d8	*0.0495*		*"*	*0.0500*		*99.1*	*82.6-117*			
Matrix Spike Dup (25B0397-MSD1)		**Source: T250837-01**		Prepared & Analyzed: 02/20/25						
Chlorobenzene	0.0285	0.0025	mg/kg	0.0500	ND	56.9	65.2-125	10.9	20	QM-07
1,1-Dichloroethene	0.0330	0.0025	"	0.0500	ND	66.0	60.9-131	15.8	20	
Trichloroethene	0.0296	0.0025	"	0.0500	ND	59.3	62.1-126	20.5	20	QM-07
Benzene	0.0310	0.0025	"	0.0500	0.000530	60.9	65.3-127	17.8	20	QM-07
Toluene	0.0301	0.0025	"	0.0500	0.000410	59.4	64.3-125	15.5	20	QM-07
Surrogate: 4-Bromofluorobenzene	*0.0489*		*"*	*0.0500*		*97.8*	*75.4-139*			
Surrogate: Dibromofluoromethane	*0.0526*		*"*	*0.0500*		*105*	*73.1-125*			
Surrogate: Toluene-d8	*0.0498*		*"*	*0.0500*		*99.5*	*82.6-117*			

SunStar Laboratories, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin For Jeff Lee, Project Manager

SunStar Laboratories, Inc.
Providing Quality Analytical Services Nationwide

25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Krazan, Clovis	Project: Fernandes Subdivision	
215 West Dakota Avenue	Project Number: [none]	**Reported:**
Clovis CA, 93612	Project Manager: Mike Bowery	03/04/25 16:02

Notes and Definitions

S-GC	Surrogate recovery outside of established control limits. The data was accepted based on valid recovery of the remaining surrogate(s).
R-07	Reporting limit for this compound(s) has been raised to account for dilution necessary due to high levels of interfering compound(s) and/or matrix affect.
QM-PS	The percent recovery and/or RPD are outside acceptance criteria. Results accepted based upon percent recovery results in the post spike and/or serial dilution.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
QM-07	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QB-01	The method blank contains analyte at a concentration above the MRL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
D-06	The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joann Marroquin

Joann Marroquin For Jeff Lee, Project Manager

T25062

Krazan & Associates, Inc. 215 W. Dakota Avenue, Clovis, CA 93612, (559) 348-2200, FAX (559) 348-2190

CHAIN-OF-CUSTODY RECORD

DATE: 2/19/2025

Client:	Krazan & Associates, Inc.
Address:	215 West Dakota Avenue Clovis, CA 93612
Sampled By:	D. De Leon
Phone:	(559) 348-2200
Email:	michaelbowery@krazan.com
Project Manager:	Michael Bowery
Project Number:	014-25012 Fernandes Subdivision

	Client Sample ID	Sample Date	Sample Time	Sample Matrix	Container #	Container Type	REQUESTED ANALYSIS: Arsenic by EPA Method 6020B	OCPs by EPA Method 8081A
1	D1	2/19/2025	0735	Soil	1	Sleeve	x	
2	D2	2/19/2025	0815	Soil	1	Sleeve	x	
3	D2-DUP	2/19/2025	0740	Soil	1	Sleeve	x	
4	D3	2/19/2025	0740	Soil	1	Sleeve	x	
5	D4	2/19/2025	0820	Soil	1	Sleeve	x	
6	D5	2/19/2025	0745	Soil	1	Sleeve	x	
7	D6	2/19/2025	0825	Soil	1	Sleeve	x	
8	D7	2/19/2025	0750	Soil	1	Sleeve	x	
9	D8	2/19/2025	0830	Soil	1	Sleeve	x	
10	CS1	2/19/2025	0810	Soil	1	Sleeve		x

Sample Preservative:	Yes	**No**	
Turnaround Time:	**Standard**		
Comments:			

Signature:			
Print:	Dulcinea De Leon		
Company:	Krazan & Associates		
Date:	2/19/2025	Time:	1245
Signature:			
Print:			
Company:			
Date:		Time:	

Relinquished by Fed Ex

1.6°C

Received by Paul B SunStar 2/20/25 11:41

Krazan & Associates, Inc. 215 W. Dakota Avenue, Clovis, CA 93612, (559) 348-2200, FAX (559) 348-2190

CHAIN-OF-CUSTODY RECORD

DATE: 2/19/2025

Client:	Krazan & Associates, Inc.
Address:	215 West Dakota Avenue Clovis, CA 93612
Sampled By:	D. De Leon
Phone:	(559) 348-2200
Email:	michaelbowery@krazan.com
Project Manager:	Michael Bowery
Project Number:	014-25012 Fernandes Subdivision

	Client Sample ID	Sample Date	Sample Time	Sample Matrix	Container #	Container Type	REQUESTED ANALYSIS: OCPs by EPA Method 8081A	TPH-cc by EPA Method 8015M	Volatile Organic Compounds by EPA Method 8260	CAM-17 Metals by EPA Method 6010/7471					
11	CS2	2/19/2025	0855	Soil	1	Sleeve	x								
12	CS3	2/19/2025	0805	Soil	1	Sleeve	x								
13	CS4	2/19/2025	0850	Soil	1	Sleeve	x								
14	CS5	2/19/2025	0800	Soil	1	Sleeve	x								
15	CS6	2/19/2025	0845	Soil	1	Sleeve	x								
16	CS7	2/19/2025	0755	Soil	1	Sleeve	x								
17	CS8	2/19/2025	0835	Soil	1	Sleeve	x								
18	CS8-DUP	2/19/2025	0835	Soil	1	Sleeve	x								
19	SP1-0.5'	2/19/2025	0940	Soil	1	Sleeve		x	x	x					
20	SP1-2.0'	2/19/2025	0945	Soil	1	Sleeve		x	x	x					

Sample Preservative:	Yes	**No**	Signature:
			Print: Dulcinea De Leon
Turnaround Time:	**Standard**		Company: Krazan & Associates
Comments:			Date: 2/19/2025 Time: 1245
			Signature:
			Print:
			Company:
			Date: Time:

1.6°c

Relinquished by Fed Ex

Received by Paul B SunStar

2/20/25 11:41

Krazan & Associates, Inc. 215 W. Dakota Avenue, Clovis, CA 93612, (559) 348-2200, FAX (559) 348-2190

CHAIN-OF-CUSTODY RECORD

DATE: 2/19/2025

Client:	Krazan & Associates, Inc.
Address:	215 West Dakota Avenue Clovis, CA 93612
Sampled By:	D. De Leon
Phone:	(559) 348-2200
Email:	michaelbowery@krazan.com
Project Manager:	Michael Bowery
Project Number:	014-25012 Fernandes Subdivision

	Client Sample ID	Sample Date	Sample Time	Sample Matrix	Container #	Container Type	REQUESTED ANALYSIS: TPH-cc by EPA Method 8015M	Volatile Organic Compounds by EPA Method 8260	CAM-17 Metals by EPA Method 6010/7471	OCPs by EPA Method 8081A	PCBs by EPA Method 8082	Lead by EPA Method 6010	Arsenic by EPA Method 6020B		
21	SP2-0.5'	2/19/2025	0950	Soil	1	Sleeve	x	x	x						
22	SP2-2.0'	2/19/2025	0955	Soil	1	Sleeve	x	x	x						
23	SB1	2/19/2025	1000	Soil	1	Sleeve				x	x	x	x		
24	SB2	2/19/2025	1001	Soil	1	Sleeve				x	x	x	x		
25	SB3	2/19/2025	1002	Soil	1	Sleeve				x	x	x	x		
26	SB4	2/19/2025	1003	Soil	1	Sleeve				x	x	x	x		
27	SB5	2/19/2025	1004	Soil	1	Sleeve				x	x	x	x		
28															
29															
30															

Sample Preservative:	Yes	**No**	
Turnaround Time:	**Standard**		
Comments:			

Signature:			
Print:	Dulcinea De Leon		
Company:	Krazan & Associates		
Date:	2/19/2025	Time:	1245
Signature:			
Print:			
Company:			
Date:		Time:	

1.6°C

Relinquished by FedEx

Received by Paul B SunStar 2/20/25 11:41

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T250860

Client Name: Krazan Project: 014-2502 Fernandes Subdivision

Delivered by: ☐ Client ☐ SunStar Courier ☐ GLS ☑ FedEx ☐ Other

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: Paul Date/Time Lab Received: 2/20/25 11:41

Total number of coolers received: 1 Thermometer ID: SC-1 Calibration due: 11/19/2025

Temperature: Cooler #1	1.5 °C +/- the CF (+ 0.1°C)	=	1.6 °C	corrected temperature
Temperature: Cooler #2	°C +/- the CF (+ 0.1°C)	=	°C	corrected temperature
Temperature: Cooler #3	°C +/- the CF (+ 0.1°C)	=	°C	corrected temperature

Temperature criteria = ≤ 6°C (no frozen containers)	Within criteria?	☑ **Yes** ☐ **No** ☐ **N/A**
If NO:		
Samples received on ice?	☐ Yes	☐ **No → Complete Non-Conformance Sheet**
If on ice, samples received same day collected?	☐ Yes → Acceptable	☐ **No → Complete Non-Conformance Sheet**

Custody seals intact on cooler/sample	☐ Yes	☐ No*	☑ N/A
Sample containers intact	☑ Yes	☐ No*	
Sample labels match Chain of Custody IDs	☑ Yes	☐ No*	
Total number of containers received match COC	☑ Yes	☐ No*	
Proper containers received for analyses requested on COC	☑ Yes	☐ No*	
Proper preservative indicated on COC/containers for analyses requested	☐ Yes	☐ No*	☑ N/A
Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times	☑ **Yes**	☐ **No***	

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date: PB 2/20/25

Comments:

Rev. 03 Date 11/24

(949) 297-5020 ■ www.sunstarlabs.com ■ 25712 Commercentre Drive ■ Lake Forest, CA 92630

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T250860

Client:	**Krazan, Clovis**	**Project Manager:**	**Jeff Lee**
Project:	**Fernandes Subdivision**	**Project Number:**	**[none]**

Report To:

Krazan, Clovis
Mike Bowery
215 West Dakota Avenue
Clovis, CA 93612

Date Due:	02/27/25 17:00 (5 day TAT)		
Received By:	Paul Berner	Date Received:	02/20/25 11:41
Logged In By:	Angel Aguirre	Date Logged In:	02/20/25 15:32

Samples Received at:	**1.6°C**		
Custody Seals	No	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	No		

Analysis	Due	TAT	Expires	Comments
T250860-01 D1 [Soil] Sampled 02/19/25 07:35 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 07:35	As
T250860-02 D2 [Soil] Sampled 02/19/25 08:15 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 08:15	As
T250860-03 D2-DUP [Soil] Sampled 02/19/25 07:40 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 07:40	As
T250860-04 D3 [Soil] Sampled 02/19/25 07:40 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 07:40	As
T250860-05 D4 [Soil] Sampled 02/19/25 08:20 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 08:20	As
T250860-06 D5 [Soil] Sampled 02/19/25 07:45 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 07:45	As
T250860-07 D6 [Soil] Sampled 02/19/25 08:25 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 08:25	As
T250860-08 D7 [Soil] Sampled 02/19/25 07:50 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 07:50	As
T250860-09 D8 [Soil] Sampled 02/19/25 08:30 (GMT-08:00) Pacific Time (US &				
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 08:30	As

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T250860

Client:	**Krazan, Clovis**	**Project Manager:**	**Jeff Lee**
Project:	**Fernandes Subdivision**	**Project Number:**	**[none]**

Analysis	Due	TAT	Expires	Comments
T250860-10 CS1 [Soil] Sampled 02/19/25 08:10 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 08:10	
T250860-11 CS2 [Soil] Sampled 02/19/25 08:55 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 08:55	
T250860-12 CS3 [Soil] Sampled 02/19/25 08:05 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 08:05	
T250860-13 CS4 [Soil] Sampled 02/19/25 08:50 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 08:50	
T250860-14 CS5 [Soil] Sampled 02/19/25 08:00 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 08:00	
T250860-15 CS6 [Soil] Sampled 02/19/25 08:45 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 08:45	
T250860-16 CS7 [Soil] Sampled 02/19/25 07:55 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 07:55	
T250860-17 CS8 [Soil] Sampled 02/19/25 08:35 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 08:35	
T250860-18 CS8-DUP [Soil] Sampled 02/19/25 08:35 (GMT-08:00) Pacific Time (US &				
8081 Pesticides	02/27/25 15:00	5	03/05/25 08:35	
T250860-19 SP1-0.5' [Soil] Sampled 02/19/25 09:40 (GMT-08:00) Pacific Time (US &				
6010 Title 22	02/27/25 15:00	5	08/18/25 09:40	
8015 Carbon Chain	02/27/25 15:00	5	03/05/25 09:40	
8260	02/27/25 15:00	5	03/05/25 09:40	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T250860

Client:	**Krazan, Clovis**	**Project Manager:**	**Jeff Lee**
Project:	**Fernandes Subdivision**	**Project Number:**	**[none]**

Analysis	Due	TAT	Expires	Comments
T250860-20 SP1-2.0' [Soil] Sampled 02/19/25 09:45 (GMT-08:00) Pacific Time (US &				
6010 Title 22	02/27/25 15:00	5	08/18/25 09:45	
8015 Carbon Chain	02/27/25 15:00	5	03/05/25 09:45	
8260	02/27/25 15:00	5	03/05/25 09:45	
T250860-21 SP2-0.5' [Soil] Sampled 02/19/25 09:50 (GMT-08:00) Pacific Time (US &				
6010 Title 22	02/27/25 15:00	5	08/18/25 09:50	
8015 Carbon Chain	02/27/25 15:00	5	03/05/25 09:50	
8260	02/27/25 15:00	5	03/05/25 09:50	
T250860-22 SP2-2.0' [Soil] Sampled 02/19/25 09:55 (GMT-08:00) Pacific Time (US &				
6010 Title 22	02/27/25 15:00	5	08/18/25 09:55	
8015 Carbon Chain	02/27/25 15:00	5	03/05/25 09:55	
8260	02/27/25 15:00	5	03/05/25 09:55	
T250860-23 SB1 [Soil] Sampled 02/19/25 10:00 (GMT-08:00) Pacific Time (US &				
6010 Pb	02/27/25 15:00	5	08/18/25 10:00	
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 10:00	As
8081 Pesticides	02/27/25 15:00	5	03/05/25 10:00	
8082 PCB	02/27/25 15:00	5	03/05/25 10:00	
T250860-24 SB2 [Soil] Sampled 02/19/25 10:01 (GMT-08:00) Pacific Time (US &				
6010 Pb	02/27/25 15:00	5	08/18/25 10:01	
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 10:01	As
8081 Pesticides	02/27/25 15:00	5	03/05/25 10:01	
8082 PCB	02/27/25 15:00	5	03/05/25 10:01	
T250860-25 SB3 [Soil] Sampled 02/19/25 10:02 (GMT-08:00) Pacific Time (US &				
6010 Pb	02/27/25 15:00	5	08/18/25 10:02	
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 10:02	As
8081 Pesticides	02/27/25 15:00	5	03/05/25 10:02	
8082 PCB	02/27/25 15:00	5	03/05/25 10:02	

SunStar Laboratories, Inc.
PROVIDING QUALITY ANALYTICAL SERVICES NATIONWIDE

WORK ORDER

T250860

Client:	**Krazan, Clovis**	**Project Manager:**	**Jeff Lee**
Project:	**Fernandes Subdivision**	**Project Number:**	**[none]**

Analysis	Due	TAT	Expires	Comments
T250860-26 SB4 [Soil] Sampled 02/19/25 10:03 (GMT-08:00) Pacific Time (US &				
6010 Pb	02/27/25 15:00	5	08/18/25 10:03	
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 10:03	As
8081 Pesticides	02/27/25 15:00	5	03/05/25 10:03	
8082 PCB	02/27/25 15:00	5	03/05/25 10:03	
T250860-27 SB5 [Soil] Sampled 02/19/25 10:04 (GMT-08:00) Pacific Time (US &				
6010 Pb	02/27/25 15:00	5	08/18/25 10:04	
6020 Metals by ICP-MS	02/27/25 15:00	5	06/19/25 10:04	As
8081 Pesticides	02/27/25 15:00	5	03/05/25 10:04	
8082 PCB	02/27/25 15:00	5	03/05/25 10:04	

Analysis groups included in this work order

6010 Title 22

subgroup 6010B T22 7470/71 Hg

Reviewed By

Date

Appendix G

Traffic Impact Analysis Report

4CREEKS | Design

Honest
Authentic
Solutions

Fernandes Subdivision

Tulare, CA

April 4, 2025

Traffic Impact Analysis Report

Prepared For:

Michael W. Miller, City Engineer
City of Tulare
411 E. Kern Avenue
Tulare, CA 93274

Prepared By:

4Creeks, Inc.
324 S. Santa Fe Street, Suite A
Visalia, CA 93292

Table of Contents

Acronyms and Abbreviations vi
Executive Summary 1
Level of Service (LOS) Standards 1
Existing Conditions 1
Opening Year (2027) Without Project Conditions 2
Opening Year (2027) Plus Project Conditions 2
10-Year Horizon (Year 2035) Without Project Conditions 2
10-Year Horizon (Year 2035) Plus Project Conditions 2
1. Project Information 3
1.1 Project Description and Location 3
1.2 Roadway Segment Capacity Analysis - Railroad Crossing 3
1.3 School Locations 3
1.4 Study Intersections 6
1.5 Pending and Approved Projects 6
1.6 Analysis Time Periods and Scenarios 6
1.7 Project Area Collision History Analysis 8
2. Methodology 11
2.1 Intersection Analysis 11
2.2 Roadway Segment Capacity Analysis 13
2.3 Queuing Analysis 15
2.4 VMT Analysis 15
3. Existing Conditions 16
3.1 Existing Roadway System 16
3.2 Existing Pedestrian Facilities 16
3.3 Existing Bicycle Facilities 17
3.4 Existing Transit Facilities 17
3.5 Existing Traffic Volumes 18
3.6 Intersection Level of Service Analysis – Existing Conditions 18
3.7 Roadway Segment Analysis – Existing Conditions 21
3.8 Signal Warrant Analysis – Existing Conditions 22
3.9 Queuing Analysis – Existing Conditions 22
4. Opening Year (2027) Without Project Conditions 24
4.1 Pending and Approved Projects Trip Generation 25
4.2 Pending and Approved Project Trip Assignment 25
4.3 Intersection Level of Service Analysis – Opening Year (2027) Without Project Conditions 30

4.4 Roadway Segment Analysis – Opening Year (2027) Without Project Conditions 30
4.5 Signal Warrant Analysis – Opening Year (2027) Without Project Conditions 31
4.5 Queuing Analysis – Opening Year (2027) Without Project Conditions 32
5. Opening Year (2027) Plus Project Conditions 33
5.1 Project Trip Generation 33
5.2 Project Trip Distribution and Assignment 33
5.3 Intersection Level of Service Analysis – Opening Year (2027) Plus Project Conditions 34
5.4 Roadway Segment Analysis – Opening Year (2027) Plus Project Conditions 38
5.5 Signal Warrant Analysis – Opening Year (2027) Plus Project Conditions 39
5.6 Queuing Analysis – Opening Year (2027) Plus Project Conditions 40
6. 10-Year Horizon (Year 2035) Without Project Conditions 41
6.1 Intersection Level of Service Analysis – 10-Year Horizon (Year 2035) Without Project Conditions 41
6.2 Roadway Segment Analysis – 10-Year Horizon (Year 2035) Without Project Conditions 43
6.3 Signal Warrant Analysis – 10-Year Horizon (Year 2035) Without Project Conditions 43
6.4 Queuing Analysis – 10-Year Horizon (Year 2035) Without Project Conditions 44
7. 10-Year Horizon (Year 2035) Plus Project Conditions 45
7.1 Intersection Level of Service Analysis – 10-Year Horizon (Year 2035) Plus Project Conditions 45
7.2 Roadway Segment Analysis – 10-Year Horizon (Year 2035) Plus Project Conditions 47
7.3 Signal Warrant Analysis – 10-Year Horizon (Year 2035) Plus Project Conditions 47
7.3 Queues Analysis – 10-Year Horizon (Year 2035) Plus Project Conditions 48
8. VMT Analysis 49
9. Conclusions and Recommendations 50
9.1 Analysis Summary 50
9.2 Recommended Improvements 51
9.3 Project Requirements 52

Appendices

Appendix A: Level of Service Methodology
Appendix B: FHWA Simplified Highway Capacity Calculation method for the Highway Performance Monitoring System
Appendix C: Existing Traffic Counts
Appendix D: Signal Warrant 3 Worksheets
Appendix E: Existing Conditions Worksheets
Appendix F: Opening Year (2027) Without Project Conditions Worksheets
Appendix G: Opening Year (2027) Plus Project Conditions Worksheets
Appendix H: 10-Year Horizon (Year 2035) Without Project Conditions Worksheets
Appendix I: 10-Year Horizon (Year 2035) Plus Project Conditions Worksheets
Appendix J: VMT Analysis Screening

List of Figures

Figure 1-1: Vicinity Map 4
Figure 1-2: Site Map 5
Figure 1-3: Pending and Approved Projects 7
Figure 1-4: Project Area Crash Diagram 9
Figure 3-1: TCRTA T5 Route 18
Figure 3-2: Existing Conditions Lane Configurations 19
Figure 3-3: Existing Conditions Peak Hour Traffic Volumes 20
Figure 4-1: Pending and Approved Project Trip Assignment 28
Figure 4-2: Opening Year (2027) Without Project Peak Hour Traffic Volumes 29
Figure 5-1: Project Trip Distribution 35
Figure 5-2: Project Trip Assignment 36
Figure 5-3: Opening Year (2027) Plus Project Peak Hour Traffic Volumes 37
Figure 6-1: 10-Year Horizon (Year 2035) Without Project Peak Hour Traffic Volumes 42
Figure 7-1: 10-Year Horizon (Year 2035) Plus Project Peak Hour Traffic Volumes 46

List of Tables

Table 1-1: Project Area Crash History (1/1/19 to 9/30/24) 10
Table 2-1: Level of Service for Unsignalized Intersections 11
Table 2-2: Level of Service for Signalized Intersections 12
Table 2-3: Level of Service for Roadway Segments 14
Table 2-4: Level of Service for Roadway Segments 14
Table 3-1: Level of Service Summary – Existing Conditions 21

Table 3-2: Roadway Segment Summary – Existing Conditions 21
Table 3-3: Warrant 3, Peak Hour Results - Existing Conditions 22
Table 3-4: 95th Percentile Queues - Existing Conditions 23
Table 4-1: Trip Generation Estimates - Pending and Approved Projects 25
Table 4-2: Level of Service Summary - Opening Year (2027) Without Project Conditions 30
Table 4-3: Roadway Segment Summary – 31
Table 4-4: Warrant 3, Peak Hour - Opening Year (2027) Without Project Conditions 32
Table 4-5: 95th Percentile Queues - Opening Year (2027) Without Project Conditions 32
Table 5-1: Project Trip Generation Estimate 33
Table 5-2: Level of Service Summary - Opening Year (2027) Plus Project Conditions 38
Table 5-3: Roadway Segment Summary - Opening Year (2027) Plus Project Conditions 39
Table 5-4: Warrant 3, Peak Hour Signal Warrant Results - Opening Year (2027) Plus Project Conditions 39
Table 5-5: 95th Percentile Queues - Opening Year (2027) Plus Project Conditions 40
Table 6-1: Level of Service Summary - 10-Year Horizon (Year 2035) Without Project Conditions 41
Table 6-2: Roadway Segment Summary - 10-Year Horizon (Year 2035) Without Project Conditions 43
Table 6-3: Warrant 3, Peak Hour Signal Warrant Results - 10-Year (Year 2035) Without Project Conditions 44
Table 6-4: 95th Percentile Queues - 10-Year (Year 2035) Without Project Conditions 44
Table 7-1: Level of Service Summary - 10-Year (2035) Plus Project Conditions 45
Table 7-2: Roadway Segment Summary - 10-Year (2035) Plus Project Conditions 47
Table 7-3: Warrant 3, Peak Hour Signal Warrant Results - 10-Year (2035) Plus Project Conditions 48
Table 7-4: 95th Percentile Queues - 10-Year (2035) Plus Project Conditions 48
Table 9-1: Turn Lane Length Recommendations 51

Acronyms and Abbreviations

AM	One-hour period of highest traffic during the AM hours of the day (7-9 AM)
AWSC	All-way stop-control
Caltrans	California Department of Transportation
CA MUTCD	California Manual on Uniform Traffic Control Devices
CHP	California Highway Patrol
CIP	Capital Improvement Program
EB	Eastbound
GIS	Geographic Information System
HCM	Highway Capacity Manual, 7th Edition
ITE	Institute of Transportation Engineers
LOS	Level of Service
Lt	Left turn
mph	Miles per hour
NB	Northbound
OWSC	One-way stop control
PM	One-hour period of highest traffic during the PM hours of the day (4-6 PM)
Rt	Right turn
SB	Southbound
SF	Square feet
SR	State Route
SWITRS	Statewide Integrated Traffic Records System
TCAG	Tulare County Association of Governments
TIA	Traffic Impact Analysis
TIF	Transportation Impact Fee
TIMS	Transportation Injury Mapping System
TWSC	Two-way stop control
UPRR	Union Pacific Railroad
VPH	Vehicles per hour
WB	Westbound

Executive Summary

This Traffic Impact Analysis (TIA) provides the analysis results for the proposed Fernandes Subdivision (Project) located at the northwest corner of the intersection of W. Paige Avenue and the S. Canal Street alignment in south Tulare, CA. The Project includes 120 single-family residential homes. The subdivision is accessible from W. Paige Avenue, which runs east-west. A Vicinity Map and Site Plan of the Project are shown on Figures 1-1 and 1-2, respectively.

The purpose of the TIA is to evaluate the impact on the transportation infrastructure due to the addition of the traffic from the proposed Project. To evaluate these impacts, three study intersections were evaluated during the weekday morning (AM) peak hour and evening (PM) peak hour under five study scenarios. The study intersections were evaluated for Existing, Opening Year (2027) Without Project, Opening Year (2027) Plus Project, 10-Year Horizon (Year 2035) Without Project, and 10-Year Horizon (Year 2035) Plus Project Conditions.

Level of Service (LOS) Standards

The State of California does not recognize traffic congestion and delay as an environmental impact per the California Environmental Quality Act (CEQA). However, the City of Tulare, TCAG, and other local agencies still use LOS standards to assess street and highway performance. The City of Tulare General Plan 2035 defines that the minimum acceptable LOS standard shall be LOS D per Policy TR-P2. LOS D will be taken as the threshold for acceptable traffic operation for this project.

It is proposed that a traffic issue may be identified if the addition of the traffic generated by the Project results in one of the following:

- Additional traffic triggers an intersection that is operating currently at an acceptable LOS (A, B, C, or D) to operate at unacceptable LOS (E or F).
- Additional traffic increases the average delay for a study intersection that is already operating at unacceptable LOS (E or F) by 5.0 seconds or more.
- Additional daily traffic volumes on a roadway segment causes it to operate below LOS D.

Existing Conditions

All three study intersections operate at acceptable service levels (LOS D or better) during the AM and PM peak hours. The roadway segment level of service on W. Paige Avenue is LOS B. Signal Warrant 3 for Intersection 1 (W. Paige Avenue/S. Pratt Street)

was not met. The storage lengths for all turn lanes for both Intersection 2 (W. Paige Avenue/S. K Street) and Intersection 3 (W. Bardsley Avenue/S. E Street) are sufficient.

Opening Year (2027) Without Project Conditions

All three study intersections operate at acceptable service levels (LOS D or better) during the AM and PM peak hours. The roadway segment level of service on W. Paige Avenue is LOS B. Signal Warrant 3 for Intersection 1 (W. Paige Avenue/S. Pratt Street) was not met. The EB left turn lane at Intersection 2 (W. Paige Avenue/S. K Street) is exceeded during the PM peak hour. The WB left turn lane at Intersection 3 (W. Bardsley Avenue/S. E Street) is exceeded during the PM peak hour.

Opening Year (2027) Plus Project Conditions

All three study intersections operate at acceptable service levels (LOS D or better) during the AM and PM peak hours. The roadway segment level of service on W. Paige Avenue is LOS C. Signal Warrant 3 for Intersection 1 (W. Paige Avenue/S. Pratt Street) was not met. The EB left turn lane at Intersection 2 (W. Paige Avenue/S. K Street) is exceeded during the PM peak hour. The WB left turn lane at Intersection 3 (W. Bardsley Avenue/S. E Street) is exceeded during the PM peak hour.

10-Year Horizon (Year 2035) Without Project Conditions

All three study intersections operate at acceptable service levels (LOS D or better) during the AM and PM peak hours. The roadway segment level of service on W. Paige Avenue is LOS C. Signal Warrant 3 for Intersection 1 (W. Paige Avenue/S. Pratt Street) was not met. The EB left turn lane at Intersection 2 (W. Paige Avenue/S. K Street) is exceeded during the PM peak hour. The WB left turn lane at Intersection 3 (W. Bardsley Avenue/S. E Street) is exceeded during the PM peak hour.

10-Year Horizon (Year 2035) Plus Project Conditions

All three study intersections operate at acceptable service levels (LOS D or better) during the AM and PM peak hours. The roadway segment level of service on W. Paige Avenue is LOS D. Signal Warrant 3 for Intersection 1 (W. Paige Avenue/S. Pratt Street) was not met. The EB left turn lane at Intersection 2 (W. Paige Avenue/S. K Street) is exceeded during the AM and PM peak hours. The WB left turn lane at Intersection 3 (W. Bardsley Avenue/S. E Street) is exceeded during the PM peak hour.

1. Project Information

This report summarizes the results of the Traffic Impact Analysis (TIA) for the proposed Fernandes Subdivision (Project). Analysis methodologies and assumptions are discussed further in Appendices A and B.

1.1 Project Description and Location

The Project is a low-density residential subdivision (APN 174-030-008) located on approximately 19.58 acres in south Tulare, California. The Project includes 120 single-family residential homes located at the northwest corner of W. Paige Avenue and S. Canal Street. The subdivision is accessible from W. Paige Avenue, which runs east-west. A Vicinity Map and Site Plan of the Project are shown on Figures 1-1 and 1-2, respectively.

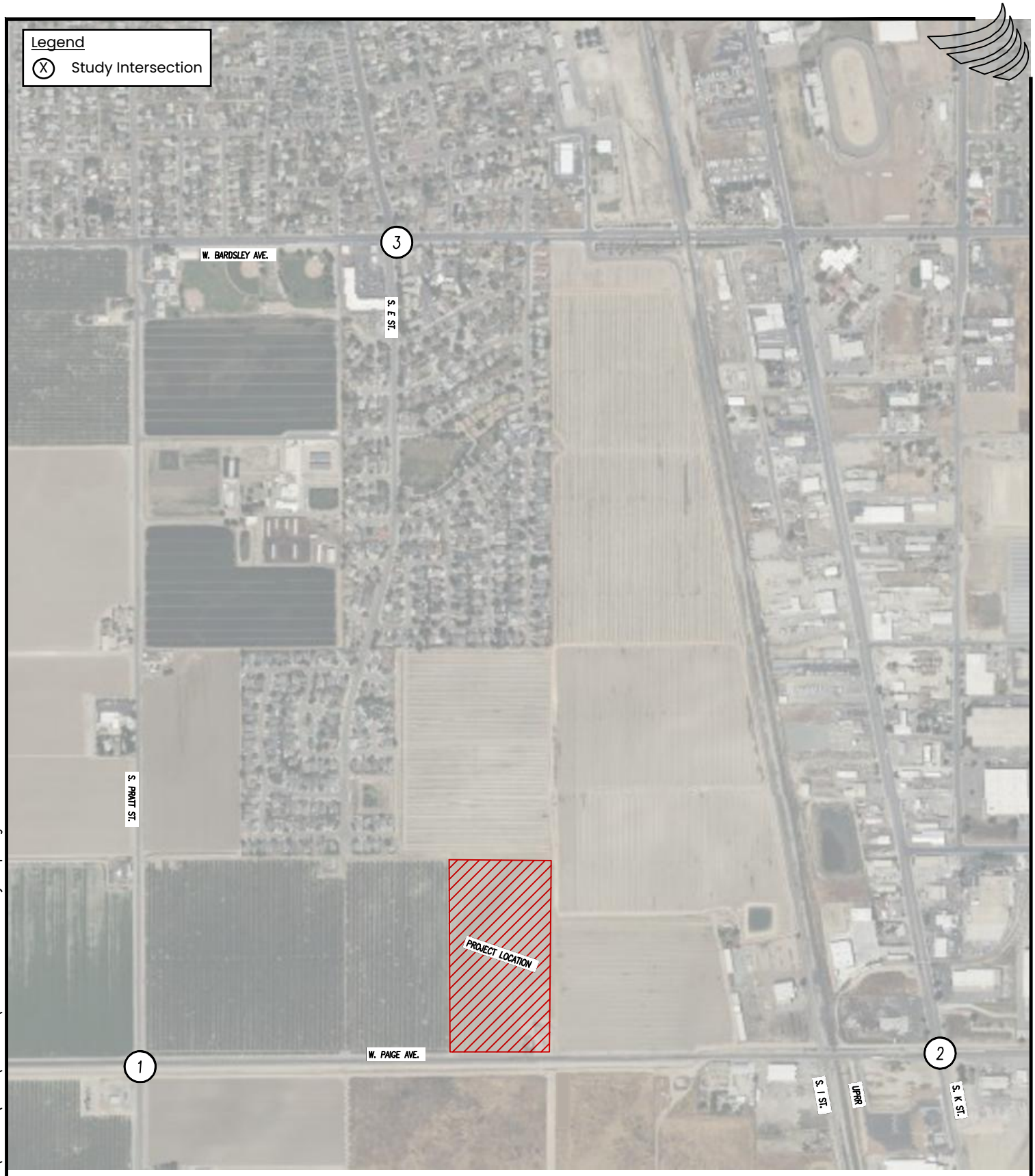
1.2 Roadway Segment Capacity Analysis - Railroad Crossing

Per the site plan review comments, a roadway segment analysis will be conducted to evaluate W. Paige Avenue and the Union Pacific Railroad (UPRR) crossing, which is located immediately east of the intersection with S. I Street. There is an existing active railroad warning system with automatic gates at the grade crossing.

The UPRR tracks intersect W. Paige Avenue approximately 50 feet east of the intersection with S. I Street. According to data available at the time of report preparation, there are approximately 14 train movements daily. Train engineers are required to sound the train horn when the train is within 1,000 feet of an at-grade crossing. The roadway segment analysis on W. Paige Avenue between S. Pratt Street and S. I Street will seek to evaluate the congestion and delay at the UPRR at-grade crossing.

1.3 School Locations

There are two schools in the Project area: Tulare Tech Prep High School and Countryside High School. The schools share the same campus at the southeast corner of W. Bardsley Avenue and S. Pratt Street. W. Bardsley Avenue is a school zone between S. Pratt Street and Wright Way.



NORTH

FIGURE 1-1: Vicinity Map
Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg

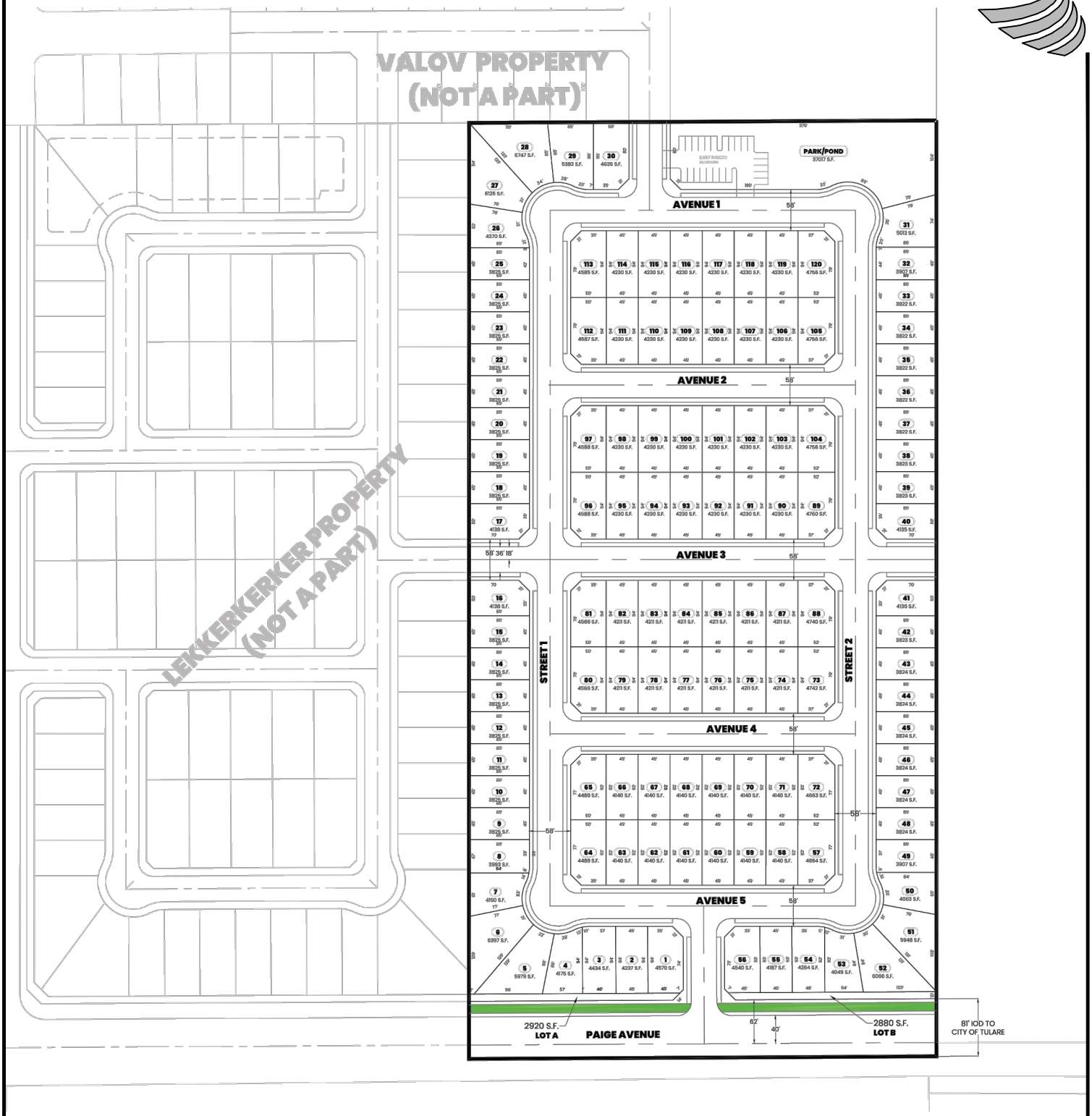


FIGURE 1-2: Site Plan

Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Near Term Map.dwg

1.4 Study Intersections

The following three study intersections were identified by the City of Tulare for analysis:

1. W. Paige Avenue/S. Pratt Street
    - AWSC
2. W. Paige Avenue/S. K Street
    - Signalized
3. W. Bardsley Avenue/S. E Street
    - Signalized

1.5 Pending and Approved Projects

This analysis will also include an analysis of the Project's near-term conditions. It will consider the effects of traffic generated by pending and approved projects in the study area. Our understanding is that the following projects will be constructed concomitantly or before the proposed Project. These projects are shown in Figure 1-3.

1. Lekkerkerker Property (Subdivision)
    - APNs: 174-030-009, 174-030-010
    - 228 single-family residential homes
2. Valov Property (Subdivision)
    - APN: 174-030-007
    - 160 single-family residential homes
3. Paige Industrial Warehouse and Office
    - Total office space: 20,000 SF
    - Total warehouse space: 1,064,273 SF
4. Liberty Hills (Subdivision)
    - APN: 168-09-06
    - 384 single-family residential homes

1.6 Analysis Time Periods and Scenarios

Intersection operational analyses to determine the LOS were performed for the following time periods:

- Weekday AM peak hour between 7:00 AM and 9:00 AM
- Weekday PM peak hour between 4:00 PM and 6:00 PM

Existing traffic counts were collected on Tuesday, February 25, 2025 during clear weather conditions.

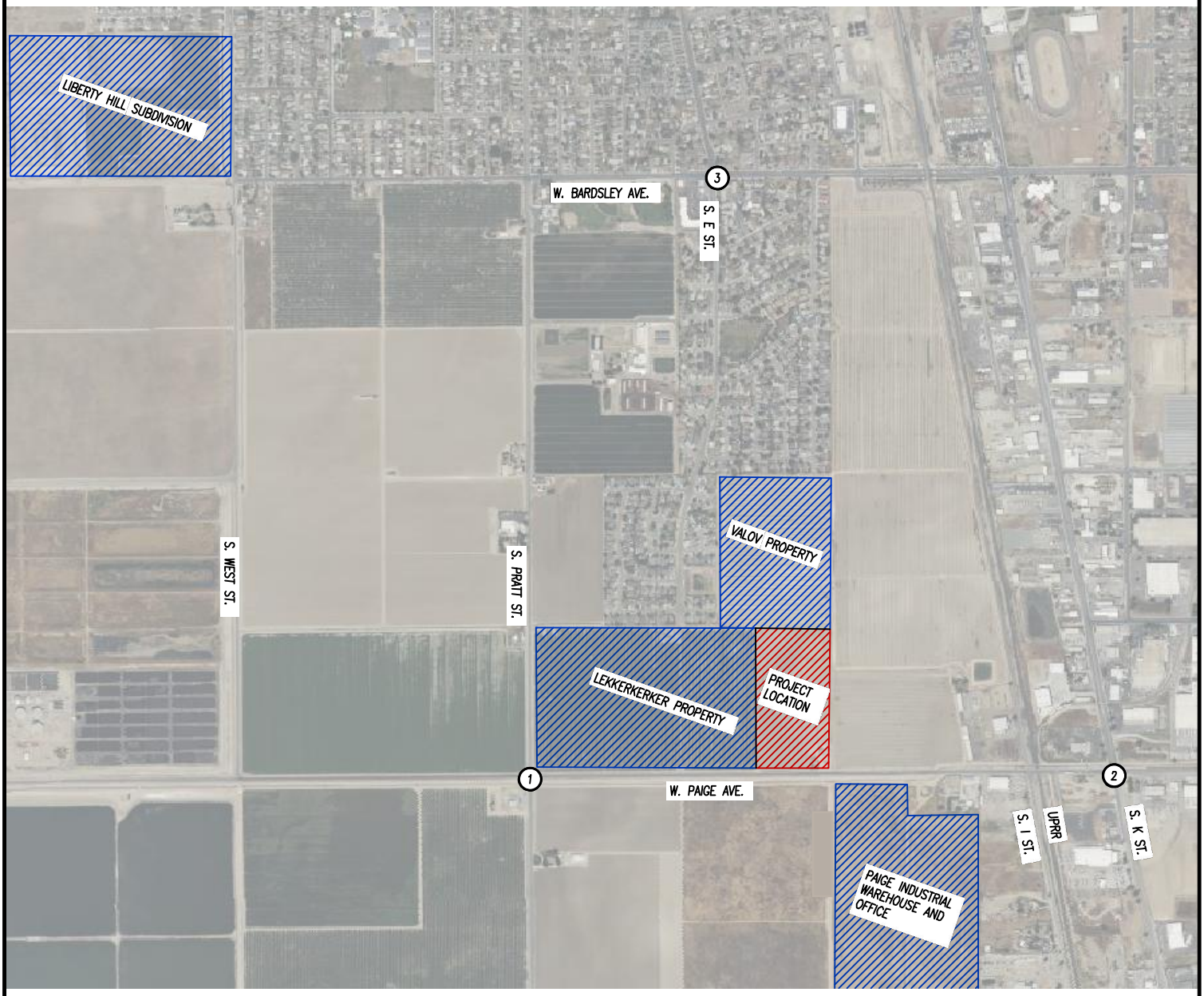


FIGURE 1-3: Pending and Approved Projects
Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Near Term Map.dwg

The following analysis scenarios were determined based on City guidelines:

- Existing Conditions
- Opening Year (2027) Without Project Conditions
- Opening Year (2027) Plus Project Conditions
- 10-Year Horizon (Year 2035) Without Project Conditions
- 10-Year Horizon (Year 2035) Plus Project Conditions

Traffic signal warrant analysis for the following intersection was completed using Warrant 3, Peak Hour, per the guidelines of the California Manual on Uniform Traffic Control Devices (CA MUTCD). No other signal warrant analyses were completed.

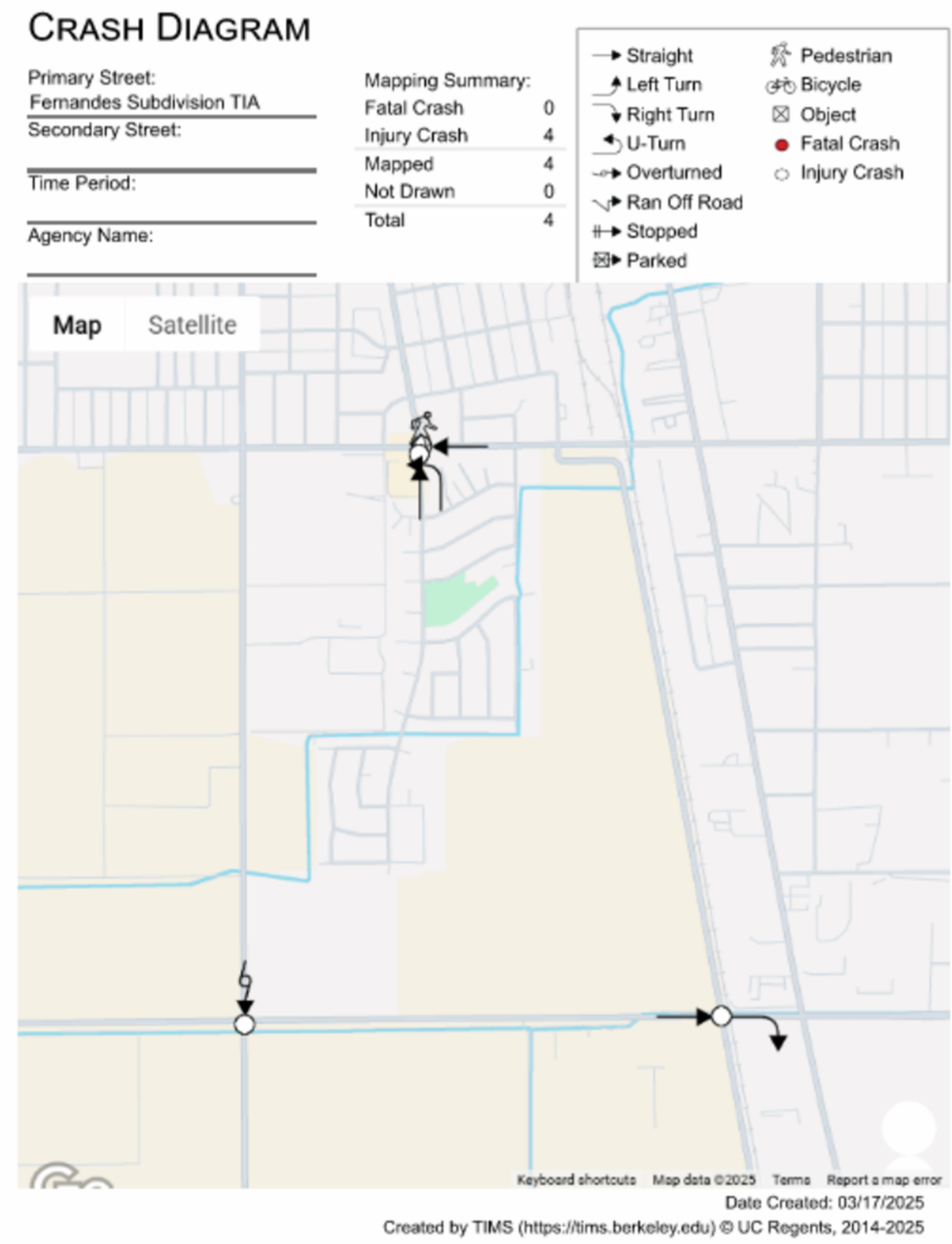
- W. Paige Avenue/S. Pratt Street

1.7 Project Area Collision History Analysis

The University of California, Berkeley developed the Traffic Injury Mapping System (TIMS) to document traffic collisions throughout the State of California. TIMS uses data provided by the Statewide Integrated Traffic Records System (SWITRS), which is a tool used by California Highway Patrol (CHP) and other allied agencies throughout the state to include statistical data on traffic incidents.

Information from the TIMS SWITRS GIS map shows that four collisions have occurred throughout the study area during the selected period between January 1, 2019, and the latest available data reported, September 30, 2024. Of the four collisions, none were fatal. A graphical representation of the traffic collisions in the study area are shown in Figure 1-4 below.

Figure 1-4: Project Area Crash Diagram



Listed below in Table 1-1 are the crashes in the study area with their associated collision type and injury statistics. During that same period, the City of Tulare had a reported 457 crashes (52 fatal and 592 injured). Pedestrian-involved crashes comprised 13.6% of all City-wide collisions, bicycle-involved was 5.5%, and motorcycle-involved was 8.3%. During the same period, Tulare County had approximately 9,100 injury collisions and 371 fatal collisions. Crashes within the study area represent 0.04% of incidents that occurred in the County during that period.

Table 1-1: Project Area Crash History (1/1/19 to 9/30/24)

Location	Date of Crash	Type of Crash	Crash Severity
Pratt St. and Paige Ave.	1/14/20	Overturned (non-collision)	1 injured
S. I St. and Paige Ave.	4/3/24	Rear End	3 injured (severe)
S. E St. and Bardsley Ave.	8/6/21	Vehicle/ Pedestrian	1 injured
	12/16/19	Head-On	2 injured

Reference: *Traffic Injury Mapping System, University of California, Berkeley*

2. Methodology

Guidelines set by the City of Tulare were followed in the preparation of this TIA. LOS methodologies from the latest edition of the Highway Capacity Manual (HCM) were used to analyze street and intersection capacities. The City of Tulare LOS standards were applied to quantitatively assess the performance of each study intersection and roadway segments.

2.1 Intersection Analysis

Intersection LOS analysis was performed using the Synchro Studio version 12 (Synchro 12) software program. Synchro 12 supports HCM 7th Edition methodologies and was deemed an acceptable program by City of Tulare staff for assessment of traffic impacts for the Project. Levels of Service can be determined for both signalized and stop-controlled intersections. There are both signalized and stop-controlled intersections under analysis as part of this TIA.

Tables 2-1 and 2-2 indicate the ranges in average delay at unsignalized and signalized intersections for each level of service, from LOS A to LOS F.

Each of the study intersections was analyzed using Synchro 12 software and HCM 7th edition methodology. The LOS assessment under all scenarios is based on current traffic controls unless otherwise noted. The LOS methodology for stop-controlled and signalized intersections are described in detail in Appendix A.

Table 2-1: Level of Service for Unsignalized Intersections

Level of Service	Average Vehicle Delay (seconds)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Reference: *Highway Capacity Manual, 7th Edition,* Transportation Research Board, 2024

Table 2-2: Level of Service for Signalized Intersections

Level of Service	Description	Average Vehicle Delay (seconds)
A	Volume-to-capacity ratio is no greater than 1.0. Progression is exceptionally favorable, or the cycle length is very short.	<10
B	Volume-to-capacity ratio is no greater than 1.0. Progression is highly favorable, or the cycle length is very short.	>10-20
C	Volume-to-capacity ratio is no greater than 1.0. Progression is favorable, or the cycle length is moderate.	>20-35
D	Volume-to-capacity ratio is high but no greater than 1.0. Progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35-55
E	Volume-to-capacity ratio is high but no greater than 1.0. Progression is unfavorable and cycle length is long. Individual cycle failures are frequent.	>55-80
F	Volume-to-capacity ratio is greater than 1.0. Progression is very poor and cycle length is long. Most cycles fail to clear the queue.	>80

Reference: *Highway Capacity Manual, 7th Edition,* Transportation Research Board, 2024

Various roadway parameters, such as geometry, traffic volumes, and properties (peak hour factors, turn pocket length, etc.) were input in Synchro 12 to accurately model the travel delay and LOS for each study scenario. The intersection LOS and delays reported in this TIA represent the HCM 7th Edition output and methodologies. Assumptions are listed below:

Lane Geometry

- Turn pocket lengths were measured from aerial imagery and rounded to the nearest 5 feet.
- Intersection lane geometry and intersection control was investigated using satellite imagery.

Traffic Conditions

- Peak hour factors (PHF) for each intersection were obtained from the existing traffic counts in Appendix C. The average PHF for the intersection was applied

to each approach for Existing, Opening Year (2027) Without Project, and Opening Year (2027) Plus Project Conditions. For 10-Year Horizon (2035) Without Project and 10-Year Horizon (2035) Plus Project Conditions, a PHF of 0.92 was applied, unless the existing PHF was greater than 0.92. PHF of 0.92 is the default value assigned in the HCM.

- Heavy vehicle percentages were based on the percentages gathered for each intersection for the AM and PM peak hour for Existing, Opening Year (2027) Without Project, and Opening Year (2027) Plus Project Conditions. For 10-Year Horizon (2035) Without Project and 10-Year Horizon (2035) Plus Project Conditions, a heavy vehicle percentage of 2.0 was applied, unless the heavy vehicle percentage was measured to be greater than 2.0. Heavy vehicle percentage of 2.0 is the default value assigned in the HCM.
- Roadway link speeds were observed via satellite imagery and input to the Synchro 12 network.

2.2 Roadway Segment Capacity Analysis

The HCM categorizes LOS parameters by uninterrupted flow and interrupted flow. Uninterrupted flow facilities flow freely without traffic flow interruptions along the corridor. Interrupted flow facilities have fixed elements that cause interruptions along the corridor, such as stop signs and traffic signals. A roadway segment is defined as a stretch of roadway located between signalized or controlled intersections.

Segment LOS indicates whether the capacity of a roadway can accommodate future traffic volumes. Table 2-3 provides a definition of roadway segment LOS. The performance criteria used for evaluating volumes and capacities on the road and highway system for the Project were estimated using the Federal Highway Administration's (FHWA) *Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System*, dated October 2017 (see Appendix B). The tables in Appendix B of the FHWA *Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System* consider the capacity of individual roadway and highway segments. Roadway segment capacities were determined using information shown in Table 2-4, which is based on the LOS tables in Appendix B.

Table 2-3: Level of Service for Roadway Segments

Level of Service	Definition
A	Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream.
B	Segment is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.
C	Segment is in the range of stable flow but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream.
D	Segment is crowded with a large number of vehicles restricting mobility and stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.
F	Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic approaches a point where the amount of traffic exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop and go waves and are extremely unstable.

Reference: *Highway Capacity Manual, 7th Edition,* Transportation Research Board, 2024

Table 2-4: Level of Service for Roadway Segments

Level of Service						
Lanes	**Median**	**A**	**B**	**C**	**D**	**E**
Urban - Principal Arterial						
2	Undivided	N/A	5,200	8,500	9,800	10,900

Reference: *FHWA – Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System, Table 16.*

N/A – LOS is not achievable in this type of facility.

2.3 Queuing Analysis

A queuing analysis was performed for each study intersection using Synchro 12. The software aligns with the methodologies of the HCM 7th edition. Synchro 12 provides queuing results as 95th-percentile queue lengths in feet for signalized intersections.

2.4 VMT Analysis

Per Senate Bill 743 (SB 743), which went into effect in California on July 1, 2020, the performance measure for CEQA transportation studies was changed from level of service (LOS) to vehicle miles traveled (VMT). An assessment of potential VMT impacts associated with the Project is provided in Section 8.0 VMT Analysis.

3. Existing Conditions

This section describes the existing conditions in the immediate surrounding area of the Project, including roadway facilities, bicycle and pedestrian facilities, and available transit service. Existing traffic volumes and LOS calculations are provided for the study intersections.

3.1 Existing Roadway System

Access to the Project is provided via W. Paige Avenue.

W. Paige Avenue is a two-lane, east-west major arterial from S. Pratt Street to S. K Street. There is a section of W. Paige Avenue along the Paige Industrial Warehouse frontage (located approximately 700' to the west of the intersection with S. I Street) that has been recently widened to include a center two-way left-turn (TWLT) lane for approximately 1,000'. The speed limit is 50 mph.

S. Pratt Street is a two-lane, north-south major arterial from W. Bardsley Avenue to W. Paige Avenue. The speed limit is 55 mph.

W. Bardsley Avenue is a two-lane, east-west minor arterial from S. Pratt Street to S. K Street. W. Bardsley Avenue has a center TWLT lane between S. Pratt Street and S. Vetter Drive. Between S. Vetter Drive and S. K Street, there is a raised median. Bike lanes run along both the north and south sides of W. Bardsley Avenue between S. Pratt Street and S. H Street where they turn into an off-road multimodal path to S. K Street. The speed limit along W. Bardsley Avenue is 40 mph from S. Pratt Street to S. E Street. It is 45 mph from S. E Street to S. K Street.

S. E Street is a two-lane, north-south minor arterial between W. Bardsley Avenue and the dead-end south of Lemonwood Avenue. S. E Street has bike lanes that run along both the east and west sides of the road. As part of the near-term projects, S. E Street is proposed to extend south to W. Paige Avenue. The speed limit is 40 mph.

S. K Street is a four-lane, north-south major arterial from W. Bardsley Avenue to W. Paige Avenue. S. K Street has a TWLT lane that runs the entire length of roadway within this project area. The speed limit is 50 MPH.

3.2 Existing Pedestrian Facilities

W. Paige Avenue does not have pedestrian facilities in the Project area.

S. Pratt Street has no pedestrian facilities, except for approximately 130 feet of sidewalk along the east side of the roadway directly south of W. Bardley Avenue.

W. Bardsley Avenue has connected sidewalk and curb ramps on the north and south sides of the roadway between S. Pratt Street and S. K Street.

S. E Street has connected sidewalk and curb ramps on the east and west sides of the roadway within the Project area.

S. K Street has pedestrian facilities along both the east and west sides of the road; however, there are missing segments along both sides.

3.3 Existing Bicycle Facilities

W. Paige Avenue does not have bicycle facilities.

S. Pratt Street does not have bicycle facilities.

W. Bardsley Avenue has on-street Class II bike lanes on both sides of the roadway between S. Pratt Street and S. H Street where they turn into a Class I shared-use path to S. K Street.

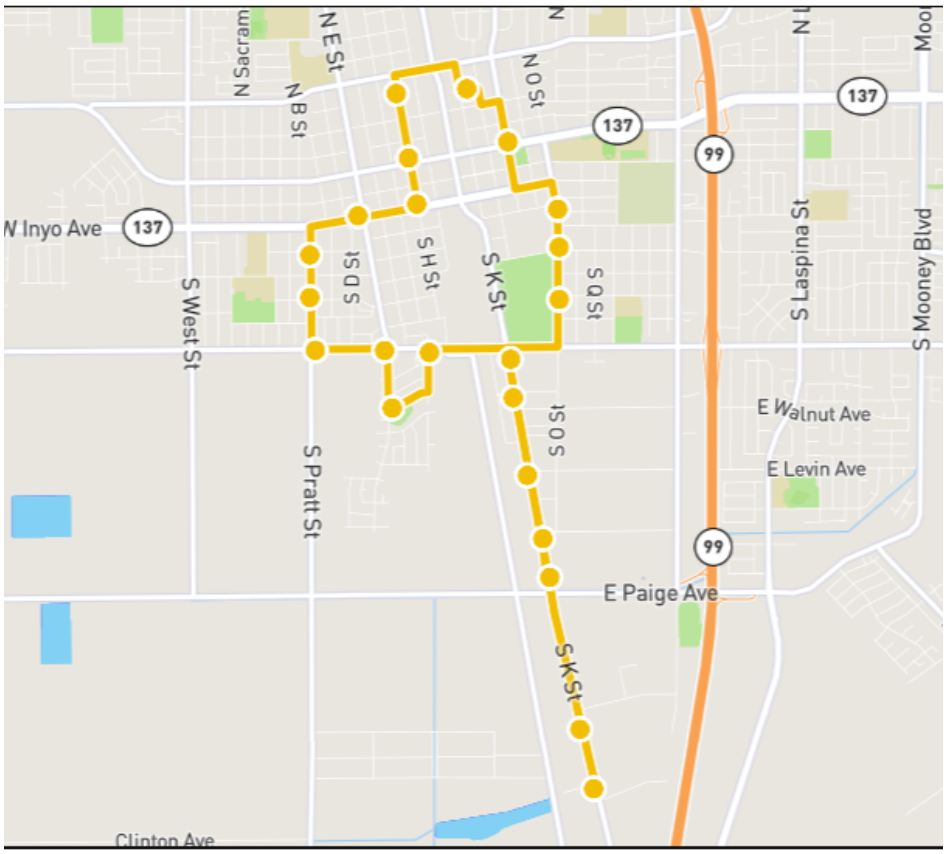
S. E Street has on-street Class II bike lanes that run northbound and southbound.

S. K Street does not have bicycle facilities.

3.4 Existing Transit Facilities

The Tulare County Regional Transit Agency (TCRTA) operates the T5 Southwest Tulare route in the Project area, shown in Figure 3-1 below. There are bus stops along W. Bardsley Avenue at the Tulare Tech Prep High School which is located at the southeast corner of W. Bardsley Avenue and S. Pratt Street, at the southwest corner of W. Bardsley Avenue and S. E Street, at the southeast corner of W. Bardsley Avenue and S. Vetter Drive, and at the southwest and southeast corners of W. Bardsley Avenue and S. K Street. There are several transit stops along S. K Street and one at Parkwood Meadows Park at the corner of S. E Street and Oakwood Drive. The bus route runs between 7:00 AM to 7:00 PM, Monday through Saturday, and 8:00 AM to 5:00 PM on Sunday.

Figure 3-1: TCRTA T5 Route

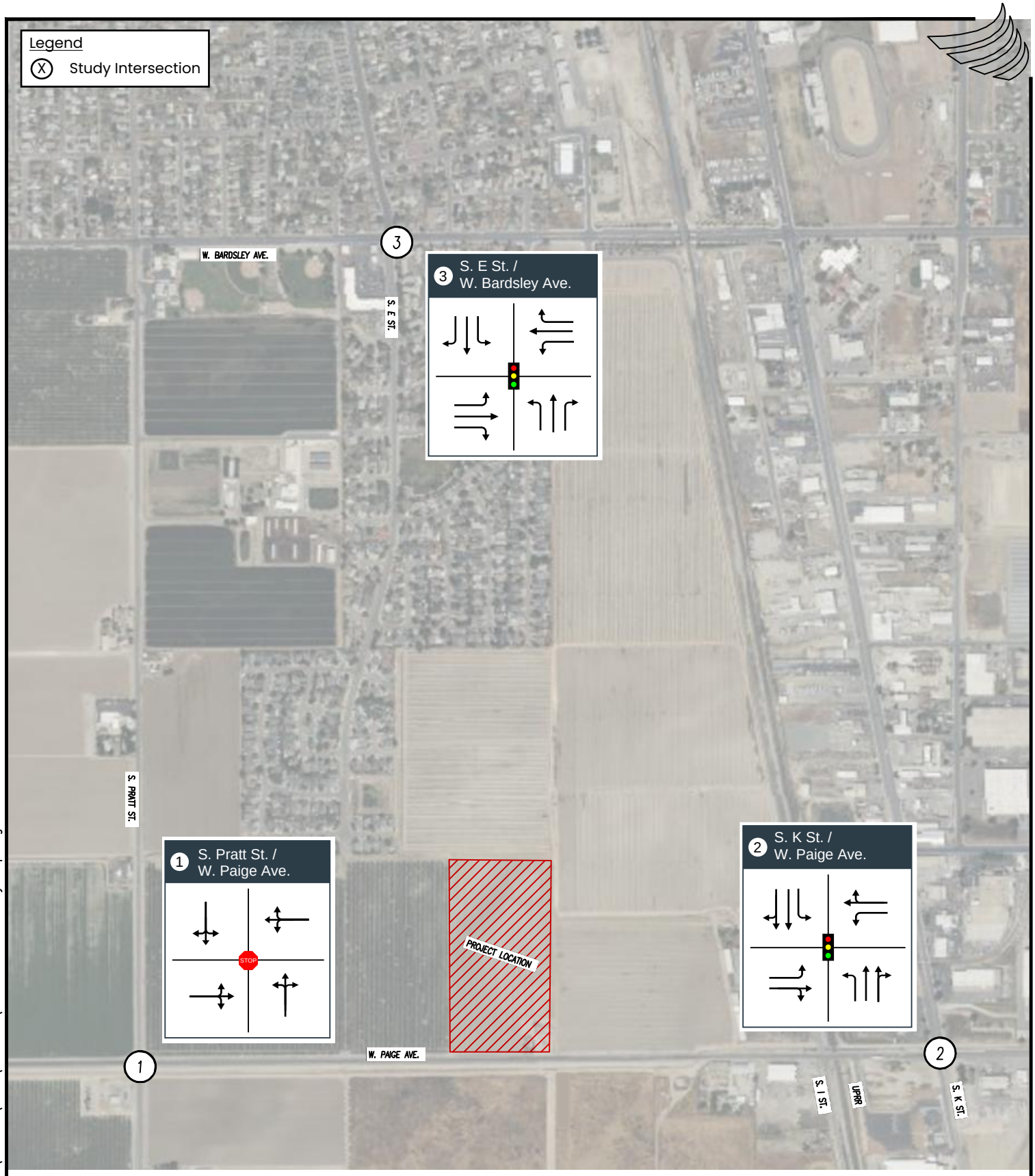


3.5 Existing Traffic Volumes

Turning movement volumes were collected at the three study intersections on a weekday for both the AM and PM peak periods. Volumes were collected on Tuesday, February 25, 2025, between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM. These existing AM and PM peak hour traffic volumes are shown on Figure 3-2. Appendix C includes the data sheets for the collected vehicle, bicycle, and pedestrian counts.

3.6 Intersection Level of Service Analysis – Existing Conditions

The study intersection existing lane configurations and intersection controls are shown on Figure 3-2. The existing conditions traffic volumes are shown on Figure 3-3. The existing conditions LOS were calculated for each peak period as shown in Table 3-1. LOS calculation sheets for Existing Conditions are included in Appendix E.

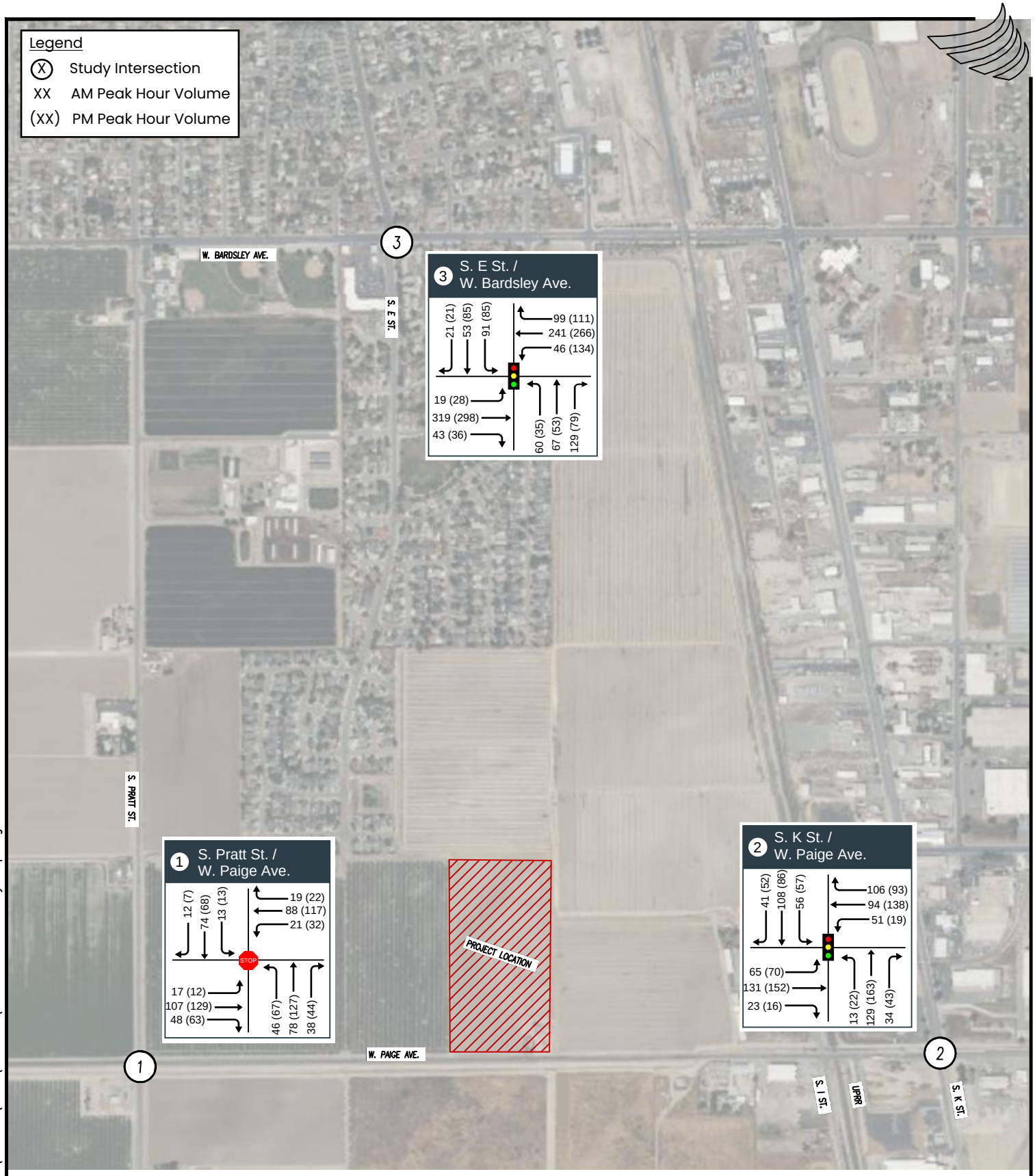


NORTH

FIGURE 3-2: Existing Conditions
Lane Configurations
Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg



\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg

NORTH

FIGURE 3-3: Existing Conditions Peak Hour Traffic
Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

Table 3-1: Level of Service Summary – Existing Conditions

#	Intersection	Peak Hour[1]	Existing Conditions	
			Delay[2]	LOS[3]
1	W. Paige Ave./S. Pratt St.	AM	9.2	A
		PM	11.4	B
2	W. Paige Ave./S. K St.	AM	20.5	C
		PM	20.5	C
3	W. Bardsley Ave./S. E St.	AM	10.2	B
		PM	10.3	B

Notes:

1. AM – morning peak hour, PM – evening peak hour
2. Delay – Entire intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop-controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.
3. LOS – Level of Service. **Bold** indicates unacceptable Level of Service. **Red** indicates a significant impact.

As shown in Table 3-1, all intersections operate within the limits of the City's adopted LOS standard (LOS D or better) during Existing Conditions.

3.7 Roadway Segment Analysis – Existing Conditions

Results of the Average Daily Traffic (ADT) LOS segment analysis along W. Paige Avenue between S. Pratt Street and S. I Street is shown in Table 3-2. The performance criteria for evaluating this roadway segment was estimated using the Federal Highway Administration's (FHWA) *Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System*, dated October 2017.

Table 3-2: Roadway Segment Summary – Existing Conditions

Street Segment	Segment Description	Roadway Classification	Existing Conditions	
			ADT Volume	LOS[1]
W. Paige Ave. (between S. Pratt St. and S. I St.)	2 Lanes, Undivided	Major Arterial	4,343	B

Note:

1. LOS – Level of Service. **Bold** indicates unacceptable Level of Service.

Results of the analysis show that W. Paige Avenue between S. Pratt Street and S. I Street meets the City of Tulare's minimum acceptable level of service criteria (LOS D or better).

Results of the analysis show that W. Paige Avenue between S. Pratt Street and S. I Street meets the City of Tulare's minimum acceptable level of service criteria (LOS D or better).

3.8 Signal Warrant Analysis – Existing Conditions

The results of the peak hour warrant under Existing Conditions are summarized in Table 3-3 below. Signalization of an intersection may be appropriate if the intersection meets one or more of the nine signal warrants detailed in the CA MUTCD. Warrant 3, Peak Hour, was used here to indicate whether signalization may be appropriate, but even if the peak hour volume warrant is met, a more detailed signal warrant study is recommended before a traffic signal is installed.

Table 3-3: Warrant 3, Peak Hour Results - Existing Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
1	W. Paige Ave./S. Pratt St.	AWSC	No	No

W. Paige Avenue and S. Pratt Street are both considered major arterials. However, the traffic volumes on W. Paige Avenue are slightly higher than on S. Pratt Street; therefore, W. Paige Avenue is considered to be the major street.

Intersection 1 did not meet Warrant 3 for either the AM or PM peak hour.

3.9 Queuing Analysis – Existing Conditions

The queuing analyses under Existing Conditions are summarized in Table 3-4 below. The 95th percentile queue length volumes for all turn lanes for both study intersections are sufficient.

Table 3-4: 95th Percentile Queues - Existing Conditions

#	Intersection	Lane Group	Storage Length (ft)	Existing Queue[1]	
				AM	PM
2	W. Paige Ave./S. K St.	NB Lt	150	20	30
		SB Lt	150	63	68
		EB Lt	120	72	82
		WB Lt	105	57	27
3	W. Bardsley Ave./S. E St.	NB Lt	135	28	18
		NB Rt	50	21	18
		SB Lt	135	39	36
		EB Lt	75	12	16
		WB Lt	75	24	60

Note:

1. Queue lengths denoted in **BOLD** indicate that the 95th percentile volume exceeds capacity and that the queue may be longer.

4. Opening Year (2027) Without Project Conditions

This section describes the impacts of the Opening Year (Year 2027) Without Project Conditions on the existing transportation system in the immediate vicinity of the Project site. The Opening Year (2027) Without Project Conditions evaluates the projected year 2027 traffic volumes plus traffic generated by the pending and approved projects that were provided by the City of Tulare. Existing Conditions volumes at study intersections and roadway segment were projected forward two years using a growth rate of 2% per year. This growth rate was based on City of Tulare census data growth from the year 2010 to 2023.

Per discussion with the City of Tulare, the known pending and approved projects near the proposed Fernandes Subdivision are shown in the list below. These project locations, along with the proposed Project are shown in Figure 1-3.

1. Lekkerkerker Property (Subdivision)
    - APNs: 174-030-009, 174-030-010
    - 228 single-family residential homes
2. Valov Property (Subdivision)
    - APN: 174-030-007
    - 160 single-family residential homes
3. Paige Industrial Warehouse and Office
    - Total office space: 20,000 SF
    - Total warehouse space: 1,064,273 SF
4. Liberty Hills (Subdivision)
    - APN: 168-09-06
    - 384 single-family residential homes

Traffic generated from the pending and approved projects was determined and added to the roadway system based on the following process:

- Trip Generation – the number of pending and approved project-only trips are estimated.
- Trip Distribution – the direction the trips travel to and from the project sites are estimated.
- Trip Assignment – the project trips are assigned to intersection movements and street segments.

4.1 Pending and Approved Projects Trip Generation

Data provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*, was used to estimate the number of trips anticipated by the list of pending and approved projects alone without the addition of the proposed project. Trip generation estimates for the four projects are shown in Table 4-1 and are based on the number of units of residential housing (land use code 210) planned in the proposed projects and per 1,000 square feet of gross floor area for warehousing (land use code 150).

Table 4-1: Trip Generation Estimates - Pending and Approved Projects

Project #	Land Use[1,2]	Units	Daily		A.M. Peak Hour					P.M. Peak Hour				
			Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
1	Single-Family Detached Housing (210)	228 DU	9.43	2,154	0.70	25:75	39	119	158	0.94	63:37	136	80	216
2	Single-Family Detached Housing (210)	160 DU	9.43	1,555	0.70	25:75	29	85	114	0.94	63:37	97	58	155
3	Warehousing (150)	1084.3 Per 1,000 GFA	1.71	1,751	0.17	77:23	118	36	154	0.18	28:72	44	113	157
4	Single-Family Detached Housing (210)	384 DU	9.43	3,479	0.70	25:75	63	190	253	0.94	63:37	222	130	352
Total Trip Generation				**8,939**			**249**	**430**	**679**			**499**	**381**	**880**

Reference: *Trip Generation Manual, 11th Edition*, Institute of Transportation Engineers.

Notes:

1. Land use code 210 estimates trips per dwelling unit (DU).
2. Land use code 150 estimates trips per 1,000 square feet of gross floor area (GFA).

As shown in Table 4-1, the pending and approved projects are expected to generate a combined 8,939 daily trips, including 679 AM peak hour trips (249 inbound, 430 outbound) and 880 PM peak hour trips, (499 inbound, 381 outbound).

4.2 Pending and Approved Project Trip Assignment

Trip distribution is a process that determines the proportion of vehicles that are expected to travel between the Project site and various destinations outside the Project study area and determines the various routes that vehicles would likely take

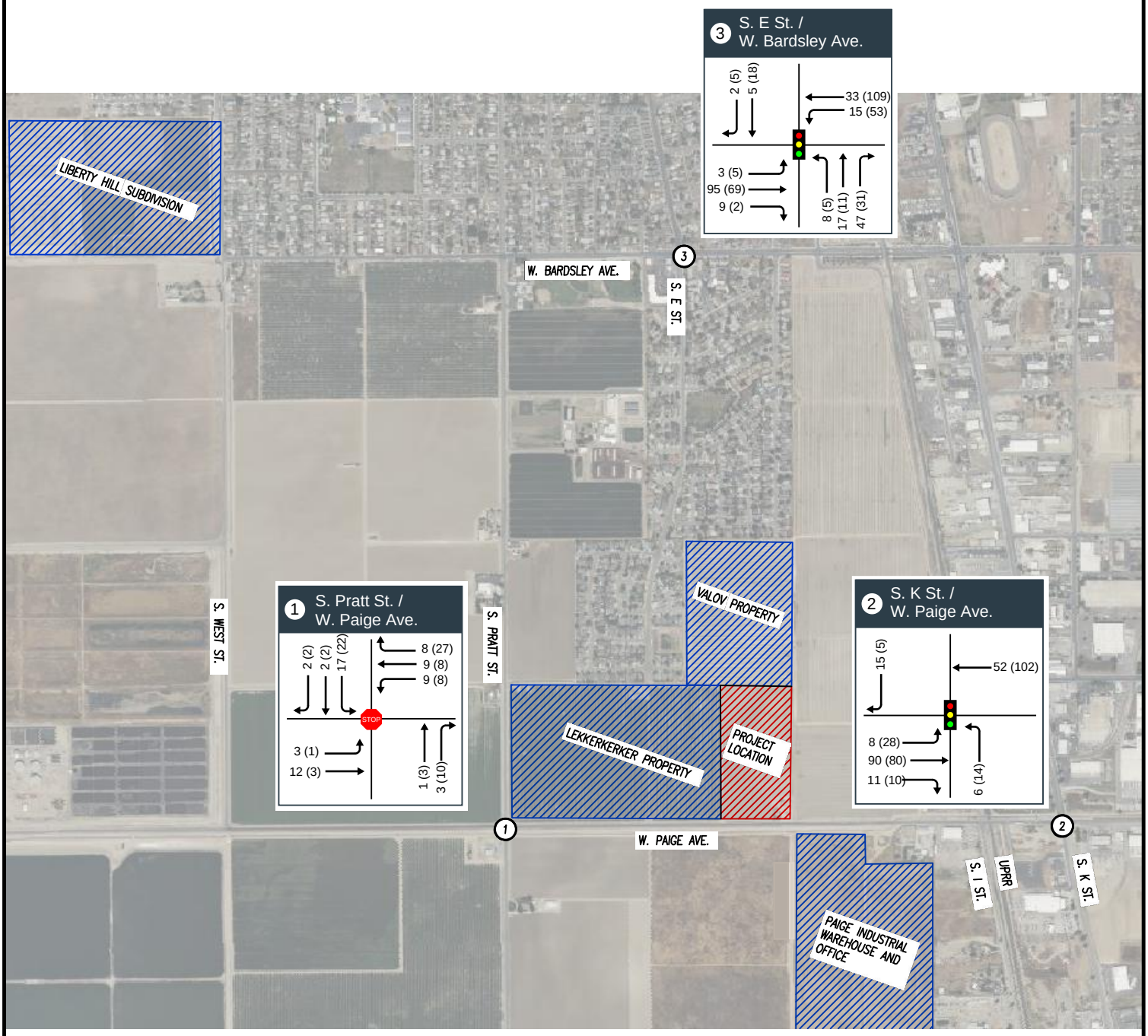
from the Project site to each destination using the calculated trip distribution. The regional distribution of Project trips was estimated by performing a select zone analysis using an appropriate travel model. The Tulare County Association of Governments (TGAG) maintains an activity-based model for Tulare County, including City of Tulare. TCAG was contacted regarding this analysis. Trip distribution assumptions for the proposed Project were developed based on existing travel patterns, knowledge of the study area, the available TIA reports for Lekkerkerker Property and Liberty Hills Subdivision, and consultation with City staff and the TCAG travel demand model.

The following assumptions were made to develop the estimated trip assignment for the pending and approved projects. The trips shown in Table 4-1 were distributed onto the roadway network in accordance with the following assumptions:

- The trip assignment for projects 1 and 2 were obtained from the TIA for Lekkerkerker Subdivision, prepared by VRPA Technologies Inc., dated October 2024. These volumes were applied to each of the three study intersections. The trip distribution assumptions were unchanged.
- The trip assignment for pending and approved project 4 was obtained from the TIA for Liberty Hills Subdivision, prepared by JLB Traffic Engineering, dated January 2018.
    - The trip assignment through-volumes from W. Bardsley Avenue/S. Pratt Street were assumed for Intersection 3 (W. Bardsley Avenue/S. E Street).
    - The trip distribution assumptions were unchanged.
- The trip assignment for project 3 (Paige Industrial Warehouse) was developed using engineering judgement and knowledge of the site. There was no TIA prepared for this project.
    - 50 percent of the total trips for project 3 (see Table 4-1) were distributed onto W. Paige Avenue. The remaining 50 percent of trips were assumed to use S. I Street.
    - The trip distribution assumptions onto Intersection 1 (W. Paige Avenue/S. Pratt Street) and Intersection 2 (W. Paige Avenue/S. K Street) were based on information received from the TCAG travel demand model. Those assumptions are given below, similar for the AM and PM peak hours:
        - 85% east on W. Paige Avenue to S. I Street
        - 75% east on W. Paige Avenue to S. K Street
        - 25% north on S. K Street
        - 45% east on W. Paige Avenue
        - 5% south on S. K Street

- 15% west on W. Paige Avenue to S. Pratt Street
- 5% north on S. Pratt Street
- 5% south on S. Pratt Street
- 5% west on W. Paige Avenue

Figure 4-1 shows the trip assignment for the pending and approved projects. These volumes were then added to the 2-year, 2% projected growth Existing Conditions traffic volumes given in Figure 3-2 to develop the Opening Year (2027) Without Project Peak Hour Traffic Volumes as shown in Figure 4-2.



NORTH

FIGURE 4-1: Pending and Approved Project Trip Assignment

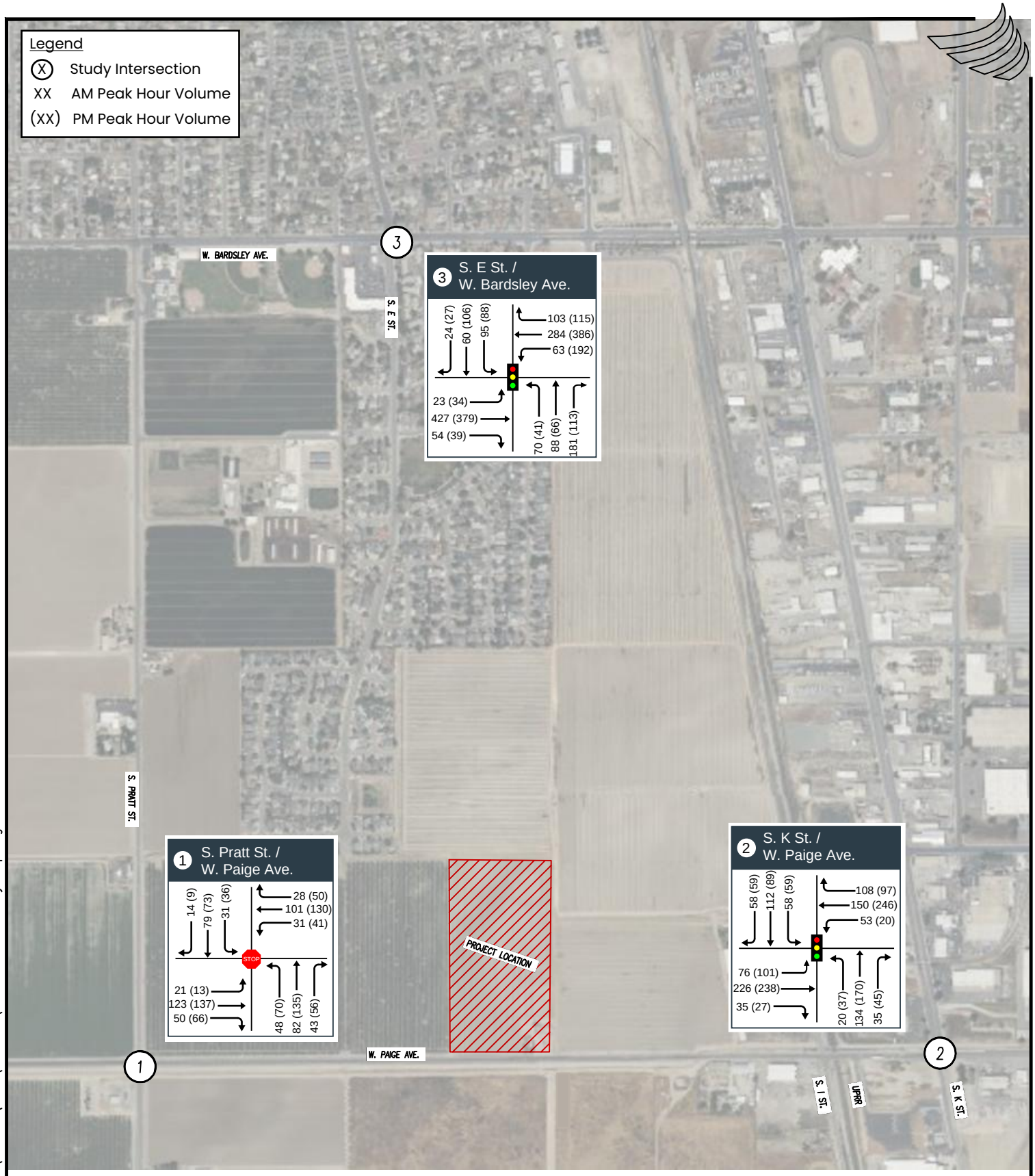
Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Near Term Map.dwg



\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg

NORTH

FIGURE 4-2: Opening Year (2027) Without Project Peak Hour Traffic Volumes

Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

4.3 Intersection Level of Service Analysis – Opening Year (2027) Without Project Conditions

Results of the intersection level of service analysis for Opening Year (2027) Without Project Conditions are summarized in Table 4-2 below. The results for the existing conditions are included for comparison purposes. LOS calculation sheets for Opening Year (2027) Without Project Conditions are included in Appendix F.

Table 4-2: Level of Service Summary – Opening Year (2027) Without Project Conditions

#	Intersection	Control	Peak Hour[1]	Existing Conditions		2027 Without Project		Change in Delay
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	W. Paige Ave./S. Pratt St.	AWSC	AM	9.2	A	9.9	A	0.7
			PM	11.4	B	13.1	B	1.7
2	W. Paige Ave./S. K St.	Signalized	AM	20.5	C	22.6	C	2.1
			PM	20.5	C	27.7	C	7.2
3	W. Bardsley Ave./S. E St.	Signalized	AM	10.2	B	11.4	B	1.2
			PM	10.3	B	11.2	B	0.9

Notes:

1. AM – morning peak hour, PM – evening peak hour
2. Delay – Entire intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop-controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.
3. LOS – Level of Service. **Bold** indicates unacceptable Level of Service. **Red** indicates a significant impact.

Under this scenario, all intersections continue to operate at acceptable service levels (LOS D or better) during the AM and PM peak hour.

4.4 Roadway Segment Analysis – Opening Year (2027) Without Project Conditions

Results of the Average Daily Traffic (ADT) LOS segment analysis along Paige Avenue for Opening Year (2027) Without Project Conditions are shown in Table 4-3. The performance criteria for evaluating this roadway segment were estimated using the Federal Highway Administration's (FHWA) *Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System*, dated October 2017. Existing Conditions ADT volumes of the roadway segment were projected forward two years using a growth rate of 2% per year. This growth rate was based on City of

Tulare census data growth from the year 2010 to 2023. Then, the estimated total daily number of trips from pending and approved projects 1, 2, and 3 listed in Table 4-1 were added. The following assumptions were made, in accordance with the available TIA information from the adjacent projects.

- 50% of trips from project 1, Lekkerkerker Property (1,077 trips).
- 100% of trips from project 2, Valov Property (1,555 trips).
- 50% of trips from project 3, Paige Industrial Warehouse (876 trips).
- **Total daily added trips = 3,508.**

Table 4-3: Roadway Segment Summary – Opening Year (2027) Without Project Conditions

Street Segment	Segment Description	Roadway Class	Existing		Opening Year (2027) Without Project	
			ADT Volume	LOS[1]	ADT Volume	LOS[1]
Paige Avenue (between Pratt Street and I Street)	2 Lanes, Undivided	Major Arterial	4,343	B	8,026	B

Note:

1. LOS – Level of Service. **Bold** indicates unacceptable Level of Service.

Results of the analysis show that Paige Avenue between Pratt Street and I Street remains at LOS B when applying the average daily traffic of the applicable pending and approved projects.

4.5 Signal Warrant Analysis – Opening Year (2027) Without Project Conditions

The results of the peak hour warrant under Opening Year (2027) Without Project Conditions are summarized in Table 4-4 below. Signalization of an intersection may be appropriate if the intersection meets one or more of the nine signal warrants detailed in the CA MUTCD. Warrant 3, Peak Hour, was used here to indicate whether signalization may be appropriate, but even if the peak hour volume warrant is met, a more detailed signal warrant study is recommended before a traffic signal is installed.

Table 4-4: Warrant 3, Peak Hour – Opening Year (2027) Without Project Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
1	W. Paige Ave./S. Pratt St.	AWSC	No	No

The intersection does not meet Warrant 3 for either the AM or PM peak hour.

4.5 Queuing Analysis – Opening Year (2027) Without Project Conditions

The queuing analyses for Opening Year (2027) Without Project Conditions are summarized in Table 4-5 below.

Table 4-5: 95th Percentile Queues – Opening Year (2027) Without Project Conditions

#	Intersection	Lane Group	Storage Length (ft)	2027 Without Project Queue[1]	
				AM	PM
2	W. Paige Ave./S. K St.	NB Lt	150	28	43
		SB Lt	150	68	71
		EB Lt	120	89	**124**
		WB Lt	105	61	27
3	W. Bardsley Ave./S. E St.	NB Lt	135	31	24
		NB Rt	50	26	24
		SB Lt	135	40	43
		EB Lt	75	14	19
		WB Lt	75	37	**123**

Note:

1. Queue lengths denoted in **BOLD** indicate that the 95th percentile volume exceeds capacity and that the queue may be longer.

The EB left turn lane at Intersection 2 (W. Paige Avenue/S. K Street) is exceeded during the PM peak hour. The WB left turn storage lane at Intersection 3 (W. Bardsley Avenue/S. E Street) is exceeded during the PM peak hour.

5. Opening Year (2027) Plus Project Conditions

This section describes the impacts of the proposed Project on the existing transportation system in the immediate vicinity of the Project site. The Opening Year (2027) Plus Project Conditions takes the traffic volumes from Opening Year (2027) Without Project and adds the new traffic generated by the proposed Project.

Traffic generated from the proposed Project was determined and added to the roadway system based on the same process as described in Section 4:

- Trip Generation – the number of Project-only trips are estimated.
- Trip Distribution – the direction the trips travel to and from the Project site is estimated.
- Trip Assignment – the Project-only trips are assigned to intersection movements and street segments.

5.1 Project Trip Generation

Data provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*, was used to estimate the number of trips anticipated by the proposed Project. Trip generation estimates for the Project are shown in Table 5-1 and are based on the number of units of residential housing planned in the proposed project.

As shown in Table 5-1, the proposed Project is expected to generate 1193 daily trips, including 92 AM peak hour trips (24 inbound, 68 outbound) and 123 PM peak hour trips, (79 inbound, 44 outbound).

Table 5-1: Project Trip Generation Estimate

Land Use	Units	Daily		A.M. Peak Hour					P.M. Peak Hour				
		Rate	Total	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Single-Family Detached Housing (210)	120	9.43	1193	0.70	25:75	22	66	88	0.94	63:37	74	44	118

Reference: *Trip Generation Manual, 11th Edition*, Institute of Transportation Engineers. Rates shown are in trips per dwelling unit.

5.2 Project Trip Distribution and Assignment

Trip distribution is a process that determines the proportion of vehicles that are expected to travel between the Project site and various destinations outside the

Project study area and determines the various routes that vehicles would likely take from the Project site to each destination using the calculated trip distribution. The regional distribution of Project trips was estimated by performing a select zone analysis using an appropriate travel model. The Tulare County Association of Governments (TGAG) maintains an activity-based model for Tulare County, including City of Tulare. TCAG was contacted regarding this analysis. Trip distribution assumptions for the proposed Project were developed based on existing travel patterns, knowledge of the study area, and consultation with City staff and the TCAG travel demand model.

The Project trips shown in Table 5-1 were distributed on the nearby roadway network. See Figure 5-1 for the Project trip distribution percentages that were developed for the project from the TCAG travel demand model. The Project's trip assignment volumes are shown on Figure 5-2. The pending and approved project trip assignment volumes (Figure 4-1) plus the Project trip assignment volumes (Figure 5-2) were then added to the 2-year, 2% projected growth Existing Conditions traffic volumes to develop the Opening Year (2027) Plus Project Peak Hour Traffic Volumes as shown in Figure 5-3.

5.3 Intersection Level of Service Analysis – Opening Year (2027) Plus Project Conditions

Results of the intersection level of service analysis for Opening Year (2027) Plus Project Conditions are summarized in Table 5-2 below. The results for Opening Year (2027) Without Project Conditions are included for comparison purposes. LOS calculation sheets for Opening Year (2027) Plus Project Conditions are included in Appendix G.

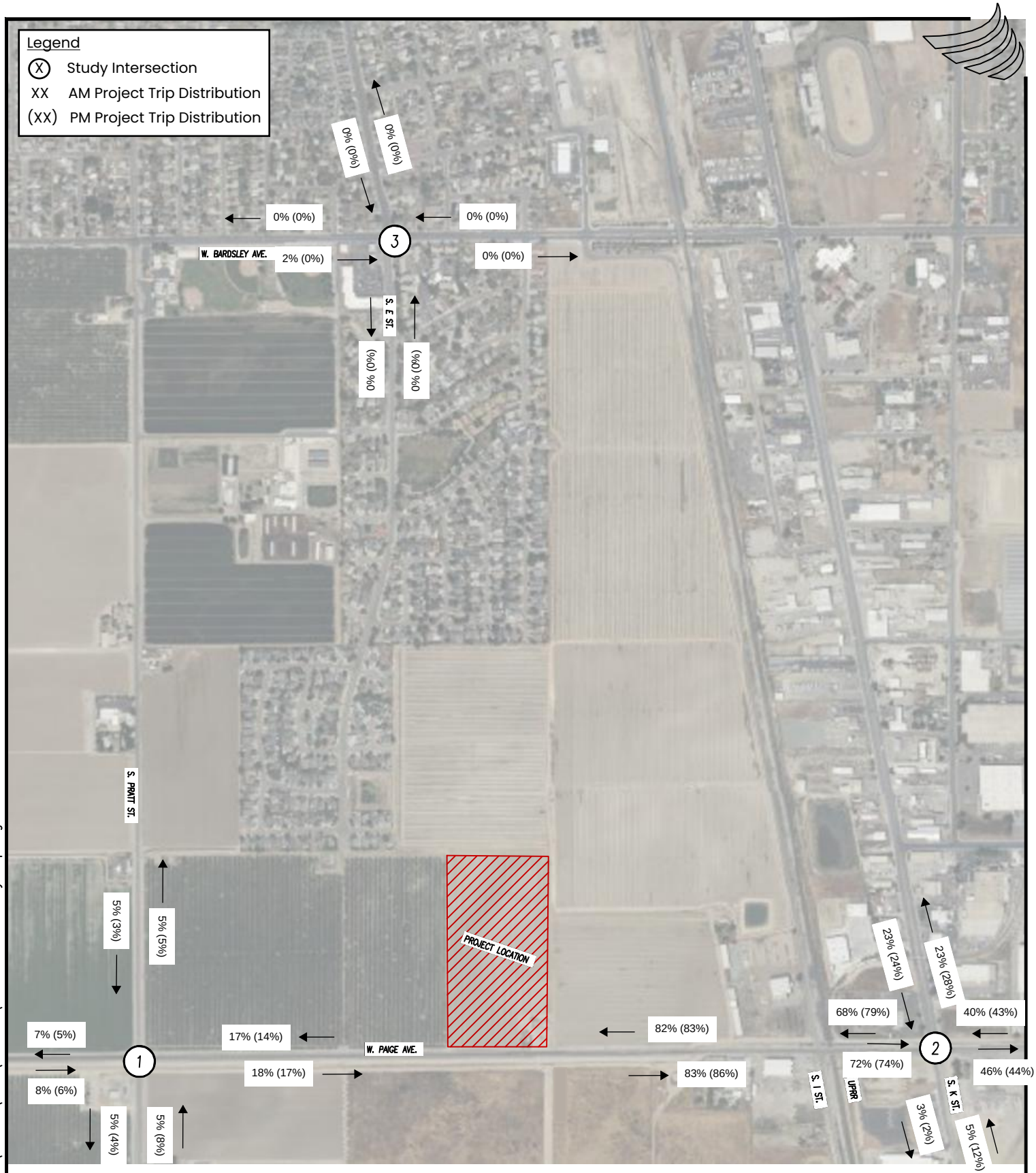


FIGURE 5-1: Project Trip Distribution

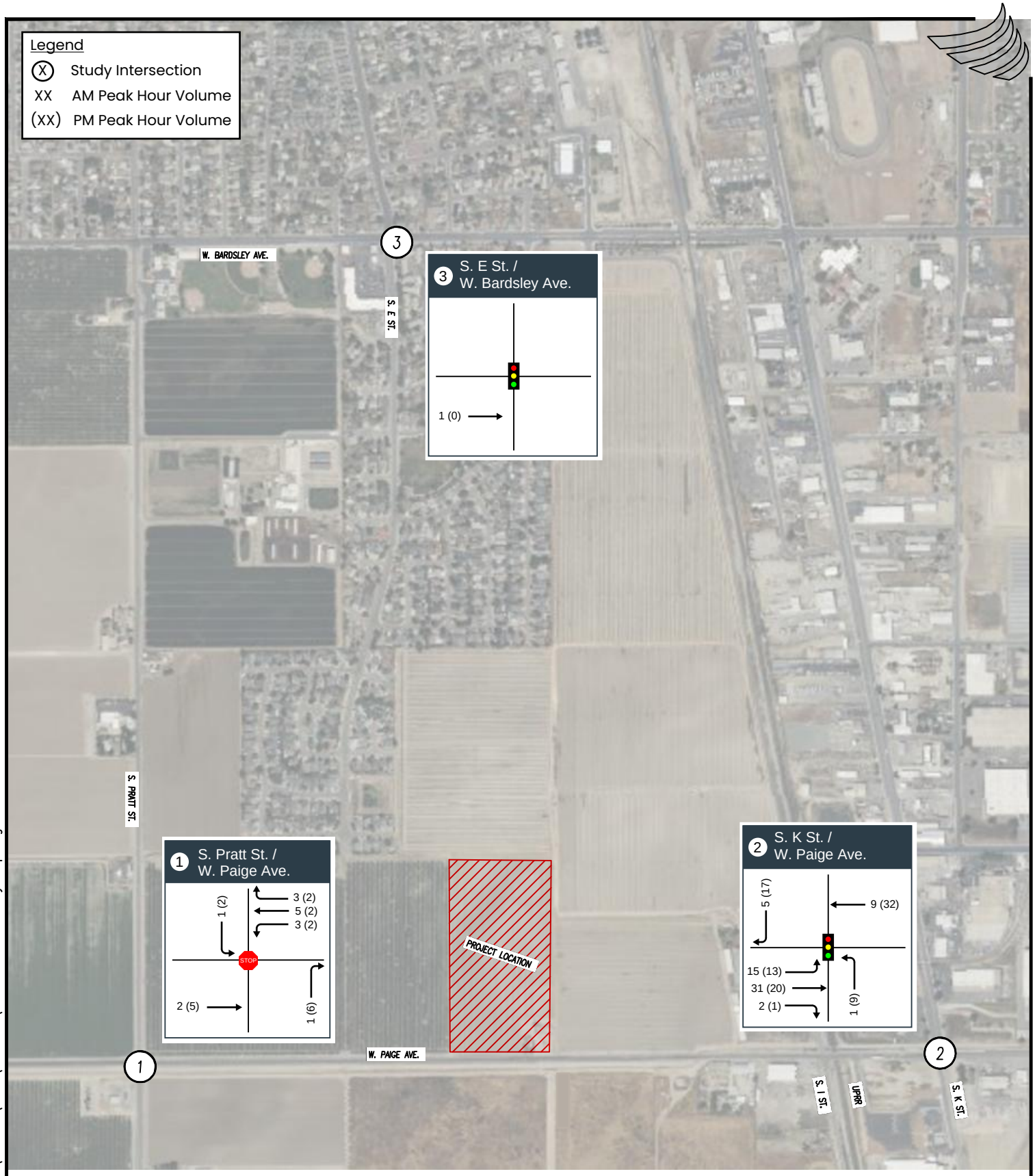
Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg



NORTH

FIGURE 5-2: Project Trip Assignment

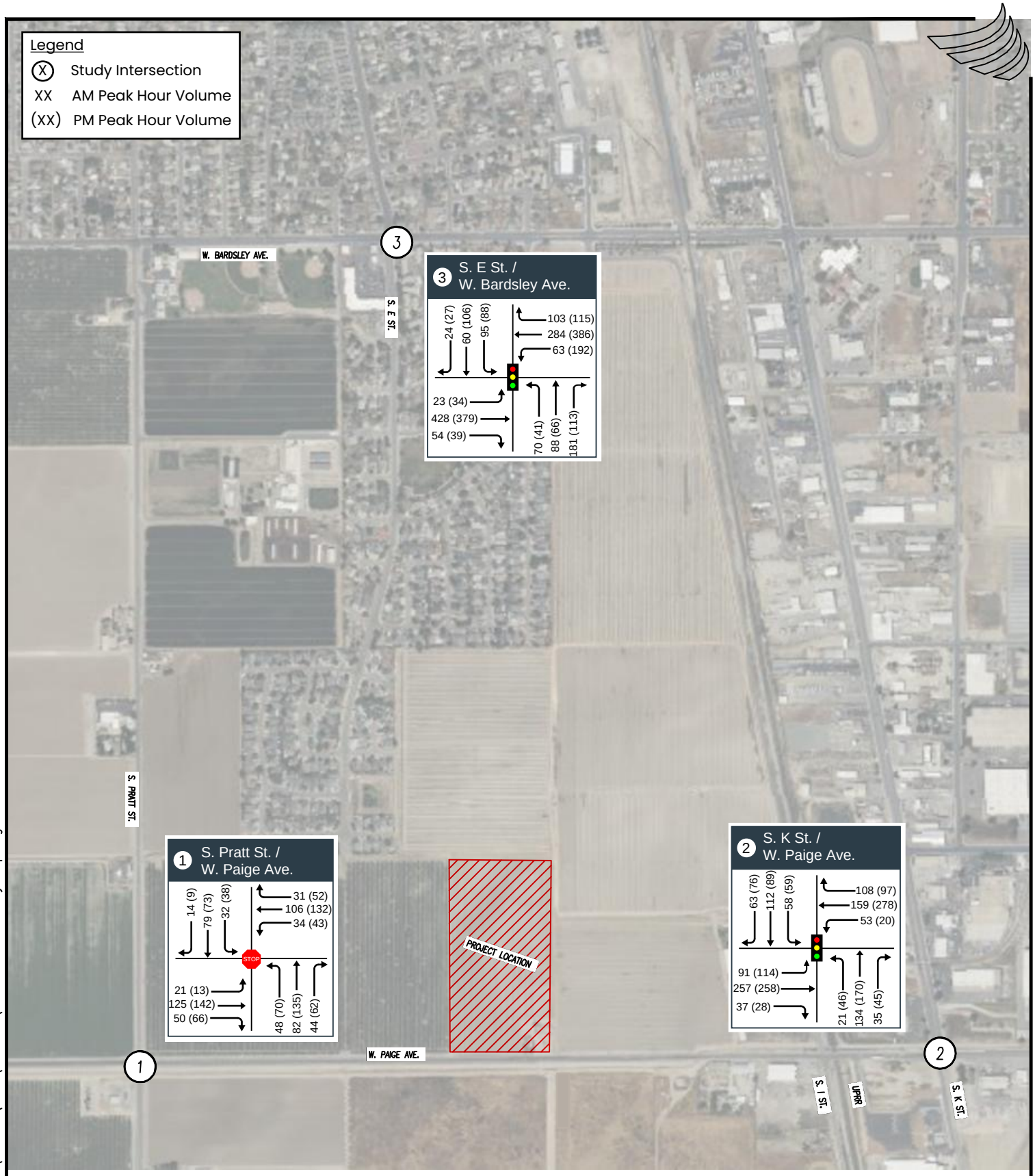
Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg



\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg

NORTH

FIGURE 5-3: Opening Year (2027) Plus Project Peak Hour Traffic Volumes

Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

Table 5-2: Level of Service Summary – Opening Year (2027) Plus Project Conditions

#	Intersection	Control	Peak Hour[1]	2027 Without Project Conditions		2027 Plus Project Conditions		Change in Delay
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	W. Paige Ave./S. Pratt St.	AWSC	AM	9.9	A	10.0	A	0.1
			PM	13.1	B	13.5	B	0.4
2	W. Paige Ave./S. K St.	Signalized	AM	22.6	C	24.7	C	2.1
			PM	27.7	C	30.0	C	2.3
3	W. Bardsley Ave./S. E St.	Signalized	AM	11.4	B	11.5	B	0.1
			PM	11.2	B	11.2	B	0.0

Notes:

1. AM – morning peak hour, PM – evening peak hour
2. Delay – Entire intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop-controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.
3. LOS – Level of Service. **Bold** indicates unacceptable Level of Service. **Red** indicates a significant impact.

Under this scenario, all intersections continue to operate at acceptable service levels (LOS D or better) during the AM and PM peak hour.

5.4 Roadway Segment Analysis – Opening Year (2027) Plus Project Conditions

Results of the Average Daily Traffic (ADT) LOS segment analysis along Paige Avenue for Opening Year (2027) Plus Project conditions are shown in Table 5-3. The performance criteria for evaluating this roadway segment was estimated using the Federal Highway Administration's (FHWA) *Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System*, dated October 2017. Existing Conditions ADT volumes of the roadway segment were projected forward two years using a growth rate of 2% per year. This growth rate was based on City of Tulare census data growth from the year 2010 to 2023. Then the estimated applicable total daily number of trips from pending and approved projects 1, 2, and 3 listed in Table 4-1 were added (3,508 daily trips) plus the Project trips from Table 5-1.

Table 5-3: Roadway Segment Summary – Opening Year (2027) Plus Project Conditions

Street Segment	Segment Description	Roadway Class	2027 Without Project		2027 Plus Project	
			ADT Volume	LOS[1]	ADT Volume	LOS[1]
Paige Avenue (between Pratt Street and I Street)	2 Lanes, Undivided	Major Arterial	8,026	B	9,219	C

Note:

1. LOS – Level of Service. **Bold** indicates unacceptable Level of Service.

Results of the analysis show that Paige Avenue between Pratt Street and I Street reaches LOS C with the addition of Project trips.

5.5 Signal Warrant Analysis – Opening Year (2027) Plus Project Conditions

The results of the peak hour warrant under Opening Year (2027) Plus Project Conditions are summarized in Table 5-4 below. Signalization of an intersection may be appropriate if the intersection meets one or more of the nine signal warrants detailed in the CA MUTCD. Warrant 3, Peak Hour, was used here to indicate whether signalization may be appropriate, but even if the peak hour volume warrant is met, a more detailed signal warrant study is recommended before a traffic signal is installed.

Table 5-4: Warrant 3, Peak Hour Signal Warrant Results – Opening Year (2027) Plus Project Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
1	W. Paige Ave./S. Pratt St.	AWSC	No	No

The intersection does not meet Warrant 3 for either the AM or PM peak hour.

5.6 Queuing Analysis – Opening Year (2027) Plus Project Conditions

The queuing analyses for Opening Year (2027) Plus Project Conditions are summarized in Table 5-5 below.

5.6 Queuing Analysis – Opening Year (2027) Plus Project Conditions

The queuing analyses for Opening Year (2027) Plus Project Conditions are summarized in Table 5-5 below.

Table 5-5: 95th Percentile Queues – Opening Year (2027) Plus Project Conditions

#	Intersection	Lane Group	Storage Length (ft)	Existing Queue[1]	
				AM	PM
2	W. Paige Ave./S. K St.	NB Lt	150	29	55
		SB Lt	150	68	77
		EB Lt	120	109	**131**
		WB Lt	105	61	30
3	W. Bardsley Ave./S. E St.	NB Lt	135	31	24
		NB Rt	50	26	24
		SB Lt	135	40	43
		EB Lt	75	14	19
		WB Lt	75	37	**123**

Note:

1. Queue lengths denoted in **BOLD** indicate that the 95th percentile volume exceeds capacity and that the queue may be longer.

The EB left turn lane at Intersection 2 (W. Paige Avenue/S. K Street) is exceeded during the PM peak hour. The WB left turn storage lane at Intersection 3 (W. Bardsley Avenue/S. E Street) is exceeded during the PM peak hour.

6. 10-Year Horizon (Year 2035) Without Project Conditions

This section presents the results of the level of service calculations under 10-Year Horizon (Year 2035) Without Project Conditions. Existing Conditions volumes at the study intersections were projected forward 10 years using a growth rate of 2% per year and then the pending and approved projects trip assignment was added. The growth rate was based on City of Tulare census data growth from the year 2010 to 2023. Figure 6-1 shows the projected turning movement volumes at the study intersections for 10-Year Horizon (Year 2035) Without Project Conditions.

6.1 Intersection Level of Service Analysis – 10-Year Horizon (Year 2035) Without Project Conditions

The intersection LOS analysis results for 10-Year Horizon (Year 2035) Without Project Conditions are summarized in Table 6-1. LOS calculations sheets for 10-Year Horizon (Year 2035) Without Project Conditions are included in Appendix H.

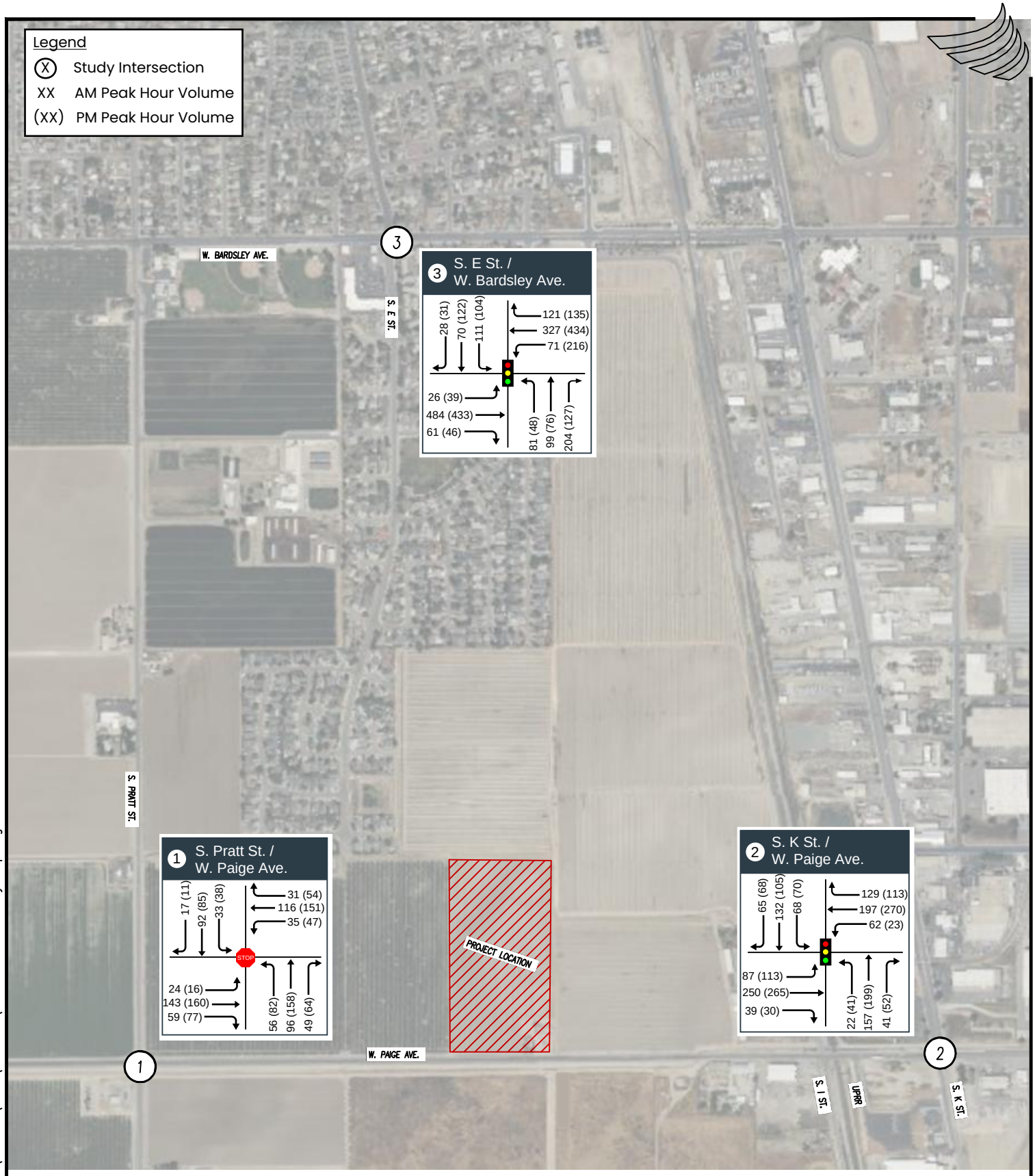
Table 6-1: Level of Service Summary – 10-Year Horizon (Year 2035) Without Project Conditions

#	Intersection	Control	Peak Hour[1]	2035 Without Project Conditions	
				Delay[2]	LOS[3]
1	W. Paige Ave./S. Pratt St.	AWSC	AM	10.9	B
			PM	13.8	B
2	W. Paige Ave./S. K St.	Signalized	AM	27.0	C
			PM	30.1	C
3	W. Bardsley Ave./S. E St.	Signalized	AM	11.5	B
			PM	12.0	B

Notes:

1. AM – morning peak hour, PM – evening peak hour
2. Delay – Entire intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop-controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.
3. LOS – Level of Service. **Bold** indicates unacceptable Level of Service. **Red** indicates a significant impact.

Under this scenario, all intersections continue to operate at acceptable service levels (LOS D or better) during the AM and PM peak hour.



NORTH

FIGURE 6-1: 10-Year Horizon (Year 2035) Without Project Peak Hour Traffic Volumes

Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg

6.2 Roadway Segment Analysis – 10-Year Horizon (Year 2035) Without Project Conditions

Results of the Average Daily Traffic (ADT) LOS segment analysis along Paige Avenue for 10-Year Horizon (Year 2035) Without Project Conditions are shown in Table 6-2. The performance criteria for evaluating this roadway segment was estimated using the Federal Highway Administration's (FHWA) *Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System*, dated October 2017. Existing Conditions ADT volumes of the roadway segment were projected forward 10 years using a growth rate of 2% per year. This growth rate was based on City of Tulare census data growth from the year 2010 to 2023. Then the estimated applicable total daily number of applicable trips from pending and approved projects 1, 2, and 3 listed in Table 4-1 were added (assumed 3,508 daily trips).

Table 6-2: Roadway Segment Summary – 10-Year Horizon (Year 2035) Without Project Conditions

Street Segment	Segment Description	Roadway Class	Existing		2035 Without Project	
			ADT Volume	LOS[1]	ADT Volume	LOS[1]
Paige Avenue (between Pratt Street and I Street)	2 Lanes, Undivided	Major Arterial	4,343	B	8,802	C

Note:
1. LOS – Level of Service. **Bold** indicates unacceptable Level of Service.

Results of the analysis show that Paige Avenue between Pratt Street and I Street reaches LOS C with the addition of pending and approved projects.

6.3 Signal Warrant Analysis – 10-Year Horizon (Year 2035) Without Project Conditions

The results of the peak hour warrant under 10-Year Horizon (Year 2035) Without Project Conditions are summarized in Table 6-3 below.

Table 6-3: Warrant 3, Peak Hour Signal Warrant Results – 10-Year (Year 2035) Without Project Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
3	W. Paige Ave./S. Pratt St.	AWSC	No	No

The intersection does not meet Warrant 3 for either the AM or PM peak hour.

6.4 Queuing Analysis – 10-Year Horizon (Year 2035) Without Project Conditions

The queuing analyses for 10-Year Horizon (Year 2035) Without Project Conditions are summarized in Table 6-4 below.

Table 6-4: 95th Percentile Queues – 10-Year (Year 2035) Without Project Conditions

#	Intersection	Lane Group	Storage Length (ft)	2035 Without Project Queue[1]	
				AM	PM
2	W. Paige Ave./S. K St.	NB Lt	150	30	49
		SB Lt	150	83	92
		EB Lt	120	105	**129**
		WB Lt	105	75	33
3	W. Bardsley Ave./S. E St.	NB Lt	135	41	34
		NB Rt	50	33	31
		SB Lt	135	55	64
		EB Lt	75	15	21
		WB Lt	75	41	**159**

Note:

1. Queue lengths denoted in **BOLD** indicate that the 95th percentile volume exceeds capacity and that the queue may be longer.

The EB left turn lane at Intersection 2 (W. Paige Avenue/S. K Street) is exceeded during the PM peak hour. The WB left turn storage lane at Intersection 3 (W. Bardsley Avenue/S. E Street) is exceeded during the PM peak hour.

7. 10-Year Horizon (Year 2035) Plus Project Conditions

This section presents the results of the level of service calculations under 10-Year Horizon (Year 2035) Plus Project Conditions. The Project trip assignment volumes were added to the 10-Year Horizon (Year 2035) Without Project Conditions volumes to generate the 10-Year Horizon (Year 2035) Plus Project Conditions peak hour volumes, see Figure 7-1.

7.1 Intersection Level of Service Analysis – 10-Year Horizon (Year 2035) Plus Project Conditions

The intersection LOS analysis results for 10-Year Horizon (Year 2035) Plus Project Conditions are summarized in Table 7-1. LOS calculations sheets for 10-Year Horizon (Year 2035) Plus Project Conditions are included in Appendix I.

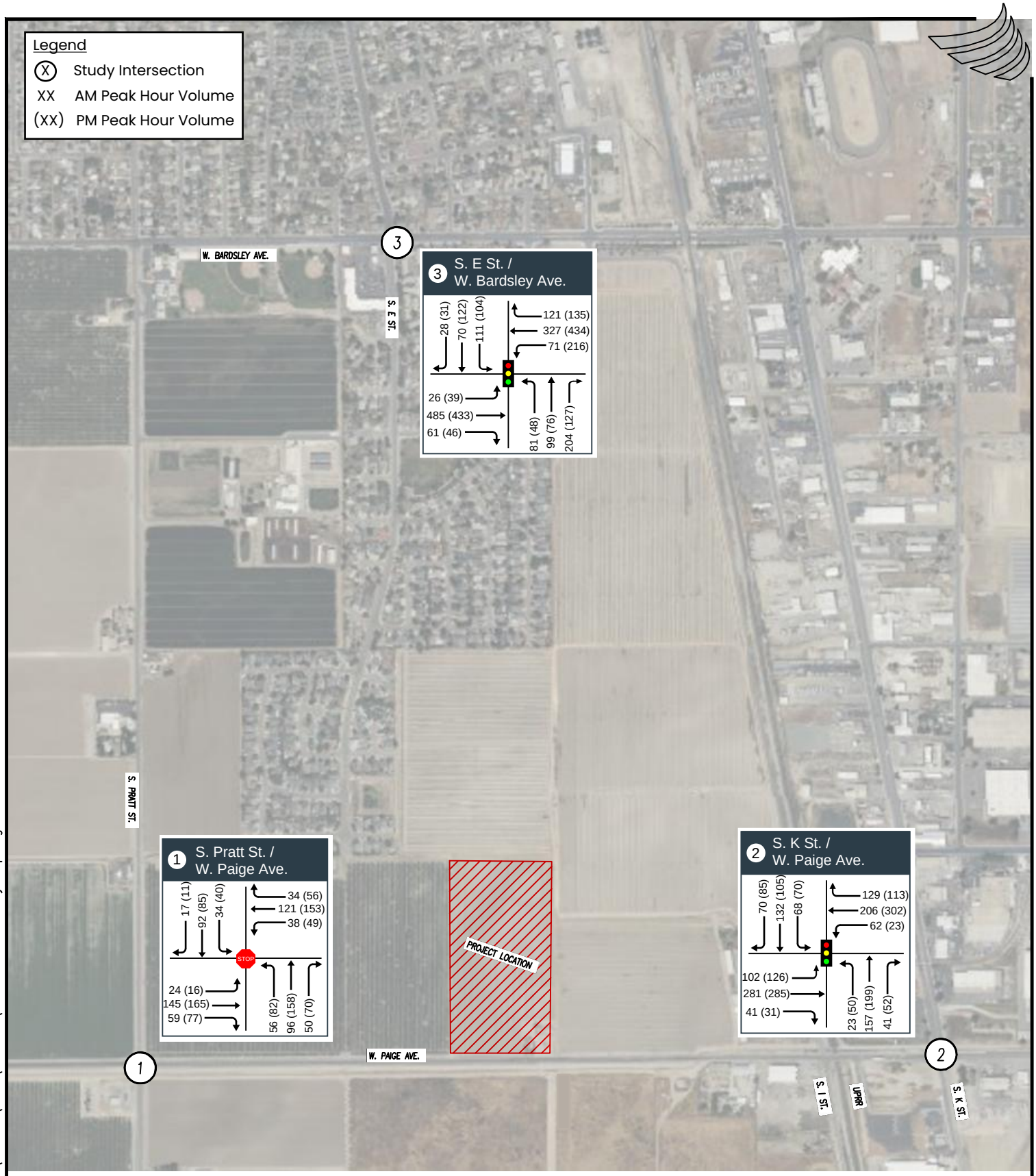
Table 7-1: Level of Service Summary - 10-Year (2035) Plus Project Conditions

#	Intersection	Control	Peak Hour[1]	2035 Without Project Conditions		2035 Plus Project Conditions		Change In Delay
				Delay[2]	LOS[3]	Delay[2]	LOS[3]	
1	W. Paige Ave./S. Pratt St.	AWSC	AM	10.9	B	11.0	B	0.1
			PM	13.8	B	17.6	C	3.8
2	W. Paige Ave./S. K St.	Signalized	AM	27.0	C	28.9	C	1.9
			PM	30.1	C	33.1	C	3.0
3	W. Bardsley Ave./S. E St.	Signalized	AM	11.5	B	12.1	B	0.6
			PM	12.0	B	12.0	B	0.0

Notes:

1. AM – morning peak hour, PM – evening peak hour
2. Delay – Entire intersection weighted average control delay expressed in seconds per vehicle for signalized and all way stop-controlled intersections. Total control delay for the worst movement is presented for side-street stop-controlled intersections.
3. LOS – Level of Service. **Bold** indicates unacceptable Level of Service. **Red** indicates a significant impact.

Under this scenario, all intersections continue to operate at acceptable service levels (LOS D or better) during the AM and PM peak hour.



\\Server\projects\Projects\2024\240849\ACAD\EXHIBITS\240849_Site-Vicinity Map.dwg

NORTH

FIGURE 7-1: 10-Year Horizon (Year 2035) Plus Project Peak Hour Traffic Volumes
Fernandes Subdivision TIA
Tulare, CA

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

7.2 Roadway Segment Analysis – 10-Year Horizon (Year 2035) Plus Project Conditions

Results of the Average Daily Traffic (ADT) LOS segment analysis along Paige Avenue for 10-Year Horizon (Year 2035) Plus Project Conditions are shown in Table 7-2. The performance criteria for evaluating this roadway segment was estimated using the Federal Highway Administration's (FHWA) *Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System*, dated October 2017. Existing Conditions ADT volumes of the roadway segment were projected forward 10 years using a growth rate of 2% per year. This growth rate was based on City of Tulare census data growth from the year 2010 to 2023. Then the estimated total daily number of applicable trips from pending and approved projects 1, 2, and 3 listed in Table 4-1 were added (assumed 3,508 daily trips) plus the Project trips from Table 5-1.

Table 7-2: Roadway Segment Summary – 10-Year (2035) Plus Project Conditions

Street Segment	Segment Description	Roadway Class	2035 Without Project		2035 Plus Project	
			ADT Volume	LOS[1]	ADT Volume	LOS[1]
Paige Avenue (between Pratt Street and I Street)	2 Lanes, Undivided	Major Arterial	8,802	C	9,995	D

Note:

1. LOS – Level of Service. **Bold** indicates unacceptable Level of Service.

Results of the analysis show that Paige Avenue between Pratt Street and I Street meets the City of Tulare's minimum acceptable level of service criteria (LOS D or better) for the 10-Year Horizon (Year 2035) Plus Project Conditions scenario.

7.3 Signal Warrant Analysis – 10-Year Horizon (Year 2035) Plus Project Conditions

The results of the peak hour warrant under 10-Year Horizon (Year 2035) Plus Project Conditions are summarized in Table 7-3 below.

Table 7-3: Warrant 3, Peak Hour Signal Warrant Results – 10-Year (2035) Plus Project Conditions

#	Intersection	Control	Meets AM Peak Hour?	Meets PM Peak Hour?
1	W. Paige Ave./S. Pratt St.	AWSC	No	No

The intersection does not meet Warrant 3 for either the AM or PM peak hour.

7.3 Queues Analysis – 10-Year Horizon (Year 2035) Plus Project Conditions

The queuing analyses under 10-Year Horizon (Year 2035) Plus Project Conditions are summarized in Table 7-4 below.

Table 7-4: 95th Percentile Queues - 10-Year (2035) Plus Project Conditions

#	Intersection	Lane Group	Storage Length (ft)	2035 Plus Project Queue[1]	
				AM	PM
2	W. Paige Ave./S. K St.	NB Lt	150	30	68
		SB Lt	150	83	98
		EB Lt	120	**124**	**151**
		WB Lt	105	75	35
3	W. Bardsley Ave./S. E St.	NB Lt	135	41	34
		NB Rt	50	38	31
		SB Lt	135	54	64
		EB Lt	75	16	21
		WB Lt	75	45	**159**

Note:

1. Queue lengths denoted in **BOLD** indicate that the 95th percentile volume exceeds capacity and that the queue may be longer.

The EB left turn lane at Intersection 2 (W. Paige Avenue/S. K Street) is exceeded during the AM and PM peak hours. The WB left turn storage lane at Intersection 3 (W. Bardsley Avenue/S. E Street) is exceeded during the PM peak hour.

8. VMT Analysis

A vehicle miles traveled (VMT) analysis was conducted to determine whether the Project would create a VMT impact. The analysis was based on information provided by the City of Tulare's VMT guidance memorandum dated June 26, 2020. The Project was screened out from requiring a VMT analysis due to the Project location within a low VMT area. The Project was determined to have a less than significant VMT analysis and no mitigation measures were required. Additional information on the VMT screening analysis is shown in Appendix J.

9. Conclusions and Recommendations

9.1 Analysis Summary

The summary of results of the TIA are as shown below.

Intersection Level of Service

The analysis presented in this report has identified that all three study intersections remain within the City's adopted level of service standard (LOS D or better) for all study scenarios.

Roadway Segment Analysis

The roadway segment analysis conducted for W. Paige Avenue between S. Pratt Street and S. I Street was found to remain within the City's adopted level of service standard (LOS D or better) for all study scenarios. This segment was identified by the City for analysis to evaluate the operability of W. Paige Avenue at the Union Pacific Railroad (UPRR) at-grade crossing, which is less than 50 feet east of the intersection with S. I Street. This indicates that congestion or excessive delay in the study area is expected to be minimal and is not expected to impact UPRR operations at the grade crossing. Although the level of service along W. Paige Avenue was found to remain within the City's adopted level of service standard for all study scenarios (LOS D or better), improvements to the grade crossing would be beneficial to residents and industrial/commercial tenants in the area. Suggested potential improvements are discussed in Section 9.2.

Signal Warrant Analysis

Intersection 1 was evaluated using Signal Warrant 3, Peak Hour, for each study scenario. Warrant 3 was not met in any study scenario. However, a more detailed study in the future may be pertinent to consider additional factors, including collision history, to determine further need for a traffic signal.

Queuing Analysis

The queuing analysis conducted for Intersection 2 (W. Paige Avenue/S. K Street) showed EB left turn storage length exceedance in the PM peak hour beginning the Opening Year (2027) Without Project Conditions scenario. This continued through the 10-Year Horizon (Year 2035) Plus Project Conditions scenario, in which the EB left turn lane storage length was also exceeded during the AM peak hour.

For Intersection 3 (W. Bardsley Avenue/S. E Street), the westbound left turn lane storage length began to exceed capacity during the PM peak hour beginning in the Opening Year (2027) Without Project Conditions scenario and continuing through the 10-Year Horizon (Year 2035) Plus Project Conditions scenario.

Potential mitigation measures are discussed in Section 9.2.

9.2 Recommended Improvements

Based on the analysis presented in this report, the following roadway improvements are recommended for consideration by the City of Tulare to accommodate traffic increases related to overall growth in the study area. The following improvements may be implemented to accommodate traffic increases in the study area.

Intersection Improvements

Recommended intersection improvements to Intersection 2 (W. Paige Avenue/S. K Street) include lengthening the storage length for the EB left turn lane from 120' to 175', see Table 9-1 below.

Table 9-1: Turn Lane Length Recommendations

#	Intersection	Lane Group	Storage Length (ft)	
			Existing	Recommended
2	W. Paige Ave./S. K St.	NB Lt	150	Unchanged
		SB Lt	150	Unchanged
		EB Lt	120	175
		WB Lt	105	Unchanged

It should be noted that a previous TIA for Lekkerkerker Property made the recommendation to lengthen the westbound left turn pocket at Intersection 3 (W. Bardsley Avenue/S. E Street) from 75 feet to 175 feet. This recommendation still stands but was not included in the fair share calculations for this Project, because the trip assignment for this Project to Intersection 3 (W. Bardsley Avenue/S. E Street) was essentially zero, based on information received from TCAG, see Figure 5-2.

W. Paige Avenue at the UPRR At-Grade Intersection Crossing

It is our recommendation that the City consider the following upgrades to the at-grade UPRR crossing with W. Paige Avenue in accordance with the *Union Pacific Public Project Manual*, latest edition, in cooperation with the UPRR Diagnostic Team and the California Manual on Uniform Traffic Control Devices (CA MUTCD), latest edition. These upgrades are recommended to improve the overall safety of the at-

grade intersection but have no bearing on the level of service. These recommended improvements are provided for information only for the City to consider as part of improving the overall safety of W. Paige Avenue.

1. Evaluate railroad preemption with adjacent signals.
2. Confirm that gate lengths are sufficient.
3. Evaluate for appropriate signage and pavement markings per the UPRR Diagnostic Team. This may include:
    - Do Not Stop on Tracks (R8-8) for westbound traffic approaching the intersection with S. I Street.
    - Verifying that existing Crossbuck (R15-1) signs are in good condition with appropriate retroreflectivity.
    - Adding the blue Emergency Notification Sign (ENS) (I-13) on all approaches.
    - Grade Crossing Advance Warning Signs (W10-1) for each approach on W. Paige Avenue
    - Grade Crossing Advance Warning Signs (W10-2) on the north and south legs of S. I Street.
    - Pavement markings in accordance with UPRR and CA MUTCD:
        i. Stop bars placed 8’ from gate.
        ii. Railroad Crossing Symbol per State Standard Plan A24B placed based on approach speed per the CA MUTCD.
        iii. 50 feet of no-passing-zone double yellow centerline striping from the Stop bar.

It is recommended that the applicant meet with the City of Tulare to determine whether any of the improvements described above would be appropriate for implementation as part of the Project and if there would be justification for the payment of proportionate share fees.

9.3 Project Requirements

Per the analysis completed as part of this TIA, the left turn lane storage capacity is exceeded for the EB approach for Intersection 2 (W. Paige Avenue/S. K Street), beginning the Opening Year (2027) Without Project Conditions scenario. The City should consider lengthening this left turn storage to 175’ to meet the queueing demand at that intersection.

Based on the data in this TIA, the Project has the following proportionate share percentage:

$$P_{AM} = T/(T^{35} - T^{E})*100\% = 63/(1312-851) = 13.7\%$$

- P = Project's Proportionate Share
- T = Project AM peak hour trips entering the intersection
- T^{35} = 2035 Plus Project AM peak hour trips entering the intersection
- T^{E} = Existing AM peak hour trips entering the intersection

$$P_{PM} = T/(T^{35} - T^{E})*100\% = 92/(1441-911) = 17.4\%$$

- P = Project's Proportionate Share
- T = Project PM peak hour trips entering the intersection
- T^{35} = 2035 Plus Project PM peak hour trips entering the intersection
- T^{E} = Existing PM peak hour trips entering the intersection

$$P_{AVERAGE} = (P_{AM} + P_{PM})/2 = 15.6\%$$

Appendix A
Level of Service Methodology

Level of Service Methodology

The description and procedures for calculating capacity and level of service is found in Transportation Research Board, *Highway Capacity Manual (HCM) 7th edition*. The HCM represents the latest research on capacity and quality of service for transportation facilities and is the basis of design for this TIA.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service (LOS) is a measure of the operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and driver comfort and convenience.

Six levels of service are defined, and letters designate each level, A through F, with A representing the best operating conditions and F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not a factor in establishing level of service.

The description of level of service for interrupted flow facilities are given in the table below. Interrupted flow facilities include signalized intersections and unsignalized intersections.

Level of Service	Description
A	Very low delay
B	Low delay
C	Acceptable delay
D	Tolerable delay
E	Limit of acceptable delay
F	Unacceptable delay

Reference: *Highway Capacity Manual, 7th Edition,* Transportation Research Board, 2024

LOS A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.

LOS B describes reasonably unimpeded operations. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.

LOS C describes stable operations, however, ability to maneuver and change lanes in midblock locations may be more restricted than LOS B. Longer queues, adverse signal coordination, or both may contribute to lower travel speeds.

LOS D borders on a range in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination thereof.

LOS E is characterized by significant delays and lower travel speeds. Such operations are caused by a combination of adverse signal progression, inappropriate signal timing, high volumes, extensive delays at critical intersections, or high signal density.

LOS F is characterized by urban street flow at extremely low speeds. Intersection congestion is likely critical at signalized locations, with high delays, high volumes, and extensive queuing.

Signalized Intersections

The capacity of a roadway is related primarily to the geometric characteristics of the facility, as well as the composition of the traffic stream of the facility. Geometrics are a fixed characteristic of a facility. At a signalized intersection, an additional element is introduced to the concept of capacity: time allocation. A traffic signal allocates time among conflicting traffic movements that are seeking use of the same physical space. The way in which time is allocated has a significant impact on the operation of the intersection and on the capacity of the intersection and its approaches.

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i.e., in the absence of traffic control, geometric delay, incidents, and any other vehicles. Specifically, level of service criteria for traffic signals are staged in terms of average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, cycle length, ratio of green time to cycle length, and the volume-to-capacity ratio for the lane group.

For each intersection analyzed, the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined at the intersection. A level of service designation is given to the control delay to better describe the level of operation. The description of levels of service for signalized intersections can be found below.

Level of Service	Description	Average Vehicle Delay (seconds)
A	Volume-to-capacity ratio is no greater than 1.0. Progression is exceptionally favorable, or the cycle length is very short.	<10
B	Volume-to-capacity ratio is no greater than 1.0. Progression is highly favorable, or the cycle length is very short.	>10-20
C	Volume-to-capacity ratio is no greater than 1.0. Progression is favorable, or the cycle length is moderate.	>20-35
D	Volume-to-capacity ratio is high but no greater than 1.0. Progression is ineffective or cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35-55
E	Volume-to-capacity ratio is high but no greater than 1.0. Progression is unfavorable and cycle length is long. Individual cycle failures are frequent.	>55-80
F	Volume-to-capacity ratio is greater than 1.0. Progression is very poor and cycle length is long. Most cycles fail to clear the queue.	>80

Reference: *Highway Capacity Manual, 7th Edition,* Transportation Research Board, 2024

Unsignalized Intersections

The current procedures for unsignalized intersections are laid out in the HCM. The current procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver comfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic, and incidents. Total delay is the

difference between the travel time actually experienced and the reference travel time that would result during base conditions, i.e., in the absence of traffic control, geometric delay, incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to stop or slow at the intersection.

The Transportation Research Board *Highway Capacity Manual, 7th Edition*, (HCM) defines level of service (LOS) as "a quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst".

Two-Way Stop Controlled Intersections

Two-way stop-controlled intersections (TWSC) in which stop signs are used to assign the right-of-way are the most prevalent type of intersection in the United States. At TWSC intersections, the stop-controlled approaches are referred to as minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS designation is given to the expected control delay for each minor movement. LOS is not defined for the intersection as a whole. Control delay is the increased time of travel for a vehicle approaching and passing through a stop-controlled intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection. A description of LOS for TWSC intersections are shown below.

Level of Service	Average Vehicle Delay (seconds)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Reference: *Highway Capacity Manual, 7th Edition,* Transportation Research Board, 2024

LOS ratings for stop sign-controlled intersections are based on the average control delay expressed in seconds per vehicle. At one- or two-way stop-controlled intersections, the control delay is calculated for each movement, not the intersection as a whole. For approaches consisting of a single lane, the control delay is computed as the average of all movements in that lane. The delay ranges for unsignalized intersections are lower than for signalized intersections because drivers expect less delay at stop-controlled intersections.

Each of the study intersections were analyzed using Synchro Version 12 software and HCM 7th edition methodology. The LOS assessment under all scenarios is based on current traffic controls unless otherwise noted.

This page intentionally left blank.

Appendix B

FHWA Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System

Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System

October 2017



U.S. Department of Transportation
Federal Highway Administration

Notice

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in this document.

The U.S. Government does not endorse products or manufacturers. Trademarks or manufacturers' names appear in this report only because they are considered essential to the objective of the document.

Quality Assurance Statement

The Federal Highway Administration (FHWA) provides high-quality information to serve Government, industry, and the public in a manner that promotes public understanding. Standards and policies are used to ensure and maximize the quality, objectivity, utility, and integrity of its information. FHWA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
PL-18-003		

4. Title and Subtitle	5. Report Date
Simplified Highway Capacity Calculation Method for the Highway Performance Monitoring System	October 15, 2017
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
Richard Margiotta and Scott Washburn	

9. Performing Organization Name And Address	10. Work Unit No. (TRAIS)
Cambridge Systematics, Inc. 4800 Hampden Lane, Suite 800 Bethesda, MD 20814	11. Contract or Grant No. DTFH61-13-D-00014

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
Federal Highway Administration Office of Policy and Governmental Affairs 1200 New Jersey Avenue, SE Washington, DC 20590	Final Report
	14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

The Federal Highway Administration's Highway Performance Monitoring System (HPMS) provides information on the extent, condition, performance, use, and operating characteristics of the Nation's highways. Each year State Transportation Agencies must submit HPMS data to the FHWA. The Sample Panel portion of HPMS provides detailed statistical data on a randomly selected sample of roadway sections on the State's public road system. One data item submitted for sample panels is capacity (Sample Panel Data Item 69). The HPMS Field Manual guidance for capacity is as follows: "The capacity of a roadway facility is the maximum reasonable hourly rate at which vehicles can be expected to transverse a point or a uniform section of lane or roadway during a given time period under prevailing road-way, traffic, and control conditions." Reasonable expectancy is that the stated capacity can be achieved repeatedly. The Highway Capacity Manual (HCM) provides procedures, formulas, graphics, and tables in assessing roadway capacity. This item should be estimated based on procedures consistent with the HCM.

The results of the project are the development of:
1. Capacity computation methods that use HPMS data items to the extent possible, and can be used to validate HPMS Sample Panel Item 69; and
2. Simplified Methodologies to Create Generalized Level of Service (LOS) Lookup Tables. Both of these results use the most recent HCM methodologies. Specifically, it was found that the procedures in National Cooperative Research Program Report 825 ("Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual") could be easily adapted to the types of data present in HPMS.

17. Key Words	18. Distribution Statement
Highway Capacity Manual; level of service; generalized service volumes; HPMS data	No restrictions

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	46	N/A

TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION 1

CHAPTER 2. DEVELOPMENT OF CAPACITY COMPUTATION METHODS 3

REVIEW HIGHWAY ECONOMIC REQUIREMENTS SYSTEM CAPACITY PROCEDURES FOR USE IN HIGHWAY PERFORMANCE MONITORING SYSTEM 3

Freeways 4

Multilane Highways 5

Signalized Highways 5

Two-Lane Highways with No Traffic Control 6

Stop-Controlled Highways 6

UPDATE CAPACITY PROCEDURES BASED ON NEW HIGHWAY CAPACITY MANUAL EDITION 7

CHAPTER 3. BACKGROUND DEVELOP SIMPLIFIED METHODOLOGIES TO CREATE GENERALIZED LEVEL OF SERVICE (LOS) LOOKUP TABLES 9

BACKGROUND 9

DEFAULT VALUES 10

RESULTS 10

APPENDIX A. GENERALIZED SERVICE VOLUME TABLES 23

LIST OF FIGURES

Figure 1. Flow chart. Overview of major task activities.....2
Figure 2. Equation. Capacity calculation for freeway capacity. 4
Figure 3. Equation. Calculation or free flow speed for freeways. 5
Figure 4. Equation. Calculation of capacity for multilane highways. 5
Figure 5. Equation. Calculation of capacity for signalized highways. 6
Figure 6. Equation. Calculation of capacity for stop-controlled highways. 7

LIST OF TABLES

Table 1. Highway performance monitoring system data items used in the highway economic requirements system capacity calculation procedures.....3
Table 2. Conflicting flow rates for two-way stop-controlled highways—vehicles per hour.....10
Table 3. Default values for level of service calculation.....11
Table 4. Level of service for 2014 highway performance monitoring system sample panel— rural sections 12
Table 5. Level of service for 2014 highway performance monitoring system sample panel—urban sections.....13
Table 6. Selected highway performance monitoring system freeway sections with level of service and service measures attached. 14
Table 7. Selected highway performance monitoring system multilane sections with level of service and service measures attached. 15
Table 8. Selected highway performance monitoring system rural two-lane sections with level of service and service measures attached. 16
Table 9. Selected highway performance monitoring system signalized sections with level of service and service measures attached.....18
Table 10. Selected highway performance monitoring system stop-controlled sections with level of service and service measures attached. 19
Table 11. Level of service ranges by highway type.....21
Table 12. Level of service ranges for signalized highways. 21
Table 13. Freeway generalized service volume table. 23
Table 14. Multilane highway generalized service volume table.....25
Table 15. Signalized highway generalized service volume table. 26
Table 16. Stop sign-controlled highways generalized service volume table. 33
Table 17. Rural two-lane highways generalized service volume table.....33

CHAPTER 1. INTRODUCTION

The Federal Highway Administration's (FHWA) Highway Performance Monitoring System (HPMS) provides information on the extent, condition, performance, use, and operating characteristics of the Nation's highways. Each year State Transportation Agencies (STA) must submit HPMS data to the FHWA. Certain data items, including length, lane-miles, and travel are required for all public roads that are eligible for Federal-aid highway funds. The data items reported for all public roads are known as full extent data items. In addition to full extent data items, there are data items that are reported on a partial extent basis, which are known as sample panel data items. The sample panel provides more detailed statistical data on a randomly selected sample of roadway sections in the State's public road system. One data item submitted for sample panels is capacity (Sample Panel Data Item 69). The HPMS Field Manual guidance for capacity is as follows: "The capacity of a roadway facility is the maximum reasonable hourly rate at which vehicles can be expected to transverse a point or a uniform section of lane or roadway during a given time period under prevailing roadway, traffic, and control conditions. Reasonable expectancy is that the stated capacity can be achieved repeatedly. The *Highway Capacity Manual (HCM)* provides procedures, formulas, graphics, and tables in assessing roadway capacity. This item should be estimated based on procedures consistent with the HCM. All urban and rural capacity for freeways and other multilane facilities is for the peak direction. If a rural facility has two or three lanes with one-way operation, it is considered to be a multilane facility for determining capacity. The capacity for rural facilities with two or three lanes and two-way operation is for both directions."

The objectives of the project are to develop:

1. Capacity computation methods that: 1) use HPMS data items to the extent possible, and 2) can be used to validate HPMS Sample Panel Item 69.
2. Simplified methodologies to create generalized level of service (LOS) lookup tables.
3. These two objectives were covered by tasks 2 and 3 and are presented as separate sections below (figure 1).

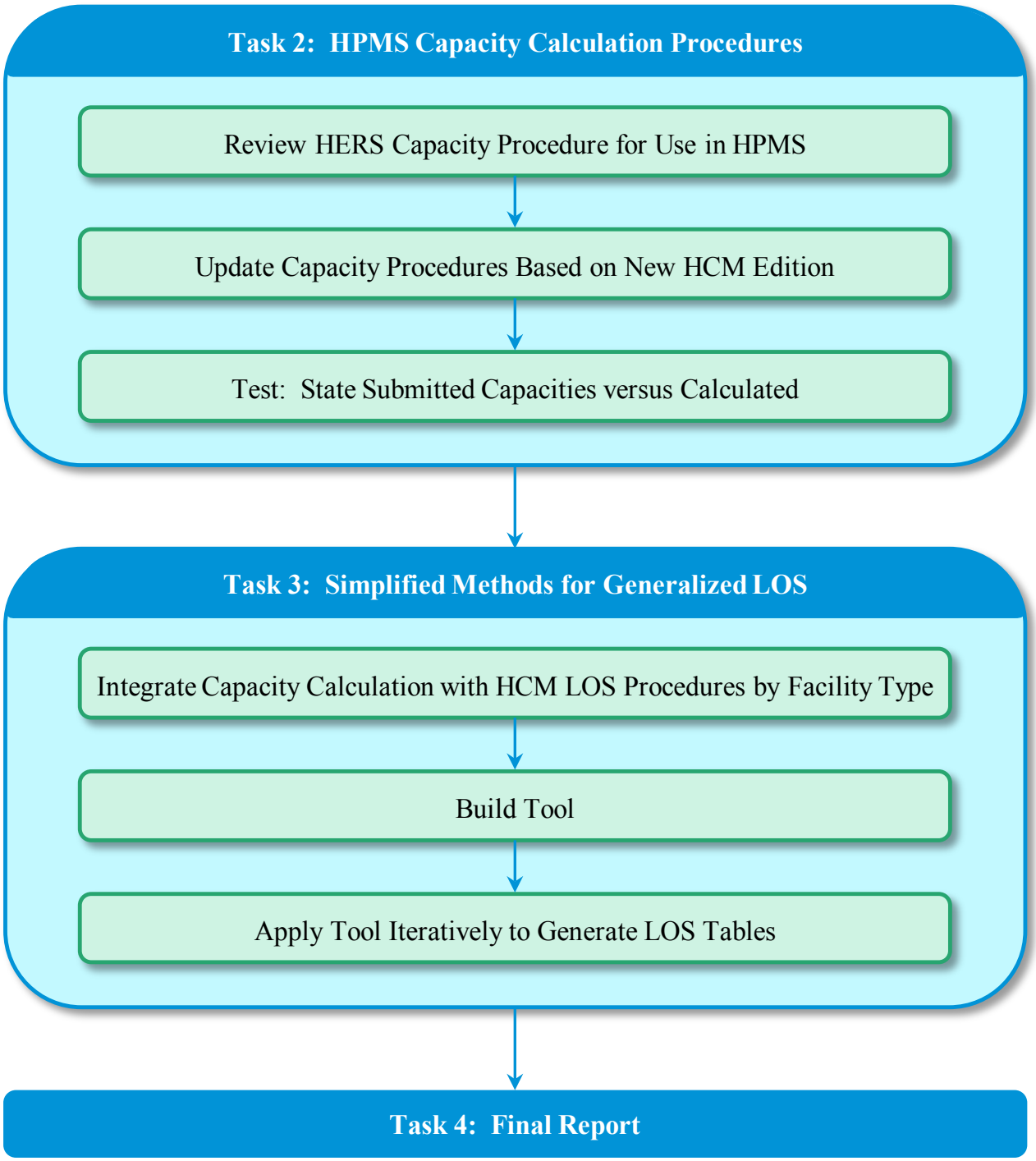


Figure 1. Flow chart. Overview of major task activities.

CHAPTER 2. DEVELOPMENT OF CAPACITY COMPUTATION METHODS

REVIEW HIGHWAY ECONOMIC REQUIREMENTS SYSTEM CAPACITY PROCEDURES FOR USE IN HIGHWAY PERFORMANCE MONITORING SYSTEM

The Highway Economic Requirements System (HERS) capacity procedures, completed in 2014, adapted the Highway Capacity Manual (HCM) 2010 capacity calculation methods.[1] It utilized Highway Performance Monitoring System (HPMS) data items to the maximum extent but also had to make many assumptions about default values. The HPMS data items that were used are shown in table 1. HCM capacity input data that had to set to default values are as follows:

- **Freeways—**ramp density, peak-hour factor, and driver population factor.
- **Multilane highways—**driveway density, peak-hour factor, and driver population factor.
- **Signals—**lane group assignments (based on presence of right- and left-turning lanes), grade, number of parking maneuvers per hour, bus blockage, area type, lane utilization, left- and right-turn lanes.
- **Rural two-lane highways—**driveway density and peak-hour factor.
- **Stop signs—**conflicting flow rates, base critical gap, follow-up times, and assignment of turning movements to lanes.

The project team compared the HERS procedures with National Cooperative Highway Research Program (NCHRP) Project 07-22, Planning and Preliminary Engineering Applications Guide to the HCM. The report has recently been published as NCHRP Report 825.[2] Its midlevel analysis methods for capacity are very similar to the HERS procedures which preceded it. Where the two methods differ, we developed a test procedure using 2014 HPMS data to compare the capacity values obtained with each method. The results of the comparison are as follows.

Table 1. Highway performance monitoring system data items used in the highway economic requirements system capacity calculation procedures.

	Facility Type				
HPMS Data Item	**Freeways**	**Multilane**	**Signals**	**Rural Two Lane**	**Stop Sign**
Lane Width	●	●	●	●	–
Right Shoulder Width	●	●	–	●	–
Left Shoulder Width	–	●	–	–	–
Through Lanes	●	●	–	–	●
Peak Lanes	–	–	–	–	●
% SU Trucks	●	●	●	●	●

[1] Task 6 Technical Memo: Procedures for Estimating Highway Capacity, May 2014.

[2] Dowling, Richard et al., *Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual*, NCHRP Report 825, 2016, http://www.trb.org/NCHRP/Blurbs/174958.aspx.

Table 1. Highway performance monitoring system data items used in the highway economic requirements system capacity calculation procedures (continuation).

HPMS Data Item	Facility Type				
	Freeways	**Multilane**	**Signals**	**Rural Two Lane**	**Stop Sign**
% Comb. Trucks	●	●	●	●	●
Median Type	–	–	–	–	–
No. Other Intersections	–	●	–	●	–
Right-Turn Lanes	–	–	●	–	●
Left-Turn Lanes	–	–	●	–	●
K-factor	–	–	●	●	●
D-factor	–	–	●	●	●
Percent Green Lime	–	–	●	–	–
Terrain	●	●	–	●	–
Functional Class	–	–	–	–	●
Speed Limit[a]	–	–	–	●	–

[a] Speed limit is generally used in the computation of service measures but except for rural two-lane highways is not used in capacity calculation.

Freeways

The HERS capacity procedure is very similar to that of NCHRP 825. The HERS procedure follows the HCM procedure verbatim, with adjustments for lane width, lateral clearance, interchange density, heavy trucks, and the peak-hour factor. The NCHRP method excludes the peak-hour factor. However, their formulations for the final capacity value are slightly different. When applied to 2014 Sample Panel data (21,940 freeway sections), HERS-developed capacity values are five percent lower than those of NCHRP 825. We consider this difference negligible, ***so we recommend the NCHRP 825 method for capacity and (Level of Service) LOS calculations.***

$$Capacity = \frac{\left(2{,}200 + 10 \times (\min(70, FFS) - 50)\right)}{1 + \%HV/100} \times Lanes$$

Where: FFS = free flow speed
%HV = percent of heavy vehicles (decimal), with heavy vehicles consisting of trucks with more than four tires, buses, and recreational vehicles Multilane Highways

Figure 2. Equation. Capacity calculation for freeway capacity.

$$FFS = 75.4 - f_{LW} - f_{RLC}$$

Where: f_{LW} = adjustment for lane width (HPMS data item 34)
f_{RLC} = adjustment for right side lateral clearance (HPMS data item 38)
Lanes = HPMS data item 10

Figure 3. Equation. Calculation or free flow speed for freeways.

The HERS method follows the HCM faithfully. NCHRP 825 recommends using the HCM method, so the two methods are the same. ***Therefore, the HCM method (which also is the HERS method) is recommended for capacity and LOS calculations.***

Multilane Highways

The HERS method follows the HCM faithfully. NCHRP 825 recommends using the HCM method, so the two methods are the same. ***Therefore, the HCM method (which is also the HERS method) is recommended for capacity and LOS calculations.***

$$Capacity = BaseCapacity \times f_{HV} \times Lanes$$

Where: $BaseCapacity = 1{,}000 + 20 \times FFS; for\ FFS \leq 60; 2{,}200\ otherwise$

f_{HV} = adjustment for heavy vehicles

$$f_{HV} = \frac{1}{(1 + PT \times (ET - 1))}$$

PT = HPMS data item 23 + HPMS data item 25
ET = 1.5 if HPMS data item 2 indicates a forma urban area; otherwise:
= 1.5 if HPMS data item 44 = 1
= 2.5 if HPMS data item 44 = 2
= 4.5 if HPMS data item 44 = 3
FFS = HPMS data item 14 + 5
Lanes = HPMS data item 10

Figure 4. Equation. Calculation of capacity for multilane highways.

Signalized Highways

Different philosophies are taken between the HERS method and NCHRP 825 method. In the HERS method, the capacity of the entire approach is calculated. This done because in HERS' speed estimation, turning movement volumes are not available in HPMS and the volume on the entire segment is used. In the NCHRP 825 method, only the through movement is used. (It offers a solution if only total volume is available: if exclusive left-turn and right lanes exist, deduct 10 percent for each.) To be comparable, we used the HERS method to analyze just the through

movement. In the HERS method, saturation flow rate is adjusted downward for lane width, heavy vehicles, parking, and the peak-hour factor. In the NCHRP 825 method, saturation flow rate is unadjusted. As a result, when applied to the Sample Panel data (26,504 signalized sections), the HERS method produces capacities that are 14 percent lower than NCHRP 825. The main problem with the HERS method is that the turning lane and their volume assignments are based on many assumptions. ***Because of its simplicity in dealing with turning movements, we recommend the NCHRP 825 method for capacity and LOS calculations.***

$$Capacity = \frac{g}{C} \times Lanes \times 1{,}900$$

Where: g/C = HPMS data item 30
Lanes = HPMS data item 10

Figure 5. Equation. Calculation of capacity for signalized highways.

Two-Lane Highways with No Traffic Control

Completely different approaches are taken by the two methods. The HERS method assumes that no traffic control is present while the NCHRP 825 method includes delay at intersections if they are present. The HERS procedure calculates two-way capacity while the NCHRP method uses one-way capacity and assigns a fixed value, either 1,450 or 1,490 vehicles per hour, but capacity is not used in the calculation of LOS—it is only used to create a v/c ratio for screening. Because of this difference, no tests were made. The HERS method is quite complex, accounting for grades, heavy vehicles, peak-hour factor, and percent no passing zones. The NCHRP 825 approach is simpler for capacity, but the calculation of speed and associated LOS basically follows the same method as for the capacity calculation in HERS. This is because capacity is "backcalculated" in the HERS method so that the HERS speed equations, which are based on the AADT-to-capacity ratio, can be used. In the NCHRP 825 method, capacity is largely irrelevant for two-lane highway LOS as it is based on average travel speed or percent of time following. ***Because it is more closely tied to HCM methods for the calculation of average travel speed (the basis for LOS), we recommend the NCHRP 825 method for capacity (one-way) and LOS calculations. That is, the one-way capacity is set at 1,490 vehicles per hour.***

Stop-Controlled Highways

Very different capacity calculations are used in the HCM 2010 depending on whether an intersection has two-way stop control or all-way stop control. Unfortunately, it is impossible to distinguish the two conditions with HPMS data. Both HERS and NCHRP 825 procedures are complex and highly dependent on turning movements on all the approaches. The HERS procedure is based on the HCM 2000 procedure for two-way stop-controlled intersections. It is data intensive and makes many assumptions about turning movements based on the presence of turning lanes. In contrast, the NCHRP 825 procedure uses the highly simplified adaptation of the HCM procedure for all-way stop control and a more complex procedure for two-way stop control which is based on the update to the HCM 2010. For this reason, we did not run any comparisons between the two methods. ***Because, the two-way stop control procedures in NCHRP 825 is***

based on the recently updated version of the HCM 2010, we recommend that the NCHRP 825 procedure be used for capacity and LOS calculations. In doing so, it is assumed that all stop control is two-way.

Capacity = 1,200 vehicles/hour; where HPMS data item 10 = 1

= 1,500 vehicles/hour otherwise

Figure 6. Equation. Calculation of capacity for stop-controlled highways.

UPDATE CAPACITY PROCEDURES BASED ON NEW HIGHWAY CAPACITY MANUAL EDITION

The Major Update to the HCM 2010 has been released. We reviewed the new procedures against the HERS capacity procedures and found no changes in the way capacity is calculated except for two-way stop-controlled intersections. The NCHRP 825 method is consistent with the new HCM as the researchers had access to the draft chapters. Therefore, the recommendations made above are not changed.

CHAPTER 3. BACKGROUND DEVELOP SIMPLIFIED METHODOLOGIES TO CREATE GENERALIZED LEVEL OF SERVICE (LOS) LOOKUP TABLES

BACKGROUND

This report documents the work performed on Task 3: Develop Simplified Methodologies to Create Generalized Level of Service (LOS) Lookup Tables. At the kickoff meeting it was decided that a stand-alone tool would be built that can interface directly with Highway Performance Monitoring System (HPMS) data. Based on the task 2 assessment, the **National Cooperative Highway Research Program** (NCHRP) Report 825 version of the Highway Capacity Manual (HCM) procedures for calculating LOS has been programmed into this tool.[3] The advantage is that all relevant HPMS data elements could be used. Also, updating would be much easier—all that is required is to change the procedure rather than regenerate the massive lookup table that otherwise would have been created. In addition to the LOS designation for an HPMS section, the actual value of the service measure on which LOS is based will also be reported. It also was decided that generalized service volume tables for each facility would be produced, accounting for all of the nondefault factors that are covered by the NCHRP 825 methodology.

The types of facilities that are included in the analysis are as follows. These follow the facility types covered by the HCM:

- Freeways.
- Multilane highways.
- Rural two-lane highways.
- Signalized highways.
- Stop-controlled highways.

HPMS sections can be grouped into these categories based on their data elements. A hierarchy is used to make these assignments:

- If functional system is one or two, and full access control exists, then the section is a freeway.
- If stop signs exist, then the section is stop controlled.
- If signals exist, then the section is signalized.
- If through lanes are greater than or equal to four, the section is multilane.
- If through lanes are equal to two or three and the urban code indicates rural, the section is rural two lane.

However, a significant number of HPMS Sample Panel sections (about 30,000) cannot be classified using the above scheme. These tend to be two-, three-lane urban highways with no traffic control device on the actual section. Level of Service was not calculated for these

[3] Dowling, Richard et al., *Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual*, NCHRP Report 825, 2016, http://www.trb.org/NCHRP/Blurbs/174958.aspx.

sections. One option for these sections is to treat them as signalized highways with 100 percent green time, but this results in a vast majority in LOS A, which is most likely misleading. Therefore, Level of Service was not calculated for these sections.

DEFAULT VALUES

For freeways and multilane highways, the NCHRP 825 method is followed directly and all of the required data elements are present in the HPMS Sample Panel. For signalized highways, the only data element not present in HPMS is cycle length. The following cycle lengths are assumed:

- **Principal arterials—**120 seconds.
- **Minor arterials—**90 seconds.
- **Collectors—**60 seconds.

For rural two-lane highways, LOS is based on average travel speed (ATS). A greatly simplified method was used for stop-controlled highways because so much of the required data on turning movements and cross-street volumes do not exist in HPMS:

- It is assumed that the section is two-way stop controlled.
- Conflicting flow rates are based on the values in table 2.

Table 2. Conflicting flow rates for two-way stop-controlled highways—vehicles per hour.

Land Use	Functional System		
	Principal Arterial	**Minor Arterial**	**Collector**
Rural	100	150	200
Urban	250	500	750

Preliminary analysis of the 2014 HPMS Sample Panel revealed that many data items used to undertake the LOS calculations were missing. As a result, the project team developed default values for the required data items. These were calculated as the median value for records where the data items were present (table 3).

RESULTS

Tables 4 and 5 present the results of applying the HCM-based LOS calculation procedures to the 2014 HPMS Sample Panel data. Tables 6 through 10 show the individual HPMS sections with LOS and service measure attached for each highway type; a separate spreadsheet contains the entire dataset. Tables 11 and 12 provide the LOS ranges for each highway type from the HCM.

Generalized service volume tables are provided in the appendix.

Table 3. Default values for level of service calculation.

HPMS Data Item	Freeways		Multilane			Rural Two Lane
	Urban	Rural	Urban	Rural	Signalized	
LANE_WIDTH	12	12	12	12	11	12
SHOULDER_WIDTH_R	10	10	10	10		5
AADT_SINGLE_UNIT	=AADT*0.034	=AADT*0.043	=AADT*0.038	=AADT*0.043		=AADT*0.051
AADT_COMBINATION	=AADT*0.060	=AADT*0.193	=AADT*0.035	=AADT*0.082		=AADT*0.048
K_FACTOR	10	9	10	10	10	11
D_FACTOR	55	55	59	57	57	57
MEDIAN_TYPE			3	2		
SPEED_LIMIT			55	65	40	55
PCT_GREEN_TIME					50	
SIGNAL_TYPE					2	
TERRAIN_TYPE	1	2	1	2		2

Table 4. Level of service for 2014 highway performance monitoring system sample panel—rural sections.

Area Type	Highway Type	Level of Service	No. Sections	Mileage	% of Mileage
Rural	Freeway	A	3,561	18,209	56.3%
Rural	Freeway	B	2,148	8,711	26.9%
Rural	Freeway	C	687	3,402	10.5%
Rural	Freeway	D	270	1,407	4.4%
Rural	Freeway	E	78	343	1.1%
Rural	Freeway	F	88	265	0.8%
Rural	**Freeway**	**A-F Total**	**6,832**	**32,336**	**100.0%**
Rural	Multilane	A	2,624	30,015	89.7%
Rural	Multilane	B	478	2,647	7.9%
Rural	Multilane	C	131	616	1.8%
Rural	Multilane	D	43	91	0.3%
Rural	Multilane	E	13	42	0.1%
Rural	Multilane	F	12	47	0.1%
Rural	**Multilane**	**A-F Total**	**3,301**	**33,459**	**100.0%**
Rural	Rural Two Lane	A	9,559	374,043	77.9%
Rural	Rural Two Lane	B	1,679	33,692	7.0%
Rural	Rural Two Lane	C	1,323	28,683	6.0%
Rural	Rural Two Lane	D	888	18,033	3.8%
Rural	Rural Two Lane	E	1,808	23,353	4.9%
Rural	Rural Two Lane	F	182	2,333	0.5%
Rural	**Rural Two Lane**	**A-F Total**	**15,439**	**480,137**	**100.0%**
Rural	Signalized	A	442	6,921	87.7%
Rural	Signalized	B	101	566	7.2%
Rural	Signalized	C	81	277	3.5%
Rural	Signalized	D	23	30	0.4%
Rural	Signalized	E	15	24	0.3%
Rural	Signalized	F	40	76	1.0%
Rural	**Signalized**	**A-F Total**	**702**	**7,894**	**100.0%**
Rural	Stop Controlled	A	100	1,334	1.0%
Rural	Stop Controlled	B	2,022	127,671	97.6%
Rural	Stop Controlled	C	62	1,359	1.0%
Rural	Stop Controlled	D	10	138	0.1%
Rural	Stop Controlled	E	6	177	0.1%
Rural	Stop Controlled	F	15	74	0.1%
Rural	**Stop Controlled**	**A-F Total**	**2,215**	**130,754**	**100.0%**

Note: Mileage is the expanded mileage—section length times the HPMS expansion factor.

Table 5. Level of service for 2014 highway performance monitoring system sample panel—urban sections.

Area Type	Highway Type	Level of Service	No. Sections	Mileage	% of Mileage
Urban	Freeway	A	3,507	6,338	21.7%
Urban	Freeway	B	3,631	6,465	22.2%
Urban	Freeway	C	3,170	6,445	22.1%
Urban	Freeway	D	2,130	4,397	15.1%
Urban	Freeway	E	975	2,107	7.2%
Urban	Freeway	F	1,695	3,414	11.7%
Urban	**Freeway**	**A-F Total**	**15,108**	**29,166**	**100.0%**
Urban	Multilane	A	5,774	18,605	56.9%
Urban	Multilane	B	2,875	8,616	26.4%
Urban	Multilane	C	1,393	3,632	11.1%
Urban	Multilane	D	508	1,264	3.9%
Urban	Multilane	E	195	304	0.9%
Urban	Multilane	F	147	273	0.8%
Urban	**Multilane**	**A-F Total**	**10,892**	**32,695**	**100.0%**
Urban	Signalized	A	8,759	57,615	56.3%
Urban	Signalized	B	5,495	20,887	20.4%
Urban	Signalized	C	4,558	11,602	11.3%
Urban	Signalized	D	2,061	4,083	4.0%
Urban	Signalized	E	1,336	2,525	2.5%
Urban	Signalized	F	2,918	5,571	5.4%
Urban	**Signalized**	**A-F Total**	**25,127**	**102,284**	**100.0%**
Urban	Stop Controlled	B	1,643	3,358	5.5%
Urban	Stop Controlled	C	7,525	34,253	55.6%
Urban	Stop Controlled	D	1,234	8,657	14.1%
Urban	Stop Controlled	E	559	3,682	6.0%
Urban	Stop Controlled	F	1,839	11,611	18.9%
Urban	**Stop Controlled**	**A-F Total**	**12,800**	**61,560**	**100.0%**

Table 6. Selected highway performance monitoring system freeway sections with level of service and service measures attached.

Highway Type	State Code	Functional System	Route Signing	Route Number	Begin Point	End Point	County Code	Level of Service	Service Measure	Service Measure Value	Expanded Mileage
Freeway	1	1	2	65	182.47	183.53	1	C	Density	21.8	3.61
Freeway	1	1	2	10	29.07	29.073	3	E	Density	44.4	0.00
Freeway	1	1	2	10	29.073	30.258	3	F	Density	51.1	1.26
Freeway	1	1	2	10	30.258	32.77	3	F	Density	58.1	2.68
Freeway	1	1	2	10	32.77	34.5	3	F	Density	58.1	1.84
Freeway	1	1	2	10	34.5	34.98	3	F	Density	58.1	0.51
Freeway	1	1	2	10	34.984	35.181	3	F	Density	49.8	0.20
Freeway	1	1	2	10	35.181	38.775	3	E	Density	38.6	3.60
Freeway	1	1	2	10	38.775	41.3	3	C	Density	18.5	2.53
Freeway	1	1	2	10	41.3	44.31	3	C	Density	18.5	3.01
Freeway	1	1	2	10	44.32	44.89	3	B	Density	13.8	0.57
Freeway	1	1	2	10	44.89	44.899	3	B	Density	13.8	0.01
Freeway	1	1	2	10	58.56	66.29	3	C	Density	19.9	36.99
Freeway	1	1	2	65	32.21	34.07	3	C	Density	21.4	8.90
Freeway	1	1	2	65	34.092	37.77	3	A	Density	9.8	4.70
Freeway	1	1	2	65	37.77	37.88	3	A	Density	7.8	0.14
Freeway	1	1	2	65	107.5	111.81	13	B	Density	12.5	20.62
Freeway	1	1	2	65	120.25	123.87	13	B	Density	13.6	17.32
Freeway	1	1	2	65	126.09	126.44	13	B	Density	13.3	0.52
Freeway	1	1	2	65	128.12	129.66	13	B	Density	12.7	2.29
Freeway	1	1	2	65	130.2	131.11	13	B	Density	15.1	1.36
Freeway	1	1	2	65	131.81	133.93	13	B	Density	15.5	10.14
Freeway	1	1	2	65	135.21	139.6	13	B	Density	15.5	21.01

Table 7. Selected highway performance monitoring system multilane sections with level of service and service measures attached.

Highway Type	State Code	Functional System	Route Signing	Route Number	Begin Point	End Point	County Code	Level of Service	Service Measure	Service Measure Value	Expanded Mileage
Multilane	6	2		20	14.869	15.231	13	B	Density	17.1	4.34
Multilane	6	2		20	14.869	15.231	13	B	Density	17.1	0.94
Multilane	6	2		20	144.831	144.962	13	B	Density	17.1	0.18
Multilane	6	2		20	144.831	144.962	13	B	Density	17.1	1.57
Multilane	6	2		20	144.831	144.962	13	B	Density	17.1	0.34
Multilane	6	2		20	14.958	15.14	13	B	Density	17.1	0.25
Multilane	6	2		20	14.958	15.14	13	B	Density	17.1	2.18
Multilane	6	2		20	14.958	15.14	13	B	Density	17.1	0.47
Multilane	6	2		50	16.374	16.49	17	C	Density	24.0	0.31
Multilane	6	2		50	16.374	16.49	17	C	Density	24.0	0.13
Multilane	6	2		50	45.959	46.059	17	D	Density	32.7	0.25
Multilane	6	2		50	49.066	49.31	17	C	Density	24.0	0.65
Multilane	6	2		50	49.066	49.31	17	C	Density	24.0	0.28
Multilane	6	2		101	706.865	707.463	23	C	Density	21.9	1.51
Multilane	6	2		111	1.04	1.048	25	B	Density	17.7	0.01
Multilane	6	2		111	1.048	2.076	25	C	Density	19.5	1.03
Multilane	6	2		111	2.076	2.56	25	C	Density	19.0	0.51
Multilane	6	2		111	2.076	2.56	25	C	Density	19.0	0.48
Multilane	6	2		111	11.7	11.708	25	C	Density	19.0	0.01
Multilane	6	2		111	11.7	11.708	25	C	Density	19.0	0.01
Multilane	6	2		33	89.04	89.491	29	A	Density	5.5	1.75

Table 8. Selected highway performance monitoring system rural two-lane sections with level of service and service measures attached.

Highway Type	State Code	Functional System	Route Signing	Route Number	Begin Point	End Point	County Code	Level of Service	Service Measure	Service Measure Value	Expanded Mileage
Rural two lane	29	3	3	59	90.64	96.586	21	A	ATS	66.0	28.53
Rural two lane	29	3	3	59	96.586	99.204	21	A	ATS	66.0	12.56
Rural two lane	29	3	3	59	99.204	101.211	21	A	ATS	66.0	9.63
Rural two lane	29	3	4	53	3.078	9.02	23	A	ATS	59.0	18.99
Rural two lane	29	3	3	54	88.448	93.976	29	A	ATS	66.0	17.67
Rural two lane	29	3	3	54	93.976	97.224	29	A	ATS	64.0	15.58
Rural two lane	29	3	3	54	104.956	107.78	29	A	ATS	67.0	9.84
Rural two lane	29	3	4	72	157.529	161.565	31	A	ATS	61.0	12.90
Rural two lane	29	3	3	24	85.633	87.797	33	A	ATS	61.0	3.88
Rural two lane	29	3	4	21	147.476	148.761	35	A	ATS	61.0	2.31
Rural two lane	29	3	4	291	40.983	43.001	37	B	ATS	54.0	9.68
Rural two lane	29	3	3	54	40.832	44.162	39	A	ATS	67.0	5.97
Rural two lane	29	3	3	24	107.134	109.726	41	A	ATS	67.0	8.28

Table 8. Selected highway performance monitoring system rural two-lane sections with level of service and service measures attached (continuation).

Highway Type	State Code	Functional System	Route Signing	Route Number	Begin Point	End Point	County Code	Level of Service	Service Measure	Service Measure Value	Expanded Mileage
Rural two lane	29	3	3	60	65.175	66.136	43	A	ATS	63.0	3.35
Rural two lane	29	3	3	61	0	2.413	45	A	ATS	62.0	7.71
Rural two lane	29	3	4	92	22.623	26.498	47	B	ATS	55.0	12.38
Rural two lane	29	3	4	8	4.782	14.947	55	A	ATS	61.0	18.24
Rural two lane	29	3	4	8	19.762	22.989	55	A	ATS	59.0	10.31
Rural two lane	29	3	4	8	23.454	33.377	55	A	ATS	61.0	31.71
Rural two lane	29	3	3	65	213.933	215.239	59	A	ATS	66.0	4.17
Rural two lane	29	3	4	6	47.655	51.941	61	A	ATS	66.0	13.70

Table 9. Selected highway performance monitoring system signalized sections with level of service and service measures attached.

Highway Type	State Code	Functional System	Route Signing	Route Number	Begin Point	End Point	County Code	Level of Service	Service Measure	Service Measure Value	Expanded Mileage
Signalized	5	3	4	22	2.56	3.2	131	C	ATS	25.6	4.88
Signalized	5	3	4	22	3.2	3.58	131	A	ATS	35.7	2.90
Signalized	5	3	4	22	8.91	10.64	131	A	ATS	45.9	10.63
Signalized	5	3	3	71	3.91	4.92	131	A	ATS	41.2	7.70
Signalized	5	3	6		0	1.88	131	A	ATS	36.7	11.55
Signalized	5	3	6		0	1.88	131	A	ATS	36.7	11.55
Signalized	5	3	6		0	1.88	131	A	ATS	36.7	11.55
Signalized	5	3	6		0	1.88	131	A	ATS	36.7	11.55
Signalized	5	3	3	71	12.47	13.34	133	A	ATS	44.3	3.62
Signalized	8	3	10		1.009	1.989	1	B	ATS	39.0	7.14
Signalized	8	3	10		0	0.48	1	D	ATS	18.0	3.50
Signalized	8	3	10		1.06	2.08	1	A	ATS	43.6	7.43
Signalized	8	3	10		2.08	4.19	1	B	ATS	39.2	6.30
Signalized	8	3	4	2	3.039	4.401	1	B	ATS	43.5	9.92
Signalized	8	3	10		2.32	3.38	1	A	ATS	42.5	16.90
Signalized	8	3	4	44	0.435	1.807	1	F	ATS	13.8	10.00
Signalized	8	3	4	44	0.435	1.807	1	F	ATS	13.8	10.00
Signalized	8	3	3	160	229.351	230.428	3	C	ATS	36.7	7.62
Signalized	8	3	10		7.82	8.83	5	B	ATS	32.9	16.11
Signalized	8	3	10		0	1.11	5	D	ATS	22.5	17.70
Signalized	8	3	10		2.1	3.1	5	B	ATS	32.2	15.95

Table 10. Selected highway performance monitoring system stop-controlled sections with level of service and service measures attached.

Highway Type	State Code	Functional System	Route Signing	Route Number	Begin Point	End Point	County Code	Level of Service	Service Measure	Service Measure Value	Expanded Mileage
Stop Control	1	5	1	1046	0.12	0.83	33	C	Delay	16.0	1.22
Stop Control	1	5	1	1386	0.294	1.12	33	C	Delay	16.0	1.41
Stop Control	1	5	6	30	5.335	7.2	35	B	Delay	10.2	75.01
Stop Control	1	5	6	85	1.368	6.63	37	B	Delay	10.3	211.63
Stop Control	1	5	6	101	0	1.55	39	C	Delay	16.0	9.61
Stop Control	1	5	6	687	0.07	0.71	39	C	Delay	15.9	3.97
Stop Control	1	5	6	19	0	1.52	39	C	Delay	16.1	9.42
Stop Control	1	5	6	36	7.41	8.17	43	C	Delay	17.3	15.85
Stop Control	1	5	6	11	1.84	6.67	45	B	Delay	10.3	194.25
Stop Control	1	5	6	50	1.534	3.38	45	C	Delay	17.9	38.50
Stop Control	1	5	6	375	0.104	0.69	45	C	Delay	16.3	0.96
Stop Control	1	5	6	377	0	0.31	45	C	Delay	15.7	0.51
Stop Control	1	5	6	23	4.5	7.24	51	C	Delay	17.2	10.80
Stop Control	1	5	6	1	10.858	17	53	B	Delay	10.3	247.02

Table 10. Selected highway performance monitoring system stop-controlled sections with level of service and service measures attached (continuation).

Highway Type	State Code	Functional System	Route Signing	Route Number	Begin Point	End Point	County Code	Level of Service	Service Measure	Service Measure Value	Expanded Mileage
Stop Control	1	5	6	49	1.132	1.46	53	D	Delay	25.8	20.19
Stop Control	1	5	6	5039	0.9	1.5	53	C	Delay	20.1	12.51
Stop Control	1	5	6	15	0	1.43	55	C	Delay	20.2	9.01
Stop Control	1	5	6	185	0	1.86	55	C	Delay	18.2	11.72
Stop Control	1	5	6	185	1.869	2.65	55	C	Delay	18.6	4.92
Stop Control	1	5	1	419	4.238	4.97	55	C	Delay	18.7	4.61
Stop Control	1	5	1	810	0	0.88	55	C	Delay	16.3	1.20

Table 11. Level of service ranges by highway type.

	Freeway	**Multilane**	**Rural Two Lane**	**Stop Controlled**
Service Measure	**Density**	**Density**	**Average Travel Speed (ATS)**	**Delay**
Level of Service A	<= 11	<= 11	> 55	<= 10
Level of Service B	> 11-18	> 11-18	> 50-55	> 10-15
Level of Service C	> 18-26	> 18-26	> 45-50	> 15-25
Level of Service D	> 26-35	> 26-35	> 40-45	> 25-35
Level of Service E	> 35-45	> 35-45	<= 40	> 35-50
Level of Service F	> 45 or where demand > capacity	> 45 or where demand > capacity	Demand > capacity	> 50

Notes: Density is measured as passenger cars per mile, per lane. ATS is measured as miles per hour. Delay is measured in seconds per vehicle.

Table 12. Level of service ranges for signalized highways.

Base-Free Flow Speed	**Average Travel Speed**					
	Level of Service A	**Level of Service B**	**Level of Service C**	**Level of Service D**	**Level of Service E**	**Level of Service F**
>= 55	> 44	> 37	> 28	> 22	> 17	<= 17
50	> 40	> 34	> 25	> 20	> 15	<= 15
45	> 36	> 30	> 23	> 18	> 14	<= 14
40	> 32	> 27	> 20	> 16	> 12	<= 12
35	> 28	> 23	> 18	> 14	> 11	<= 11
30	> 24	> 20	> 15	> 12	> 9	<= 9
<= 25	>20	> 17	> 13	> 10	> 8	<= 8

APPENDIX A. GENERALIZED SERVICE VOLUME TABLES

The service volumes in the tables are the maximum values that can be maintained and still be within the Level of Service (LOS) range. For example in the first row of the freeway table, if the actual volume is less than or equal to 46,100, then it is LOS B. Therefore, the service volumes in the tables are the **maximum** volumes that can be achieved for that LOS category.

For roadways that are dual carriageways, AADT should be divided by two before entering the tables.

Table 13. Freeway generalized service volume table.

Area Type	Number Lanes	Truck Percent	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
Rural						
	4	0	46,100	62,000	74,800	84,700
		10	43,900	59,000	71,200	80,700
		20	41,900	56,300	68,000	77,000
		30	40,100	53,900	65,000	73,700
	6	0	69,200	93,000	112,200	127,100
		10	65,900	88,500	106,900	121,100
		20	62,900	84,500	102,000	115,600
		30	60,100	80,800	97,600	110,500
	8	0	92,200	124,000	149,600	169,500
		10	87,800	118,100	142,500	161,400
		20	83,800	112,700	136,000	154,100
		30	80,200	107,800	130,100	147,400
	10	0	115,300	155,000	187,100	211,900
		10	109,800	147,600	178,100	201,800
		20	104,800	140,900	170,000	192,600
		30	100,300	134,800	162,600	184,200
	12	0	138,400	186,000	224,500	254,300
		10	131,800	177,100	213,800	242,200
		20	125,800	169,100	204,100	231,200
		30	120,300	161,700	195,200	221,100

Table 13. Freeway generalized service volume table (continuation).

Area Type	Number Lanes	Truck Percent	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
Urban						
	4	0	43,700	60,100	73,100	83,000
		10	41,600	57,200	69,600	79,100
		20	39,700	54,600	66,400	75,500
		30	38,000	52,200	63,600	72,200
	6	0	65,600	90,100	109,700	124,600
		10	62,500	85,800	104,400	118,600
		20	59,600	81,900	99,700	113,200
		30	57,000	78,300	95,400	108,300
	8	0	87,500	120,200	146,200	166,100
		10	83,300	114,400	139,300	158,200
		20	79,500	109,200	132,900	151,000
		30	76,100	104,500	127,200	144,400
	10	0	109,400	150,200	182,800	207,600
		10	104,200	143,100	174,100	197,700
		20	99,400	136,600	166,200	188,700
		30	95,100	130,600	159,000	180,500
	12	0	131,300	180,300	219,400	249,200
		10	125,000	171,700	208,900	237,300
		20	119,300	163,900	199,400	226,500
		30	114,100	156,700	190,800	216,700

Table 14. Multilane highway generalized service volume table.

Area Type	Number Lanes	Truck Percent	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
Rural						
	4	0	42,000	57,300	69,600	80,000
		10	39,900	54,600	66,300	76,100
		20	38,100	52,100	63,300	72,700
		30	36,500	49,900	60,600	69,500
	6	0	63,000	86,000	104,500	120,000
		10	59,900	81,900	99,500	114,200
		20	57,200	78,200	95,000	109,000
		30	54,700	74,800	90,900	104,300
	8	0	84,000	114,700	139,300	160,000
		10	79,900	109,300	132,700	152,300
		20	76,300	104,300	126,700	145,400
		30	73,000	99,800	121,200	139,100
	10	0	105,000	143,400	174,200	200,000
		10	99,900	136,600	165,900	190,400
		20	95,400	130,400	158,300	181,800
		30	91,300	124,700	151,500	173,900
Urban						
	4	0	34,500	49,300	61,400	71,600
		10	32,800	47,000	58,400	68,200
		20	31,300	44,800	55,800	65,100
		30	30,000	42,900	53,300	62,300
	6	0	51,700	74,000	92,100	107,500
		10	49,200	70,500	87,700	102,300
		20	47,000	67,300	83,700	97,700
		30	45,000	64,400	80,000	93,400
	8	0	69,000	98,700	122,800	143,300
		10	65,700	94,000	116,900	136,500
		20	62,700	89,700	111,600	130,300
		30	60,000	85,800	106,700	124,600
	10	0	86,200	123,400	153,500	179,100
		10	82,100	117,500	146,200	170,600
		20	78,400	112,200	139,500	162,800
		30	75,000	107,300	133,400	155,700

Table 15. Signalized highway generalized service volume table.

Number Lanes	% Green Time	Speed Limit	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
2	40	35	12,800	14,900	16,400	18,700
		40	12,600	14,400	15,900	17,700
		45	12,000	14,200	15,500	17,400
		50	11,800	13,800	15,200	16,700
		55	12,300	14,100	15,400	16,900
		60	12,700	14,300	15,500	17,100
	45	35	14,600	16,900	18,500	21,100
		40	14,400	16,300	18,000	20,000
		45	13,900	16,100	17,600	19,700
		50	13,600	15,700	17,200	18,900
		55	14,200	16,000	17,400	19,100
		60	14,600	16,200	17,600	19,300
	50	35	16,500	18,900	20,700	23,600
		40	16,300	18,300	20,100	22,300
		45	15,700	18,100	19,600	22,000
		50	15,500	17,700	19,200	21,100
		55	16,100	17,900	19,500	21,400
		60	16,400	18,100	19,600	21,500
	55	35	18,400	20,900	22,900	26,000
		40	18,100	20,300	22,200	24,700
		45	17,600	20,000	21,700	24,300
		50	17,400	19,600	21,300	23,400
		55	17,900	19,900	21,500	23,600
		60	18,300	20,100	21,700	23,800
	60	35	20,300	22,900	25,100	28,500
		40	20,000	22,200	24,400	27,000
		45	19,500	22,000	23,800	26,600
		50	19,300	21,500	23,300	25,600
		55	19,800	21,800	23,600	25,800
		60	20,200	22,100	23,800	26,100

Table 15. Signalized highway generalized service volume table (continuation).

Number Lanes	% Green Time	Speed Limit	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
2	65	35	22,200	25,000	27,300	31,000
		40	21,900	24,200	26,500	29,400
		45	21,400	24,000	25,900	28,900
		50	21,200	23,500	25,400	27,800
		55	21,700	23,800	25,700	28,100
		60	22,100	24,000	25,900	28,300
	70	35	24,100	27,000	29,500	33,500
		40	23,800	26,200	28,700	31,700
		45	23,300	26,000	28,000	31,200
		50	23,100	25,400	27,500	30,100
		55	23,600	25,800	27,800	30,400
		60	24,000	26,000	28,000	30,600
	75	35	26,000	29,100	31,700	36,000
		40	25,700	28,200	30,800	34,100
		45	25,200	28,000	30,100	33,600
		50	25,000	27,400	29,600	32,300
		55	25,500	27,700	29,900	32,700
		60	25,900	28,000	30,100	32,900
	80	35	27,900	31,100	33,900	38,500
		40	27,600	30,300	33,000	36,500
		45	27,100	30,000	32,300	35,900
		50	26,900	29,400	31,700	34,600
		55	27,400	29,700	32,000	35,000
		60	27,800	30,000	32,300	35,200
4	40	35	27,400	30,600	33,300	37,800
		40	27,100	29,700	32,400	35,900
		45	26,500	29,400	31,700	35,300
		50	26,200	28,800	31,100	34,000
		55	26,800	29,200	31,400	34,300
		60	27,300	29,500	31,700	34,600

Table 15. Signalized highway generalized service volume table (continuation).

Number Lanes	% Green Time	Speed Limit	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
4	45	35	31,100	34,500	37,600	42,700
		40	30,700	33,600	36,600	40,500
		45	30,100	33,300	35,800	39,900
		50	29,800	32,600	35,100	38,400
		55	30,500	33,000	35,500	38,800
		60	30,900	33,400	35,800	39,100
	50	35	34,700	38,500	41,900	47,600
		40	34,400	37,500	40,800	45,100
		45	33,700	37,100	39,900	44,400
		50	33,500	36,400	39,200	42,800
		55	34,100	36,900	39,600	43,200
		60	34,600	37,200	39,900	43,600
	55	35	38,400	42,600	46,300	52,500
		40	38,100	41,400	45,100	49,800
		45	37,400	41,000	44,100	49,000
		50	37,100	40,200	43,200	47,200
		55	37,800	40,700	43,700	47,700
		60	38,300	41,100	44,100	48,100
	60	35	42,100	46,600	50,700	57,400
		40	41,800	45,400	49,300	54,400
		45	41,100	44,900	48,200	53,600
		50	40,800	44,100	47,300	51,700
		55	41,500	44,600	47,800	52,200
		60	42,000	45,000	48,300	52,600
	65	35	45,900	50,700	55,100	62,300
		40	45,500	49,300	53,600	59,200
		45	44,800	48,900	52,400	58,300
		50	44,500	48,000	51,500	56,200
		55	45,200	48,500	52,000	56,700
		60	45,700	49,000	52,400	57,100

Table 15. Signalized highway generalized service volume table (continuation).

Number Lanes	% Green Time	Speed Limit	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
4	70	35	49,600	54,700	59,500	67,300
		40	49,200	53,300	57,900	63,900
		45	48,500	52,800	56,600	62,900
		50	48,200	51,900	55,600	60,700
		55	48,900	52,400	56,200	61,200
		60	49,500	52,900	56,700	61,700
	75	35	53,400	58,800	63,900	72,300
		40	53,000	57,300	62,200	68,600
		45	52,200	56,800	60,900	67,600
		50	51,900	55,800	59,800	65,200
		55	52,700	56,400	60,400	65,800
		60	53,200	56,900	60,900	66,300
	80	35	57,200	63,000	68,400	77,300
		40	56,800	61,300	66,600	73,400
		45	56,000	60,800	65,100	72,300
		50	55,700	59,700	64,000	69,700
		55	56,400	60,400	64,600	70,400
		60	57,000	60,900	65,200	70,900
6	40	35	41,700	46,100	50,200	56,900
		40	41,300	44,900	48,800	53,900
		45	40,600	44,400	47,700	53,100
		50	40,300	43,600	46,800	51,200
		55	41,000	44,100	47,300	51,700
		60	41,500	44,600	47,800	52,100
	45	35	47,100	52,000	56,600	64,100
		40	46,700	50,700	55,100	60,800
		45	46,000	50,200	53,900	59,900
		50	45,700	49,300	52,900	57,700
		55	46,400	49,800	53,400	58,300
		60	47,000	50,300	53,900	58,800

Table 15. Signalized highway generalized service volume table (continuation).

Number Lanes	% Green Time	Speed Limit	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
6	50	35	52,600	58,000	63,100	71,500
		40	52,200	56,500	61,400	67,800
		45	51,400	56,000	60,100	66,800
		50	51,100	55,000	59,000	64,400
		55	51,800	55,600	59,600	65,000
		60	52,400	56,100	60,100	65,500
	55	35	58,100	64,100	69,600	78,800
		40	57,700	62,400	67,800	74,800
		45	56,800	61,800	66,300	73,700
		50	56,500	60,700	65,100	71,000
		55	57,300	61,400	65,700	71,700
		60	57,900	62,000	66,300	72,200
	60	35	63,700	70,100	76,200	86,200
		40	63,200	68,300	74,100	81,800
		45	62,300	67,700	72,500	80,600
		50	62,000	66,500	71,200	77,700
		55	62,800	67,200	71,900	78,400
		60	63,500	67,800	72,600	79,000
	65	35	69,300	76,200	82,700	93,600
		40	68,800	74,200	80,600	88,900
		45	67,800	73,600	78,800	87,500
		50	67,400	72,200	77,400	84,400
		55	68,300	73,100	78,200	85,200
		60	69,000	73,700	78,900	85,900
	70	35	74,900	82,300	89,400	101,100
		40	74,300	80,200	87,000	95,900
		45	73,300	79,500	85,100	94,500
		50	72,900	78,100	83,600	91,100
		55	73,900	78,900	84,500	92,000
		60	74,700	79,700	85,200	92,700

Table 15. Signalized highway generalized service volume table (continuation).

Number Lanes	% Green Time	Speed Limit	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
6	75	35	80,500	88,500	96,000	108,600
		40	80,000	86,200	93,500	103,100
		45	78,900	85,500	91,500	101,500
		50	78,500	83,900	89,900	97,900
		55	79,500	84,900	90,800	98,800
		60	80,300	85,700	91,600	99,600
	80	35	86,200	94,700	102,700	116,100
		40	85,600	92,300	100,000	110,200
		45	84,500	91,400	97,900	108,600
		50	84,100	89,800	96,100	104,700
		55	85,100	90,800	97,100	105,700
		60	86,000	91,700	97,900	106,500
8	40	35	55,800	61,600	67,000	75,900
		40	55,400	60,000	65,200	72,000
		45	54,500	59,400	63,700	70,900
		50	54,200	58,300	62,600	68,300
		55	55,000	59,000	63,200	69,000
		60	55,700	59,600	63,800	69,500
	45	35	63,100	69,500	75,600	85,600
		40	62,600	67,700	73,500	81,200
		45	61,700	67,100	71,900	80,000
		50	61,300	65,900	70,600	77,100
		55	62,200	66,600	71,300	77,800
		60	62,900	67,200	72,000	78,400
	50	35	70,400	77,500	84,200	95,300
		40	69,900	75,500	82,000	90,500
		45	68,900	74,800	80,200	89,100
		50	68,500	73,500	78,700	85,900
		55	69,400	74,300	79,500	86,700
		60	70,200	75,000	80,200	87,400

Table 15. Signalized highway generalized service volume table (continuation).

Number Lanes	% Green Time	Speed Limit	Level of Service			
			B Service Volume	C Service Volume	D Service Volume	E Service Volume
8	55	35	77,700	85,500	92,900	105,100
		40	77,200	83,300	90,400	99,800
		45	76,100	82,600	88,500	98,300
		50	75,700	81,100	86,900	94,700
		55	76,700	82,000	87,800	95,600
		60	77,500	82,700	88,500	96,400
	60	35	85,100	93,600	101,600	115,000
		40	84,500	91,200	99,000	109,100
		45	83,300	90,400	96,800	107,500
		50	82,900	88,800	95,100	103,600
		55	84,000	89,700	96,000	104,600
		60	84,900	90,600	96,900	105,400
	65	35	92,600	101,700	110,400	124,900
		40	91,900	99,100	107,500	118,500
		45	90,700	98,200	105,200	116,800
		50	90,200	96,500	103,300	112,600
		55	91,400	97,500	104,400	113,600
		60	92,300	98,400	105,200	114,500
	70	35	100,100	109,900	119,200	134,800
		40	99,300	107,100	116,100	128,000
		45	98,000	106,100	113,600	126,100
		50	97,600	104,200	111,600	121,600
		55	98,800	105,400	112,700	122,700
		60	99,800	106,400	113,700	123,700
	75	35	107,600	118,100	128,100	144,800
		40	106,800	115,100	124,800	137,500
		45	105,400	114,100	122,100	135,500
		50	104,900	112,100	119,900	130,600
		55	106,200	113,300	121,100	131,900
		60	107,300	114,300	122,200	132,900
	80	35	115,200	126,300	137,000	–
		40	114,400	123,100	133,500	297,000
		45	112,900	122,100	130,600	144,900
		50	112,300	119,900	128,300	139,700
		55	113,700	121,200	129,600	141,000
		60	114,800	122,300	130,700	142,100

Table 16. Stop sign-controlled highways generalized service volume table.

Land Use	Functional System	Level of Service			
		B Service Volume	**C Service Volume**	**D Service Volume**	**E Service Volume**
Rural	Princ. Arterial	7,600	11,100	12,400	13,600
	Minor Arterial	6,800	10,200	11,500	12,600
	Collector	5,900	9,300	10,600	11,700
Urban	Princ. Arterial	5,200	8,500	9,800	10,900
	Minor Arterial	1,900	5,200	6,400	7,400
	Collector		2,800	4,000	4,800

Table 17. Rural two-lane highways generalized service volume table.

Speed Limit	Terrain	Truck Pct.	Level of Service		
			B Service Volume	**C Service Volume**	**D Service Volume**
45	Flat	0	3,600	8,700	13,900
		2	3,500	8,700	13,900
		4	3,500	8,700	13,900
		6	3,500	8,700	13,900
		8	3,400	8,600	13,900
		10	3,400	8,600	13,900
	Rolling	0	3,600	8,700	13,900
		2	3,500	8,600	13,900
		4	3,400	8,500	13,900
		6	3,300	8,400	13,900
		8	3,300	8,200	13,900
		10	3,200	8,100	13,900
	Mountainous	0	3,600	8,700	13,900
		2	3,200	7,700	12,300
		4	2,800	7,000	11,100
		6	2,600	6,300	10,100
		8	2,400	5,800	9,300
		10	2,200	5,400	8,500
50	Flat	0	8,700	13,900	19,000
		2	8,700	13,900	19,000
		4	8,700	13,900	19,000

Table 17. Rural two-lane highways generalized service volume table (continuation).

Speed Limit	Terrain	Truck Pct.	Level of Service		
			B Service Volume	**C Service Volume**	**D Service Volume**
50	Flat	6	8,700	13,900	19,000
		8	8,600	13,900	19,000
		10	8,600	13,900	19,000
	Rolling	0	8,700	13,900	19,000
		2	8,600	13,900	19,000
		4	8,500	13,900	19,000
		6	8,400	13,900	19,000
		8	8,200	13,900	19,000
		10	8,100	13,900	19,000
	Mountainous	0	8,700	13,900	19,000
		2	7,700	12,300	16,900
		4	7,000	11,100	15,200
		6	6,300	10,100	13,900
		8	5,800	9,300	12,700
		10	5,400	8,500	11,700
55	Flat	0	13,900	19,000	24,200
		2	13,900	19,000	24,200
		4	13,900	19,000	24,200
		6	13,900	19,000	24,200
		8	13,900	19,000	24,200
		10	13,900	19,000	24,200
	Rolling	0	13,900	19,000	24,200
		2	13,900	19,000	24,200
		4	13,900	19,000	24,200
		6	13,900	19,000	24,200
		8	13,900	19,000	24,200
		10	13,900	19,000	24,200
	Mountainous	0	13,900	19,000	24,200
		2	12,300	16,900	21,500
		4	11,100	15,200	19,400
		6	10,100	13,900	17,600
		8	9,300	12,700	16,100
		10	8,500	11,700	14,900

Table 17. Rural two-lane highways generalized service volume table (continuation).

Speed Limit	Terrain	Truck Pct.	Level of Service		
			B Service Volume	**C Service Volume**	**D Service Volume**
60	Flat	0	19,000	24,200	29,300
		2	19,000	24,200	29,300
		4	19,000	24,200	29,300
		6	19,000	24,200	29,300
		8	19,000	24,200	29,300
		10	19,000	24,200	29,300
	Rolling	0	19,000	24,200	29,300
		2	19,000	24,200	29,300
		4	19,000	24,200	29,300
		6	19,000	24,200	29,300
		8	19,000	24,200	29,300
		10	19,000	24,200	29,300
	Mountainous	0	19,000	24,200	29,300
		2	16,900	21,500	26,100
		4	15,200	19,400	23,500
		6	13,900	17,600	21,400
		8	12,700	16,100	19,600
		10	11,700	14,900	18,100
65	Flat	0	24,200	29,300	34,500
		2	24,200	29,300	34,500
		4	24,200	29,300	34,500
		6	24,200	29,300	34,500
		8	24,200	29,300	34,500
		10	24,200	29,300	34,500
	Rolling	0	24,200	29,300	34,500
		2	24,200	29,300	34,500
		4	24,200	29,300	34,500
		6	24,200	29,300	34,500
		8	24,200	29,300	34,500
		10	24,200	29,300	34,500
	Mountainous	0	24,200	29,300	34,500
		2	21,500	26,100	30,700
		4	19,400	23,500	27,600
		6	17,600	21,400	25,100
		8	16,100	19,600	23,000
		10	14,900	18,100	21,300

Federal Highway Administration
Office of Policy and Governmental Affairs
1200 New Jersey Avenue, SE
Washington, DC 20590

https://www.fhwa.dot.gov/policy/

October 2017
PL-18-003

This material is based upon work supported by the FHWA
under contract number DTFH61-13-D-00014.

Any opinions, findings and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the FHWA.

This page intentionally left blank.

Appendix C
Existing Traffic Counts

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

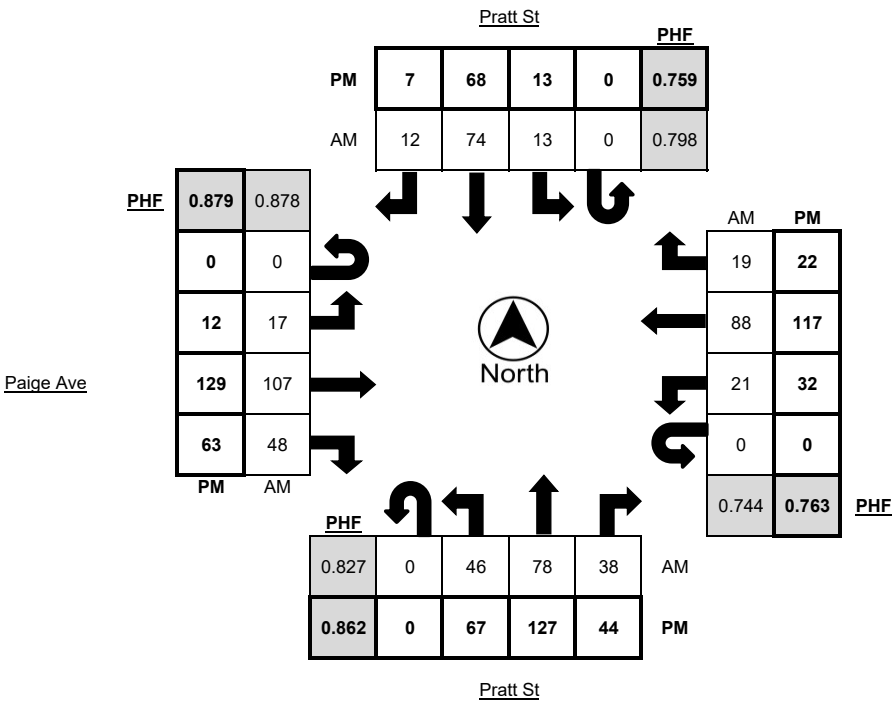
LOCATION Paige Ave/Pratt St
COUNTY Tulare
COLLECTION DATE Tuesday, February 25, 2025
LATITUDE 36.1820
LONGITUDE -119.3577
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	3	11	3	0	0	1	8	5	0	0	0	23	18	3	0	7	18	1	4
7:15 AM - 7:30 AM	0	5	7	7	1	0	2	8	0	0	0	2	26	10	5	0	6	18	3	0
7:30 AM - 7:45 AM	0	7	17	7	3	0	1	13	4	0	0	5	32	8	3	0	8	28	7	4
7:45 AM - 8:00 AM	0	12	16	14	3	0	3	12	5	1	0	3	22	14	2	0	7	23	7	4
8:00 AM - 8:15 AM	0	14	25	10	1	0	3	26	2	2	0	5	26	18	5	0	2	19	2	5
8:15 AM - 8:30 AM	0	13	20	7	2	0	6	23	1	0	0	4	27	8	3	0	4	18	3	1
8:30 AM - 8:45 AM	0	12	12	6	4	0	0	8	0	0	0	0	31	10	1	0	5	13	4	5
8:45 AM - 9:00 AM	0	3	7	6	1	0	2	10	1	1	0	4	20	10	3	0	6	16	1	2
TOTAL	**0**	**69**	**115**	**60**	**15**	**0**	**18**	**108**	**18**	**4**	**0**	**23**	**207**	**96**	**25**	**0**	**45**	**153**	**28**	**25**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	18	35	9	4	0	2	16	1	1	0	1	34	16	4	0	8	20	8	2
4:15 PM - 4:30 PM	0	21	27	11	3	0	2	12	2	1	0	8	24	19	5	0	3	26	3	4
4:30 PM - 4:45 PM	0	16	40	13	1	0	5	23	1	0	0	2	41	15	6	0	14	36	6	1
4:45 PM - 5:00 PM	0	12	25	11	4	0	4	17	3	1	0	1	30	13	1	0	7	35	5	2
5:00 PM - 5:15 PM	0	20	23	5	2	0	2	16	6	0	0	0	26	14	3	0	9	42	4	1
5:15 PM - 5:30 PM	0	14	23	10	0	0	1	13	3	0	0	3	12	4	1	0	9	44	5	3
5:30 PM - 5:45 PM	0	11	31	8	1	0	1	28	0	0	0	2	26	13	0	0	5	24	4	2
5:45 PM - 6:00 PM	0	11	17	3	0	0	5	15	1	0	0	1	32	11	2	0	12	19	6	1
TOTAL	**0**	**123**	**221**	**70**	**15**	**0**	**22**	**140**	**17**	**3**	**0**	**18**	**225**	**105**	**22**	**0**	**67**	**246**	**41**	**16**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	0	46	78	38	9	0	13	74	12	3	0	17	107	48	13	0	21	88	19	14
4:00 PM - 5:00 PM	0	67	127	44	12	0	13	68	7	3	0	12	129	63	16	0	32	117	22	9

	PHF	Trucks
AM	0.923	7.0%
PM	0.827	5.7%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

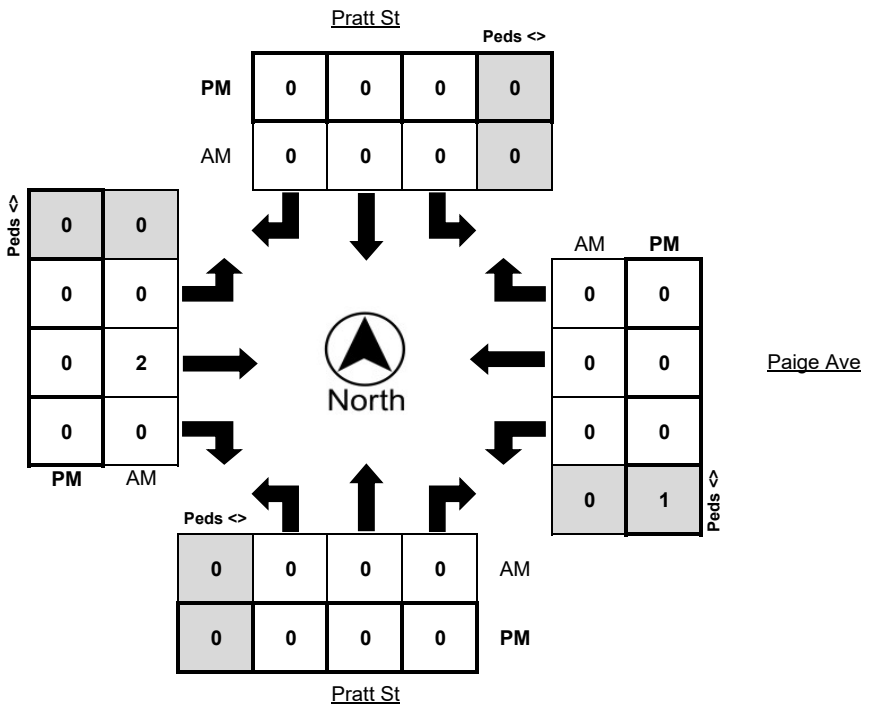
LOCATION Paige Ave/Pratt St
LATITUDE 36.1820
COUNTY Tulare
LONGITUDE -119.3577
COLLECTION DATE Tuesday, February 25, 2025
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

	Bikes	Peds
AM Peak Total	2	0
PM Peak Total	0	1



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

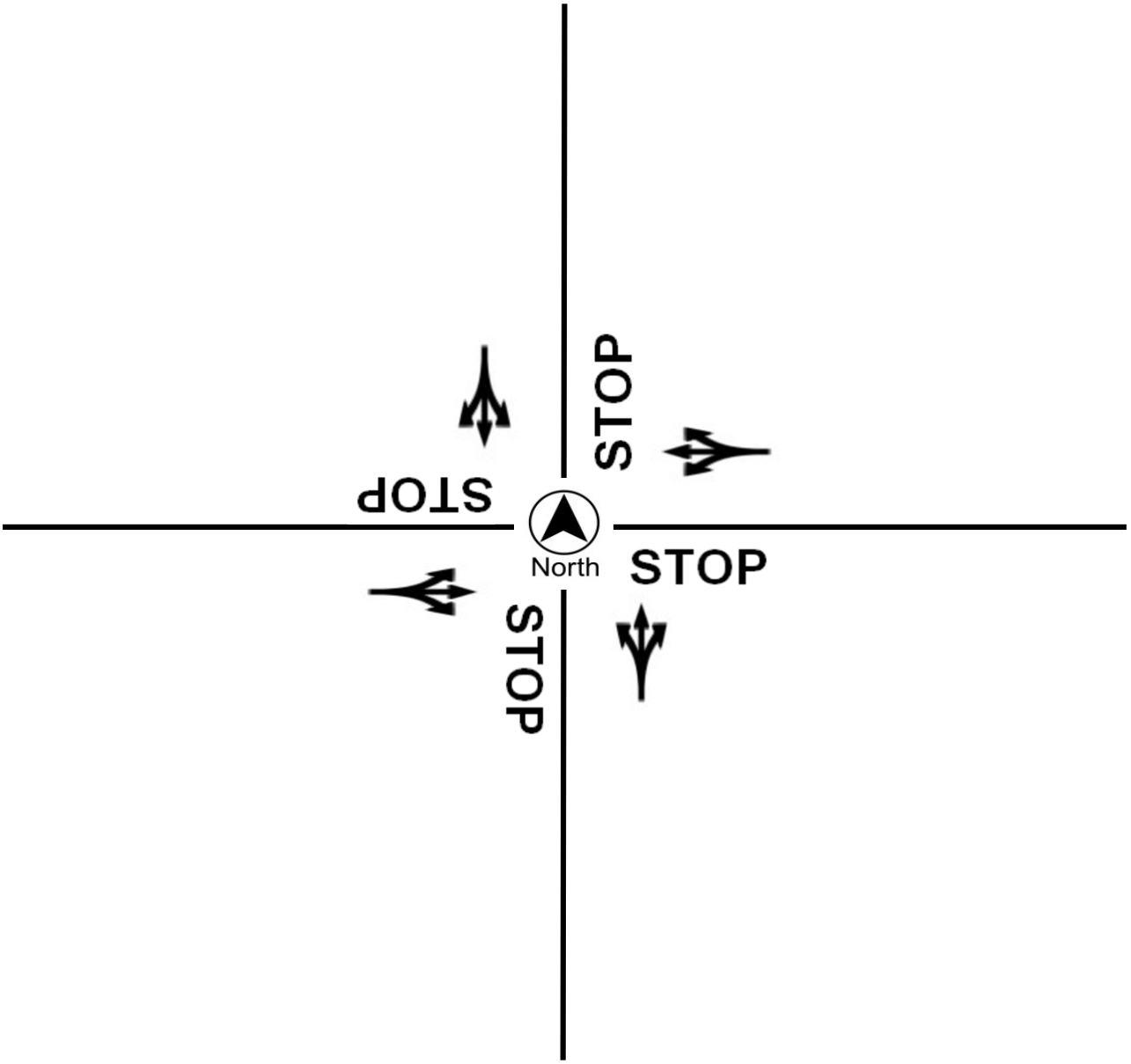
Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

LOCATION	Paige Ave/Pratt St	**N/S STREET**	Pratt St / Pratt St
COUNTY	Tulare	**E/W STREET**	Paige Ave / Paige Ave
COLLECTION DATE	Tuesday, February 25, 2025	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	All-Way Stop

COMMENTS



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

LOCATION Paige Ave/K St
COUNTY Tulare
COLLECTION DATE Tuesday, February 25, 2025

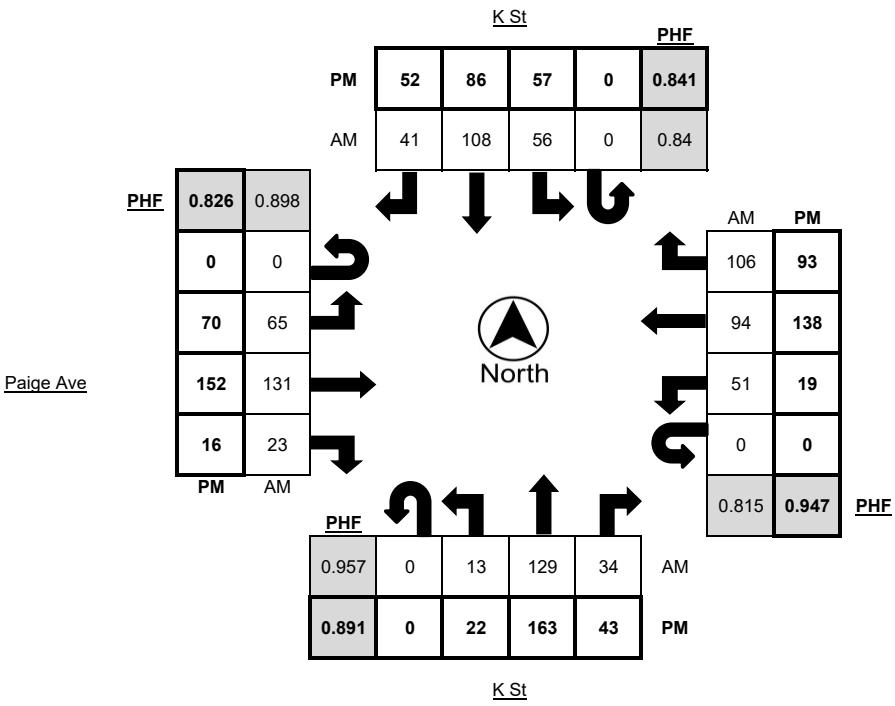
LATITUDE 36.1821
LONGITUDE -119.3403
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	3	12	9	10	0	5	19	4	6	0	11	14	6	5	0	15	21	12	0
7:15 AM - 7:30 AM	0	4	19	6	8	0	13	27	9	6	0	6	29	5	3	0	11	23	25	5
7:30 AM - 7:45 AM	0	2	24	6	4	0	6	25	9	8	0	5	25	8	1	0	18	33	33	3
7:45 AM - 8:00 AM	0	2	35	8	6	0	10	27	8	2	0	22	30	9	3	0	19	25	33	9
8:00 AM - 8:15 AM	0	7	32	7	11	0	14	24	7	5	0	17	27	4	4	0	11	22	24	5
8:15 AM - 8:30 AM	0	1	31	10	7	0	13	25	16	3	0	21	35	5	10	0	8	21	24	5
8:30 AM - 8:45 AM	0	3	31	9	10	0	19	32	10	8	0	5	39	5	6	0	13	26	25	7
8:45 AM - 9:00 AM	0	3	21	6	5	0	8	34	8	3	0	13	23	4	3	0	15	15	14	8
TOTAL	**0**	**25**	**205**	**61**	**61**	**0**	**88**	**213**	**71**	**41**	**0**	**100**	**222**	**46**	**35**	**0**	**110**	**186**	**190**	**42**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	4	39	13	8	0	10	24	16	6	0	13	38	7	6	0	4	31	27	7
4:15 PM - 4:30 PM	0	5	39	12	2	0	11	21	11	7	0	25	31	3	5	0	2	35	29	7
4:30 PM - 4:45 PM	0	7	50	7	7	0	19	23	16	3	0	17	50	5	6	0	8	35	19	9
4:45 PM - 5:00 PM	0	6	35	11	2	0	17	18	9	3	0	15	33	1	2	0	5	37	18	3
5:00 PM - 5:15 PM	0	14	49	11	4	0	16	10	8	3	0	10	28	4	4	0	7	41	19	4
5:15 PM - 5:30 PM	0	7	27	5	2	0	10	9	6	0	0	5	29	1	1	0	6	55	10	3
5:30 PM - 5:45 PM	0	7	20	4	3	0	27	15	15	1	0	16	24	5	0	0	4	34	20	2
5:45 PM - 6:00 PM	0	3	17	11	3	0	10	10	8	1	0	7	33	3	2	0	8	34	19	4
TOTAL	**0**	**53**	**276**	**74**	**31**	**0**	**120**	**130**	**89**	**24**	**0**	**108**	**266**	**29**	**26**	**0**	**44**	**302**	**161**	**39**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:45 AM - 8:45 AM	0	13	129	34	34	0	56	108	41	18	0	65	131	23	23	0	51	94	106	26
4:00 PM - 5:00 PM	0	22	163	43	19	0	57	86	52	19	0	70	152	16	19	0	19	138	93	26

	PHF	Trucks
AM	0.933	11.9%
PM	0.890	9.1%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

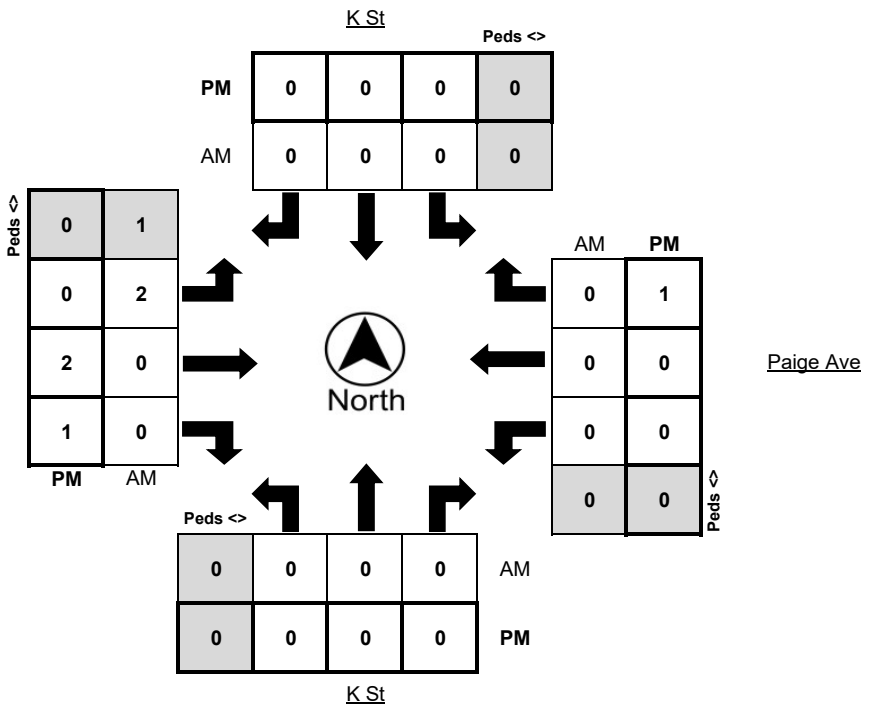
LOCATION Paige Ave/K St
LATITUDE 36.1821
COUNTY Tulare
LONGITUDE -119.3403
COLLECTION DATE Tuesday, February 25, 2025
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**1**	**0**	**0**	**3**	**1**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:45 AM - 8:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1
4:00 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0

	Bikes	Peds
AM Peak Total	2	1
PM Peak Total	**4**	**0**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

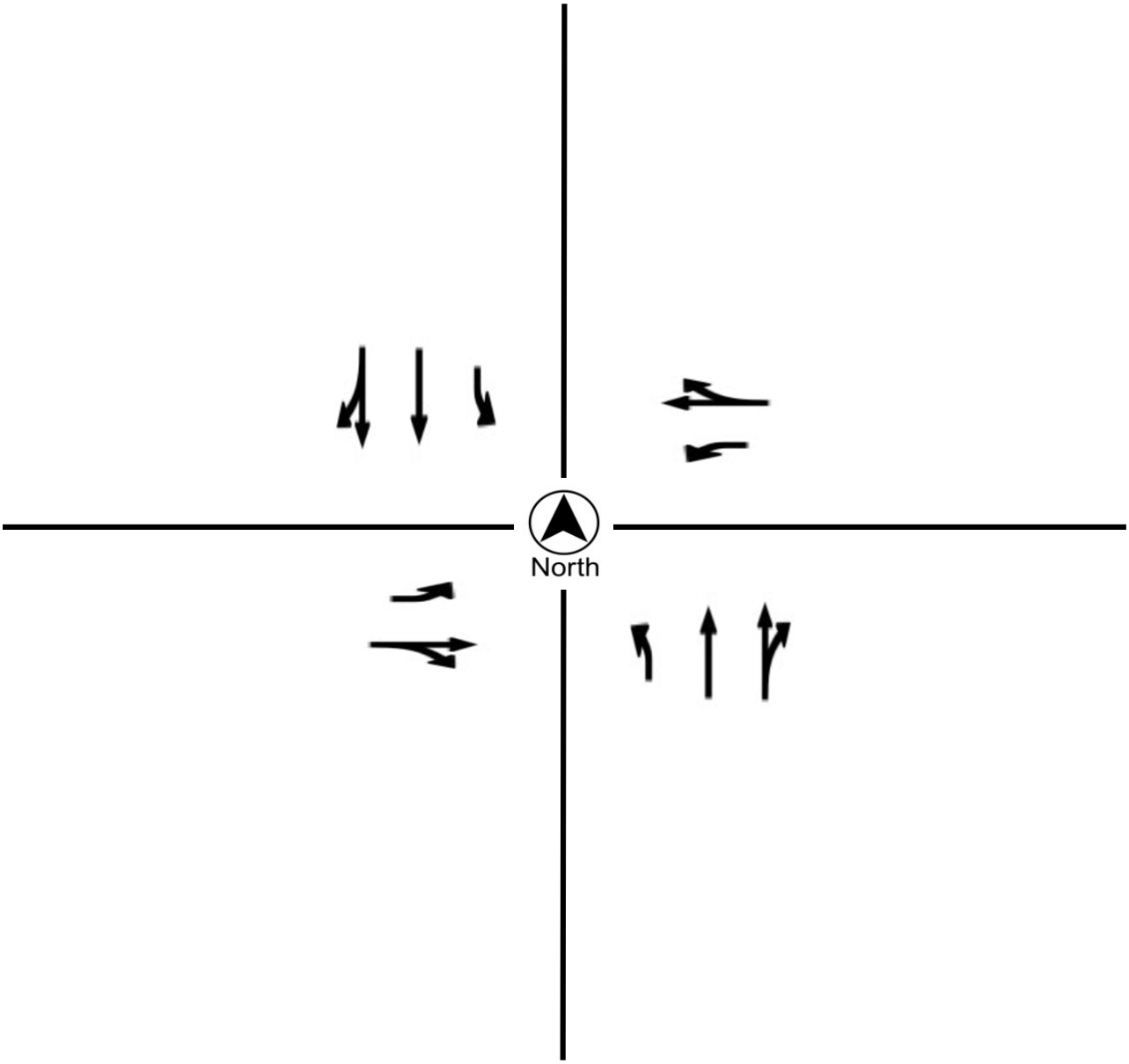
Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

LOCATION	Paige Ave/K St	**N/S STREET**	K St / K St
COUNTY	Tulare	**E/W STREET**	Paige Ave / Paige Ave
COLLECTION DATE	Tuesday, February 25, 2025	**WEATHER**	Clear
CYCLE TIME	74 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

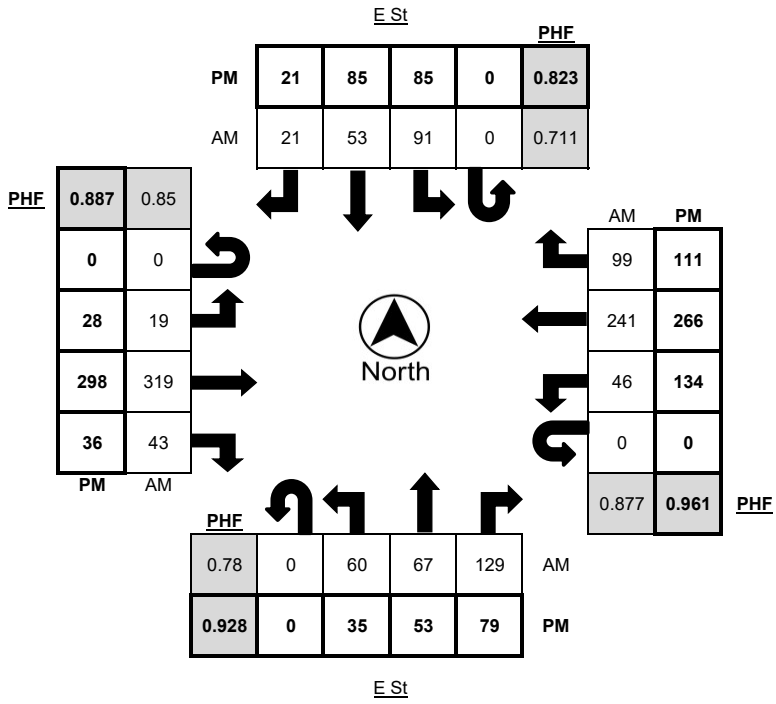
LOCATION Bardsley Ave/E St
COUNTY Tulare
COLLECTION DATE Tuesday, February 25, 2025
LATITUDE 36.1965
LONGITUDE -119.3523
WEATHER Clear

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	0	0	9	16	0	0	12	6	1	2	0	1	38	2	1	0	7	30	5	0
7:15 AM - 7:30 AM	0	7	12	27	2	0	21	3	2	1	0	3	57	1	1	0	9	46	14	2
7:30 AM - 7:45 AM	0	14	11	34	2	0	14	6	4	1	0	1	73	5	2	0	6	65	24	3
7:45 AM - 8:00 AM	0	23	24	35	2	0	25	14	6	3	0	5	91	15	4	0	9	73	28	6
8:00 AM - 8:15 AM	0	18	16	32	4	0	33	20	5	1	0	6	85	21	1	0	11	53	31	4
8:15 AM - 8:30 AM	0	5	16	28	1	0	19	13	6	0	0	7	70	2	1	0	20	50	16	3
8:30 AM - 8:45 AM	0	1	6	10	0	0	24	13	5	3	0	3	52	4	6	0	22	46	15	5
8:45 AM - 9:00 AM	0	5	11	19	1	0	19	9	4	1	0	2	34	1	1	0	10	34	6	2
TOTAL	**0**	**73**	**105**	**201**	**12**	**0**	**167**	**84**	**33**	**12**	**0**	**28**	**500**	**51**	**17**	**0**	**94**	**397**	**139**	**25**

	Northbound					Southbound					Eastbound					Westbound				
Time	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	0	12	8	24	0	0	23	28	7	0	0	9	72	9	3	0	34	54	32	2
4:15 PM - 4:30 PM	0	9	16	20	1	0	21	24	5	0	0	8	83	11	3	0	41	69	22	3
4:30 PM - 4:45 PM	0	9	17	19	0	0	19	13	2	0	0	10	78	8	2	0	25	75	33	1
4:45 PM - 5:00 PM	0	5	12	16	0	0	22	20	7	1	0	1	65	8	2	0	34	68	24	0
5:00 PM - 5:15 PM	0	8	14	22	1	0	23	20	7	0	0	2	68	13	2	0	36	63	32	1
5:15 PM - 5:30 PM	0	14	17	24	0	0	26	20	8	0	0	5	75	9	2	0	34	66	27	0
5:30 PM - 5:45 PM	0	5	11	33	0	0	29	14	5	0	0	5	76	12	2	0	29	74	22	0
5:45 PM - 6:00 PM	0	2	17	23	0	0	21	20	5	0	0	7	68	6	0	0	34	57	23	0
TOTAL	**0**	**64**	**112**	**181**	**2**	**0**	**184**	**159**	**46**	**1**	**0**	**47**	**585**	**76**	**16**	**0**	**267**	**526**	**215**	**7**

	Northbound					Southbound					Eastbound					Westbound				
PEAK HOUR	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**	**U-Turn**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	0	60	67	129	9	0	91	53	21	5	0	19	319	43	8	0	46	241	99	16
4:00 PM - 5:00 PM	0	35	53	79	1	0	85	85	21	1	0	28	298	36	10	0	134	266	111	6

	PHF	Trucks
AM	0.853	3.2%
PM	0.935	1.5%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

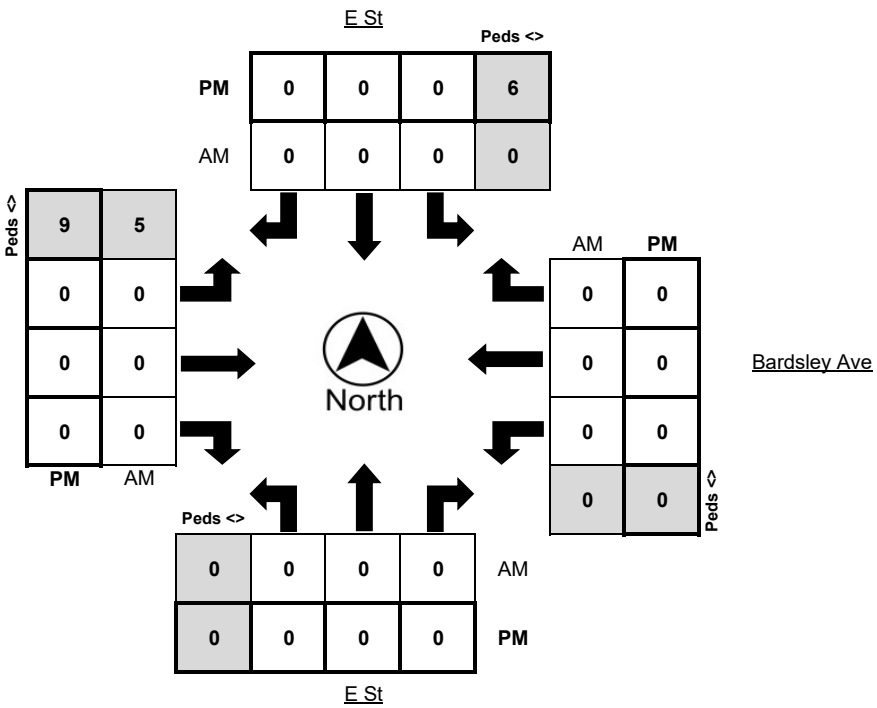
LOCATION Bardsley Ave/E St
LATITUDE 36.1965
COUNTY Tulare
LONGITUDE -119.3523
COLLECTION DATE Tuesday, February 25, 2025
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM - 9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:00 PM - 5:15 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1
TOTAL	**0**	**1**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**13**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:00 PM - 5:00 PM	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	9

	Bikes	Peds
AM Peak Total	0	5
PM Peak Total	**0**	**15**



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

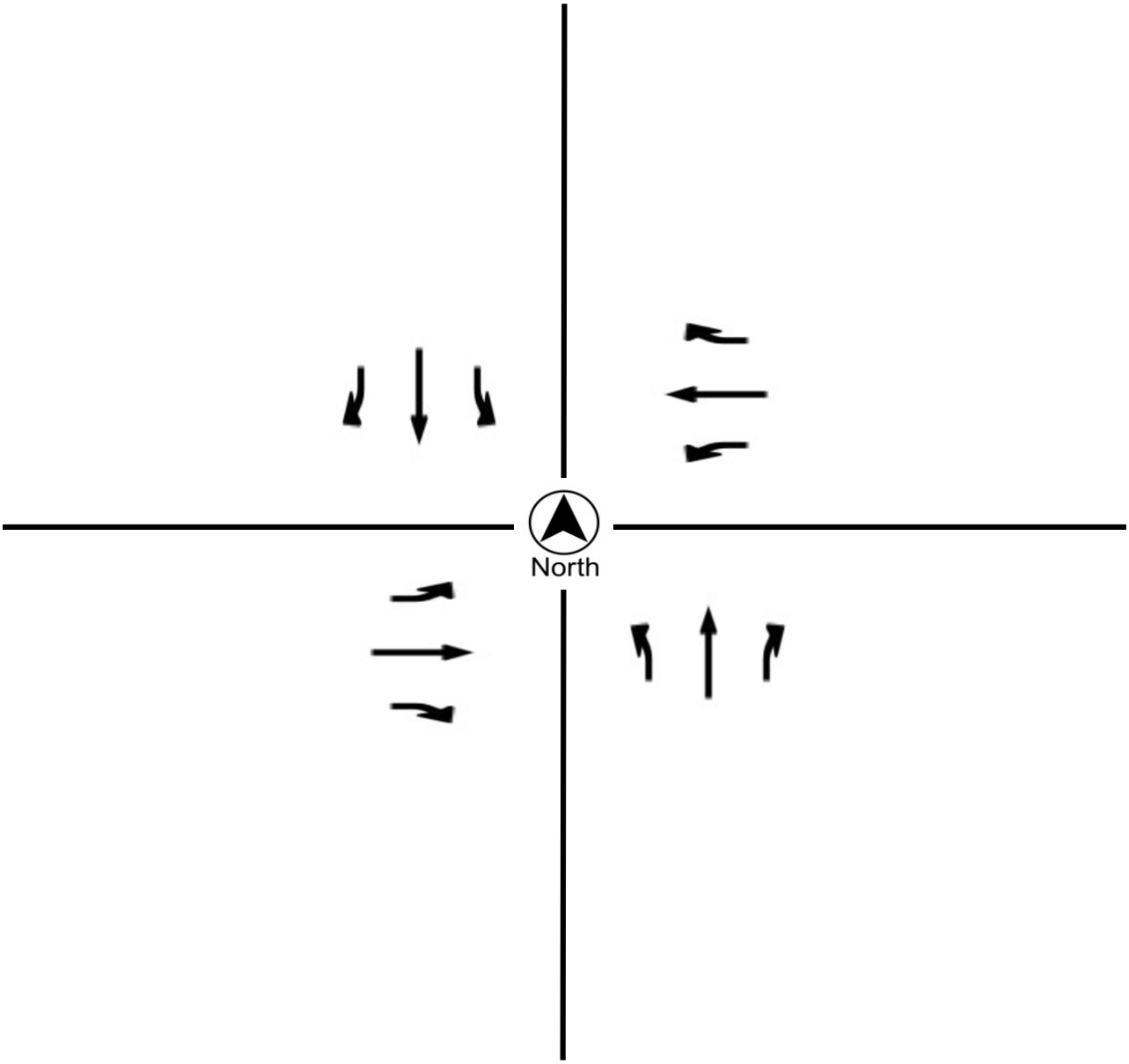
Turning Movement Report

Prepared For:

4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

LOCATION	Bardsley Ave/E St	**N/S STREET**	E St / E St
COUNTY	Tulare	**E/W STREET**	Bardsley Ave / Bardsley Ave
COLLECTION DATE	Tuesday, February 25, 2025	**WEATHER**	Clear
CYCLE TIME	75 Seconds	**CONTROL TYPE**	Signal

COMMENTS All approaches have protected left turns.



Metro Traffic Data Inc.

310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Multi-Modal Approach Counts

Prepared For:
4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

LOCATION Paige Ave/Pratt St

COUNTY Tulare

COLLECTION DATE Tuesday, February 25, 2025

LATITUDE 36.1819674

LONGITUDE -119.357733

WEATHER Clear

Time			Northbound			Southbound			Eastbound			Westbound			TOTALS	TOTALS	TOTALS	TOTALS
			Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Pedestrians	ALL
12:00 AM	to	12:15 AM	3	0	0	1	0	0	2	0	0	4	0	0	10	0	0	10
12:15 AM	to	12:30 AM	1	0	0	1	0	0	3	0	0	1	0	0	6	0	0	6
12:30 AM	to	12:45 AM	1	0	0	0	0	0	5	0	0	5	0	0	11	0	0	11
12:45 AM	to	1:00 AM	3	0	0	1	0	0	2	0	0	1	0	0	7	0	0	7
1:00 AM	to	1:15 AM	7	0	0	0	0	0	2	0	0	0	0	0	9	0	0	9
1:15 AM	to	1:30 AM	5	0	0	2	0	0	1	0	0	5	0	0	13	0	0	13
1:30 AM	to	1:45 AM	1	0	0	4	0	0	3	0	0	4	0	0	12	0	0	12
1:45 AM	to	2:00 AM	3	0	0	1	0	0	2	0	0	4	0	0	10	0	0	10
2:00 AM	to	2:15 AM	4	0	0	0	0	0	6	0	0	4	0	0	14	0	0	14
2:15 AM	to	2:30 AM	3	0	0	2	0	0	1	0	0	6	0	0	12	0	0	12
2:30 AM	to	2:45 AM	6	0	0	1	0	0	5	0	0	3	0	0	15	0	0	15
2:45 AM	to	3:00 AM	4	0	0	3	0	0	1	0	0	5	0	0	13	0	0	13
3:00 AM	to	3:15 AM	1	0	0	2	0	0	6	0	0	7	0	0	16	0	0	16
3:15 AM	to	3:30 AM	3	0	0	5	0	0	4	0	0	3	0	0	15	0	0	15
3:30 AM	to	3:45 AM	3	0	0	7	0	0	12	0	0	4	0	0	26	0	0	26
3:45 AM	to	4:00 AM	3	0	0	10	0	0	11	0	0	2	0	0	26	0	0	26
4:00 AM	to	4:15 AM	6	0	0	5	0	0	11	0	0	1	0	0	23	0	0	23
4:15 AM	to	4:30 AM	4	0	0	13	0	0	10	0	0	8	0	0	35	0	0	35
4:30 AM	to	4:45 AM	9	0	0	20	0	0	15	0	0	8	0	0	52	0	0	52
4:45 AM	to	5:00 AM	13	0	0	15	0	0	17	0	0	14	0	0	59	0	0	59
5:00 AM	to	5:15 AM	9	0	0	11	0	0	11	0	0	10	0	0	41	0	0	41
5:15 AM	to	5:30 AM	11	0	0	20	0	0	30	0	0	13	0	0	74	0	0	74
5:30 AM	to	5:45 AM	11	0	0	32	0	0	25	0	0	23	0	0	91	0	0	91
5:45 AM	to	6:00 AM	14	0	0	25	0	0	38	0	0	33	0	0	110	0	0	110
6:00 AM	to	6:15 AM	13	0	0	21	0	0	25	0	0	14	0	0	73	0	0	73
6:15 AM	to	6:30 AM	18	0	0	12	0	0	29	0	0	26	0	0	85	0	0	85
6:30 AM	to	6:45 AM	18	0	0	26	0	0	28	0	0	24	0	0	96	0	0	96
6:45 AM	to	7:00 AM	17	0	0	22	0	0	47	0	0	35	0	0	121	0	0	121
7:00 AM	to	7:15 AM	17	0	0	14	0	0	41	0	0	26	0	0	98	0	0	98
7:15 AM	to	7:30 AM	19	0	0	10	0	0	38	0	0	27	0	0	94	0	0	94
7:30 AM	to	7:45 AM	31	0	0	18	0	0	45	2	0	43	0	0	137	2	0	139
7:45 AM	to	8:00 AM	42	0	0	20	0	0	39	0	0	37	0	0	138	0	0	138
8:00 AM	to	8:15 AM	49	0	0	31	0	0	49	0	0	23	0	0	152	0	0	152
8:15 AM	to	8:30 AM	40	0	0	30	0	0	39	0	0	25	0	0	134	0	0	134
8:30 AM	to	8:45 AM	30	0	0	8	1	0	41	0	0	22	0	0	101	1	0	102
8:45 AM	to	9:00 AM	16	0	0	13	0	0	34	0	0	23	0	0	86	0	0	86
9:00 AM	to	9:15 AM	15	0	0	9	0	0	33	0	0	31	0	0	88	0	0	88

9:15 AM	**to**	**9:30 AM**	16	0	0	3	0	0	36	0	0	28	0	0	**83**	**0**	**0**	**83**
9:30 AM	**to**	**9:45 AM**	14	0	0	9	0	0	33	0	0	26	0	0	**82**	**0**	**0**	**82**
9:45 AM	**to**	**10:00 AM**	31	0	0	11	0	0	23	0	0	26	0	0	**91**	**0**	**0**	**91**
10:00 AM	**to**	**10:15 AM**	22	0	0	6	0	0	21	0	0	35	0	0	**84**	**0**	**0**	**84**
10:15 AM	**to**	**10:30 AM**	15	0	0	11	0	0	32	0	0	23	0	0	**81**	**0**	**0**	**81**
10:30 AM	**to**	**10:45 AM**	21	0	0	12	0	0	19	0	0	27	0	0	**79**	**0**	**0**	**79**
10:45 AM	**to**	**11:00 AM**	14	0	0	5	0	0	27	0	0	31	0	0	**77**	**0**	**0**	**77**
11:00 AM	**to**	**11:15 AM**	34	0	0	17	0	0	17	0	0	22	0	0	**90**	**0**	**0**	**90**
11:15 AM	**to**	**11:30 AM**	25	0	0	14	0	0	26	0	0	22	0	0	**87**	**0**	**0**	**87**
11:30 AM	**to**	**11:45 AM**	25	0	0	13	0	0	36	0	0	24	0	0	**98**	**0**	**0**	**98**
11:45 AM	**to**	**12:00 PM**	24	0	0	13	0	0	26	0	0	32	0	0	**95**	**0**	**0**	**95**
12:00 PM	**to**	**12:15 PM**	28	0	0	10	0	0	22	0	0	28	1	0	**88**	**1**	**0**	**89**
12:15 PM	**to**	**12:30 PM**	33	0	0	13	0	0	29	0	0	18	0	0	**93**	**0**	**0**	**93**
12:30 PM	**to**	**12:45 PM**	28	0	0	14	0	0	25	0	0	22	0	0	**89**	**0**	**0**	**89**
12:45 PM	**to**	**1:00 PM**	24	0	1	8	0	0	35	0	0	28	1	0	**95**	**1**	**1**	**97**
1:00 PM	**to**	**1:15 PM**	20	0	0	19	0	0	32	0	0	35	0	0	**106**	**0**	**0**	**106**
1:15 PM	**to**	**1:30 PM**	30	0	0	10	1	0	33	0	0	40	1	0	**113**	**2**	**0**	**115**
1:30 PM	**to**	**1:45 PM**	22	0	0	19	0	0	26	0	0	38	0	0	**105**	**0**	**0**	**105**
1:45 PM	**to**	**2:00 PM**	29	0	0	16	0	0	24	0	0	31	0	0	**100**	**0**	**0**	**100**
2:00 PM	**to**	**2:15 PM**	33	0	0	18	0	0	26	0	0	37	0	0	**114**	**0**	**0**	**114**
2:15 PM	**to**	**2:30 PM**	36	0	0	16	0	0	37	0	0	38	0	0	**127**	**0**	**0**	**127**
2:30 PM	**to**	**2:45 PM**	43	0	0	21	0	0	42	0	0	43	0	0	**149**	**0**	**0**	**149**
2:45 PM	**to**	**3:00 PM**	48	0	0	24	0	0	41	0	0	60	0	0	**173**	**0**	**0**	**173**
3:00 PM	**to**	**3:15 PM**	70	0	0	14	0	0	46	0	0	42	0	0	**172**	**0**	**0**	**172**
3:15 PM	**to**	**3:30 PM**	44	0	0	30	0	0	46	0	0	44	0	0	**164**	**0**	**0**	**164**
3:30 PM	**to**	**3:45 PM**	54	0	0	24	0	0	47	0	0	46	0	0	**171**	**0**	**0**	**171**
3:45 PM	**to**	**4:00 PM**	58	0	0	19	0	0	52	0	1	36	0	0	**165**	**0**	**1**	**166**
4:00 PM	**to**	**4:15 PM**	62	0	0	19	0	0	51	0	0	36	0	0	**168**	**0**	**0**	**168**
4:15 PM	**to**	**4:30 PM**	59	0	0	16	0	0	51	0	0	32	0	0	**158**	**0**	**0**	**158**
4:30 PM	**to**	**4:45 PM**	69	0	0	29	0	0	58	0	0	56	0	0	**212**	**0**	**0**	**212**
4:45 PM	**to**	**5:00 PM**	48	0	0	24	0	0	44	0	0	47	0	0	**163**	**0**	**0**	**163**
5:00 PM	**to**	**5:15 PM**	48	0	0	24	0	0	40	0	0	55	0	0	**167**	**0**	**0**	**167**
5:15 PM	**to**	**5:30 PM**	47	0	0	17	1	0	19	0	0	58	0	0	**141**	**1**	**0**	**142**
5:30 PM	**to**	**5:45 PM**	50	0	0	29	1	0	41	0	0	33	0	0	**153**	**1**	**0**	**154**
5:45 PM	**to**	**6:00 PM**	31	0	0	21	0	0	44	0	0	37	0	0	**133**	**0**	**0**	**133**
6:00 PM	**to**	**6:15 PM**	37	0	0	25	0	0	30	0	0	52	0	0	**144**	**0**	**0**	**144**
6:15 PM	**to**	**6:30 PM**	36	0	0	9	1	0	43	0	0	35	0	0	**123**	**1**	**0**	**124**
6:30 PM	**to**	**6:45 PM**	34	0	0	13	0	0	51	0	0	14	0	0	**112**	**0**	**0**	**112**
6:45 PM	**to**	**7:00 PM**	23	0	0	14	0	0	36	0	0	20	0	0	**93**	**0**	**0**	**93**
7:00 PM	**to**	**7:15 PM**	41	0	0	4	0	0	13	0	0	15	0	0	**73**	**0**	**0**	**73**
7:15 PM	**to**	**7:30 PM**	20	0	0	10	0	0	12	0	0	17	0	0	**59**	**0**	**0**	**59**
7:30 PM	**to**	**7:45 PM**	16	0	0	10	0	0	30	0	0	12	0	0	**68**	**0**	**0**	**68**
7:45 PM	**to**	**8:00 PM**	14	0	0	6	0	0	18	0	0	17	0	0	**55**	**0**	**0**	**55**
8:00 PM	**to**	**8:15 PM**	16	0	0	12	0	0	9	0	0	23	0	0	**60**	**0**	**0**	**60**
8:15 PM	**to**	**8:30 PM**	10	0	0	9	0	0	8	0	0	13	0	0	**40**	**0**	**0**	**40**
8:30 PM	**to**	**8:45 PM**	13	0	0	16	0	0	13	0	0	25	0	0	**67**	**0**	**0**	**67**
8:45 PM	**to**	**9:00 PM**	11	0	0	10	0	0	15	0	0	12	0	0	**48**	**0**	**0**	**48**
9:00 PM	**to**	**9:15 PM**	13	0	0	7	0	0	10	0	0	13	0	0	**43**	**0**	**0**	**43**
9:15 PM	**to**	**9:30 PM**	18	0	0	14	0	0	9	0	0	18	0	0	**59**	**0**	**0**	**59**
9:30 PM	**to**	**9:45 PM**	9	0	0	9	0	0	9	0	0	24	0	0	**51**	**0**	**0**	**51**
9:45 PM	**to**	**10:00 PM**	15	0	0	4	0	0	7	0	0	14	0	0	**40**	**0**	**0**	**40**
10:00 PM	**to**	**10:15 PM**	4	0	0	2	0	0	6	0	0	13	0	0	**25**	**0**	**0**	**25**
10:15 PM	**to**	**10:30 PM**	6	0	0	9	0	0	8	0	0	10	0	0	**33**	**0**	**0**	**33**
10:30 PM	**to**	**10:45 PM**	3	0	0	9	0	0	7	0	0	14	0	0	**33**	**0**	**0**	**33**
10:45 PM	**to**	**11:00 PM**	5	0	0	1	0	0	8	0	0	9	0	0	**23**	**0**	**0**	**23**

11:00 PM	to	11:15 PM	3	0	0	3	0	0	6	0	0	6	0	0	18	0	0	18
11:15 PM	to	11:30 PM	1	0	0	2	0	0	3	0	0	7	0	0	13	0	0	13
11:30 PM	to	11:45 PM	2	0	0	6	0	0	3	0	0	6	0	0	17	0	0	17
11:45 PM	to	12:00 AM	3	0	0	4	0	0	5	0	0	2	0	0	14	0	0	14
DAILY TOTALS			2061	0	1	1191	5	0	2277	2	1	2151	3	0	7680	10	2	7692

			Northbound			Southbound			Eastbound			Westbound			PH	PH	PH	PH	
PEAK HOUR			Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Pedestrians	ALL	PHF
7:30 AM	to	8:30 AM	162	0	0	99	0	0	172	2	0	128	0	0	561	2	0	563	0.93
3:45 PM	to	4:45 PM	248	0	0	83	0	0	212	0	1	160	0	0	703	0	1	704	0.83

Metro Traffic Data Inc.

310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Multi-Modal Approach Counts

Prepared For:
4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

LOCATION Paige Ave/K St

COUNTY Tulare

COLLECTION DATE Tuesday, February 25, 2025

LATITUDE 36.1820965

LONGITUDE -119.3403122

WEATHER Clear

Time			Northbound			Southbound			Eastbound			Westbound			TOTALS	TOTALS	TOTALS	TOTALS
			Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Pedestrians	ALL
12:00 AM	to	12:15 AM	2	0	0	5	0	0	5	0	0	7	0	0	19	0	0	19
12:15 AM	to	12:30 AM	2	0	0	6	0	0	5	0	0	4	0	0	17	0	0	17
12:30 AM	to	12:45 AM	3	0	0	2	0	0	3	0	0	12	0	0	20	0	0	20
12:45 AM	to	1:00 AM	3	0	0	2	0	0	4	0	0	4	0	0	13	0	0	13
1:00 AM	to	1:15 AM	2	0	0	5	0	0	2	0	0	2	0	0	11	0	0	11
1:15 AM	to	1:30 AM	4	0	0	8	0	0	2	0	0	6	0	0	20	0	0	20
1:30 AM	to	1:45 AM	4	0	0	2	0	1	4	0	0	9	0	0	19	0	1	20
1:45 AM	to	2:00 AM	6	0	0	9	0	0	1	0	0	13	0	0	29	0	0	29
2:00 AM	to	2:15 AM	1	0	0	4	0	0	6	0	0	12	0	0	23	0	0	23
2:15 AM	to	2:30 AM	4	0	0	8	0	0	3	0	0	10	0	0	25	0	0	25
2:30 AM	to	2:45 AM	2	0	0	2	0	0	5	0	0	8	0	0	17	0	0	17
2:45 AM	to	3:00 AM	3	0	0	5	0	0	2	0	0	5	0	0	15	0	0	15
3:00 AM	to	3:15 AM	3	0	0	6	0	0	4	0	0	8	0	0	21	0	0	21
3:15 AM	to	3:30 AM	6	0	0	4	0	0	3	0	0	7	0	1	20	0	1	21
3:30 AM	to	3:45 AM	2	0	0	6	0	0	8	0	0	12	0	0	28	0	0	28
3:45 AM	to	4:00 AM	6	0	0	8	0	0	13	0	0	4	0	0	31	0	0	31
4:00 AM	to	4:15 AM	8	0	0	3	0	0	5	0	0	4	0	0	20	0	0	20
4:15 AM	to	4:30 AM	8	0	0	9	0	0	7	0	0	8	0	0	32	0	0	32
4:30 AM	to	4:45 AM	7	0	0	15	0	0	15	0	0	15	0	0	52	0	0	52
4:45 AM	to	5:00 AM	8	0	0	15	0	0	21	0	0	26	0	0	70	0	0	70
5:00 AM	to	5:15 AM	11	0	0	17	0	0	16	0	0	14	1	3	58	1	3	62
5:15 AM	to	5:30 AM	13	0	0	16	0	0	30	0	0	24	0	0	83	0	0	83
5:30 AM	to	5:45 AM	8	0	0	25	0	0	21	0	0	37	0	0	91	0	0	91
5:45 AM	to	6:00 AM	21	0	0	32	0	0	32	0	0	41	0	0	126	0	0	126
6:00 AM	to	6:15 AM	14	0	0	25	0	0	29	0	0	50	0	0	118	0	0	118
6:15 AM	to	6:30 AM	18	0	0	38	0	0	35	0	0	53	0	0	144	0	0	144
6:30 AM	to	6:45 AM	27	0	0	28	0	0	35	0	0	41	0	0	131	0	0	131
6:45 AM	to	7:00 AM	31	0	0	37	0	0	42	0	0	74	0	0	184	0	0	184
7:00 AM	to	7:15 AM	24	0	0	28	0	0	31	0	0	48	0	0	131	0	0	131
7:15 AM	to	7:30 AM	29	0	0	49	0	0	40	0	0	59	0	0	177	0	0	177
7:30 AM	to	7:45 AM	32	0	0	40	0	0	38	0	0	84	0	0	194	0	0	194
7:45 AM	to	8:00 AM	45	0	0	45	0	0	61	2	0	77	0	0	228	2	0	230
8:00 AM	to	8:15 AM	46	0	0	45	0	0	48	0	0	57	0	0	196	0	0	196
8:15 AM	to	8:30 AM	42	0	0	54	0	1	61	0	0	53	0	0	210	0	1	211
8:30 AM	to	8:45 AM	43	0	0	61	0	1	49	0	0	64	0	0	217	0	1	218
8:45 AM	to	9:00 AM	30	0	0	50	0	0	40	0	0	44	0	0	164	0	0	164
9:00 AM	to	9:15 AM	44	0	0	47	0	0	51	1	0	40	0	0	182	1	0	183

9:15 AM	**to**	**9:30 AM**	54	0	0	50	0	0	42	0	0	46	0	0	**192**	**0**	**0**	**192**
9:30 AM	**to**	**9:45 AM**	43	0	0	48	0	0	33	0	0	49	0	0	**173**	**0**	**0**	**173**
9:45 AM	**to**	**10:00 AM**	54	0	0	38	0	0	38	0	0	43	0	0	**173**	**0**	**0**	**173**
10:00 AM	**to**	**10:15 AM**	60	0	0	58	0	0	31	0	0	58	1	0	**207**	**1**	**0**	**208**
10:15 AM	**to**	**10:30 AM**	37	0	0	48	0	1	36	0	0	38	0	0	**159**	**0**	**1**	**160**
10:30 AM	**to**	**10:45 AM**	41	0	0	37	0	0	37	0	0	40	0	0	**155**	**0**	**0**	**155**
10:45 AM	**to**	**11:00 AM**	38	0	0	49	0	0	24	0	0	58	0	0	**169**	**0**	**0**	**169**
11:00 AM	**to**	**11:15 AM**	49	0	0	30	0	0	32	0	0	55	0	0	**166**	**0**	**0**	**166**
11:15 AM	**to**	**11:30 AM**	47	0	0	45	0	0	35	0	0	43	1	0	**170**	**1**	**0**	**171**
11:30 AM	**to**	**11:45 AM**	59	0	0	52	0	1	48	0	0	39	0	0	**198**	**0**	**1**	**199**
11:45 AM	**to**	**12:00 PM**	64	0	0	48	0	0	31	1	0	55	0	0	**198**	**1**	**0**	**199**
12:00 PM	**to**	**12:15 PM**	64	0	0	70	0	0	43	0	0	50	0	0	**227**	**0**	**0**	**227**
12:15 PM	**to**	**12:30 PM**	51	0	0	47	0	0	39	0	0	57	0	0	**194**	**0**	**0**	**194**
12:30 PM	**to**	**12:45 PM**	34	0	0	55	0	0	25	0	0	50	0	0	**164**	**0**	**0**	**164**
12:45 PM	**to**	**1:00 PM**	40	0	0	54	0	0	50	0	0	54	0	0	**198**	**0**	**0**	**198**
1:00 PM	**to**	**1:15 PM**	56	0	0	54	0	0	42	0	0	47	0	0	**199**	**0**	**0**	**199**
1:15 PM	**to**	**1:30 PM**	36	0	0	64	0	0	40	0	0	59	0	0	**199**	**0**	**0**	**199**
1:30 PM	**to**	**1:45 PM**	47	0	0	70	0	0	30	0	0	79	0	0	**226**	**0**	**0**	**226**
1:45 PM	**to**	**2:00 PM**	40	0	0	58	0	0	40	0	0	63	0	1	**201**	**0**	**1**	**202**
2:00 PM	**to**	**2:15 PM**	45	0	0	55	0	0	42	0	0	56	0	1	**198**	**0**	**1**	**199**
2:15 PM	**to**	**2:30 PM**	49	0	0	52	0	0	42	0	0	63	0	0	**206**	**0**	**0**	**206**
2:30 PM	**to**	**2:45 PM**	61	0	0	48	0	0	51	0	0	68	0	0	**228**	**0**	**0**	**228**
2:45 PM	**to**	**3:00 PM**	53	0	0	65	1	0	48	0	0	81	0	0	**247**	**1**	**0**	**248**
3:00 PM	**to**	**3:15 PM**	52	0	0	61	0	0	59	0	1	57	1	0	**229**	**1**	**1**	**231**
3:15 PM	**to**	**3:30 PM**	69	0	0	50	0	0	63	0	0	79	0	0	**261**	**0**	**0**	**261**
3:30 PM	**to**	**3:45 PM**	88	0	0	62	0	0	57	1	0	73	0	0	**280**	**1**	**0**	**281**
3:45 PM	**to**	**4:00 PM**	61	0	0	49	0	0	58	0	0	66	0	0	**234**	**0**	**0**	**234**
4:00 PM	**to**	**4:15 PM**	56	0	0	50	0	0	58	1	0	62	0	0	**226**	**1**	**0**	**227**
4:15 PM	**to**	**4:30 PM**	56	0	0	43	0	0	59	2	0	66	1	0	**224**	**3**	**0**	**227**
4:30 PM	**to**	**4:45 PM**	64	0	0	58	0	0	72	0	0	62	0	0	**256**	**0**	**0**	**256**
4:45 PM	**to**	**5:00 PM**	52	0	0	44	0	1	49	0	0	60	2	0	**205**	**2**	**1**	**208**
5:00 PM	**to**	**5:15 PM**	74	0	0	34	0	0	42	1	0	67	0	0	**217**	**1**	**0**	**218**
5:15 PM	**to**	**5:30 PM**	39	0	0	25	0	0	35	0	0	71	0	0	**170**	**0**	**0**	**170**
5:30 PM	**to**	**5:45 PM**	31	0	0	57	0	0	45	0	1	58	0	0	**191**	**0**	**1**	**192**
5:45 PM	**to**	**6:00 PM**	31	0	0	28	0	0	43	0	0	61	0	1	**163**	**0**	**1**	**164**
6:00 PM	**to**	**6:15 PM**	25	0	0	46	0	0	37	0	0	56	0	1	**164**	**0**	**1**	**165**
6:15 PM	**to**	**6:30 PM**	22	0	0	32	0	0	41	0	0	51	0	0	**146**	**0**	**0**	**146**
6:30 PM	**to**	**6:45 PM**	14	0	0	36	0	0	54	0	0	38	0	0	**142**	**0**	**0**	**142**
6:45 PM	**to**	**7:00 PM**	20	0	0	26	0	0	47	0	0	35	0	0	**128**	**0**	**0**	**128**
7:00 PM	**to**	**7:15 PM**	10	0	0	27	0	0	26	0	0	20	0	0	**83**	**0**	**0**	**83**
7:15 PM	**to**	**7:30 PM**	15	0	0	19	0	0	15	0	0	31	0	0	**80**	**0**	**0**	**80**
7:30 PM	**to**	**7:45 PM**	12	0	0	20	0	0	22	1	0	26	0	1	**80**	**1**	**1**	**82**
7:45 PM	**to**	**8:00 PM**	5	0	0	32	0	0	23	0	0	25	0	2	**85**	**0**	**2**	**87**
8:00 PM	**to**	**8:15 PM**	11	0	0	25	0	0	24	0	0	39	0	0	**99**	**0**	**0**	**99**
8:15 PM	**to**	**8:30 PM**	8	0	0	19	0	0	16	0	0	31	0	0	**74**	**0**	**0**	**74**
8:30 PM	**to**	**8:45 PM**	11	0	0	27	0	0	18	0	0	43	0	0	**99**	**0**	**0**	**99**
8:45 PM	**to**	**9:00 PM**	8	0	0	30	0	0	20	0	0	15	0	0	**73**	**0**	**0**	**73**
9:00 PM	**to**	**9:15 PM**	9	0	0	15	0	0	16	0	0	21	1	0	**61**	**1**	**0**	**62**
9:15 PM	**to**	**9:30 PM**	7	0	0	20	0	0	15	0	0	84	0	0	**126**	**0**	**0**	**126**
9:30 PM	**to**	**9:45 PM**	6	0	0	33	2	0	13	0	0	105	0	0	**157**	**2**	**0**	**159**
9:45 PM	**to**	**10:00 PM**	6	0	0	42	0	0	15	0	0	80	0	0	**143**	**0**	**0**	**143**
10:00 PM	**to**	**10:15 PM**	4	0	0	41	0	0	6	0	2	106	0	1	**157**	**0**	**3**	**160**
10:15 PM	**to**	**10:30 PM**	6	0	0	35	0	0	10	0	2	76	0	0	**127**	**0**	**2**	**129**
10:30 PM	**to**	**10:45 PM**	6	0	0	31	0	0	9	0	0	105	0	0	**151**	**0**	**0**	**151**
10:45 PM	**to**	**11:00 PM**	6	0	0	23	0	0	7	0	0	100	0	0	**136**	**0**	**0**	**136**

11:00 PM	to	11:15 PM	3	0	0	16	0	0	5	0	0	93	0	0	117	0	0	117
11:15 PM	to	11:30 PM	5	0	0	13	0	0	7	0	0	71	0	0	96	0	0	96
11:30 PM	to	11:45 PM	5	0	0	3	0	0	5	0	0	68	0	0	81	0	0	81
11:45 PM	to	12:00 AM	2	0	0	10	0	0	6	0	0	56	0	0	74	0	0	74
DAILY TOTALS			2583	0	0	3138	3	6	2753	10	6	4444	8	12	12918	21	24	12963

			Northbound			Southbound			Eastbound			Westbound			PH	PH	PH	PH	
PEAK HOUR			Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Pedestrians	ALL	PHF
7:45 AM	to	8:45 AM	176	0	0	205	0	2	219	2	0	251	0	0	851	2	2	855	0.93
2:45 PM	to	3:45 PM	262	0	0	238	1	0	227	1	1	290	1	0	1017	3	1	1021	0.91

Metro Traffic Data Inc.

310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Multi-Modal Approach Counts

Prepared For:
4-Creeks, Inc.
324 S Santa Fe St
Visalia, CA 93292

LOCATION Bardsley Ave/E St

COUNTY Tulare

COLLECTION DATE Tuesday, February 25, 2025

LATITUDE 36.1964919

LONGITUDE -119.3522842

WEATHER Clear

Time			Northbound			Southbound			Eastbound			Westbound			TOTALS	TOTALS	TOTALS	TOTALS
			Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Pedestrians	ALL
12:00 AM	to	12:15 AM	2	0	0	5	0	0	5	0	0	7	0	0	19	0	0	19
12:15 AM	to	12:30 AM	2	0	0	6	0	0	5	0	0	4	0	0	17	0	0	17
12:30 AM	to	12:45 AM	3	0	0	2	0	0	3	0	0	12	0	0	20	0	0	20
12:45 AM	to	1:00 AM	3	0	0	2	0	0	4	0	0	4	0	0	13	0	0	13
1:00 AM	to	1:15 AM	2	0	0	5	0	0	2	0	0	2	0	0	11	0	0	11
1:15 AM	to	1:30 AM	4	0	0	8	0	0	2	0	0	6	0	0	20	0	0	20
1:30 AM	to	1:45 AM	4	0	0	2	0	1	4	0	0	9	0	0	19	0	1	20
1:45 AM	to	2:00 AM	6	0	0	9	0	0	1	0	0	13	0	0	29	0	0	29
2:00 AM	to	2:15 AM	1	0	0	4	0	0	6	0	0	12	0	0	23	0	0	23
2:15 AM	to	2:30 AM	4	0	0	8	0	0	3	0	0	10	0	0	25	0	0	25
2:30 AM	to	2:45 AM	2	0	0	2	0	0	5	0	0	8	0	0	17	0	0	17
2:45 AM	to	3:00 AM	3	0	0	5	0	0	2	0	0	5	0	0	15	0	0	15
3:00 AM	to	3:15 AM	3	0	0	6	0	0	4	0	0	8	0	0	21	0	0	21
3:15 AM	to	3:30 AM	6	0	0	4	0	0	3	0	0	7	0	1	20	0	1	21
3:30 AM	to	3:45 AM	2	0	0	6	0	0	8	0	0	12	0	0	28	0	0	28
3:45 AM	to	4:00 AM	6	0	0	8	0	0	13	0	0	4	0	0	31	0	0	31
4:00 AM	to	4:15 AM	8	0	0	3	0	0	5	0	0	4	0	0	20	0	0	20
4:15 AM	to	4:30 AM	8	0	0	9	0	0	7	0	0	8	0	0	32	0	0	32
4:30 AM	to	4:45 AM	7	0	0	15	0	0	15	0	0	15	0	0	52	0	0	52
4:45 AM	to	5:00 AM	8	0	0	15	0	0	21	0	0	26	0	0	70	0	0	70
5:00 AM	to	5:15 AM	11	0	0	17	0	0	16	0	0	14	1	3	58	1	3	62
5:15 AM	to	5:30 AM	13	0	0	16	0	0	30	0	0	24	0	0	83	0	0	83
5:30 AM	to	5:45 AM	8	0	0	25	0	0	21	0	0	37	0	0	91	0	0	91
5:45 AM	to	6:00 AM	21	0	0	32	0	0	32	0	0	41	0	0	126	0	0	126
6:00 AM	to	6:15 AM	14	0	0	25	0	0	29	0	0	50	0	0	118	0	0	118
6:15 AM	to	6:30 AM	18	0	0	38	0	0	35	0	0	53	0	0	144	0	0	144
6:30 AM	to	6:45 AM	27	0	0	28	0	0	35	0	0	41	0	0	131	0	0	131
6:45 AM	to	7:00 AM	31	0	0	37	0	0	42	0	0	74	0	0	184	0	0	184
7:00 AM	to	7:15 AM	24	0	0	28	0	0	31	0	0	48	0	0	131	0	0	131
7:15 AM	to	7:30 AM	29	0	0	49	0	0	40	0	0	59	0	0	177	0	0	177
7:30 AM	to	7:45 AM	32	0	0	40	0	0	38	0	0	84	0	0	194	0	0	194
7:45 AM	to	8:00 AM	45	0	0	45	0	0	61	2	0	77	0	0	228	2	0	230
8:00 AM	to	8:15 AM	46	0	0	45	0	0	48	0	0	57	0	0	196	0	0	196
8:15 AM	to	8:30 AM	42	0	0	54	0	1	61	0	0	53	0	0	210	0	1	211
8:30 AM	to	8:45 AM	43	0	0	61	0	1	49	0	0	64	0	0	217	0	1	218
8:45 AM	to	9:00 AM	30	0	0	50	0	0	40	0	0	44	0	0	164	0	0	164
9:00 AM	to	9:15 AM	44	0	0	47	0	0	51	1	0	40	0	0	182	1	0	183

9:15 AM	**to**	**9:30 AM**	54	0	0	50	0	0	42	0	0	46	0	0	**192**	**0**	**0**	**192**
9:30 AM	**to**	**9:45 AM**	43	0	0	48	0	0	33	0	0	49	0	0	**173**	**0**	**0**	**173**
9:45 AM	**to**	**10:00 AM**	54	0	0	38	0	0	38	0	0	43	0	0	**173**	**0**	**0**	**173**
10:00 AM	**to**	**10:15 AM**	60	0	0	58	0	0	31	0	0	58	1	0	**207**	**1**	**0**	**208**
10:15 AM	**to**	**10:30 AM**	37	0	0	48	0	1	36	0	0	38	0	0	**159**	**0**	**1**	**160**
10:30 AM	**to**	**10:45 AM**	41	0	0	37	0	0	37	0	0	40	0	0	**155**	**0**	**0**	**155**
10:45 AM	**to**	**11:00 AM**	38	0	0	49	0	0	24	0	0	58	0	0	**169**	**0**	**0**	**169**
11:00 AM	**to**	**11:15 AM**	49	0	0	30	0	0	32	0	0	55	0	0	**166**	**0**	**0**	**166**
11:15 AM	**to**	**11:30 AM**	47	0	0	45	0	0	35	0	0	43	1	0	**170**	**1**	**0**	**171**
11:30 AM	**to**	**11:45 AM**	59	0	0	52	0	1	48	0	0	39	0	0	**198**	**0**	**1**	**199**
11:45 AM	**to**	**12:00 PM**	64	0	0	48	0	0	31	1	0	55	0	0	**198**	**1**	**0**	**199**
12:00 PM	**to**	**12:15 PM**	64	0	0	70	0	0	43	0	0	50	0	0	**227**	**0**	**0**	**227**
12:15 PM	**to**	**12:30 PM**	51	0	0	47	0	0	39	0	0	57	0	0	**194**	**0**	**0**	**194**
12:30 PM	**to**	**12:45 PM**	34	0	0	55	0	0	25	0	0	50	0	0	**164**	**0**	**0**	**164**
12:45 PM	**to**	**1:00 PM**	40	0	0	54	0	0	50	0	0	54	0	0	**198**	**0**	**0**	**198**
1:00 PM	**to**	**1:15 PM**	56	0	0	54	0	0	42	0	0	47	0	0	**199**	**0**	**0**	**199**
1:15 PM	**to**	**1:30 PM**	36	0	0	64	0	0	40	0	0	59	0	0	**199**	**0**	**0**	**199**
1:30 PM	**to**	**1:45 PM**	47	0	0	70	0	0	30	0	0	79	0	0	**226**	**0**	**0**	**226**
1:45 PM	**to**	**2:00 PM**	40	0	0	58	0	0	40	0	0	63	0	1	**201**	**0**	**1**	**202**
2:00 PM	**to**	**2:15 PM**	45	0	0	55	0	0	42	0	0	56	0	1	**198**	**0**	**1**	**199**
2:15 PM	**to**	**2:30 PM**	49	0	0	52	0	0	42	0	0	63	0	0	**206**	**0**	**0**	**206**
2:30 PM	**to**	**2:45 PM**	61	0	0	48	0	0	51	0	0	68	0	0	**228**	**0**	**0**	**228**
2:45 PM	**to**	**3:00 PM**	53	0	0	65	1	0	48	0	0	81	0	0	**247**	**1**	**0**	**248**
3:00 PM	**to**	**3:15 PM**	52	0	0	61	0	0	59	0	1	57	1	0	**229**	**1**	**1**	**231**
3:15 PM	**to**	**3:30 PM**	69	0	0	50	0	0	63	0	0	79	0	0	**261**	**0**	**0**	**261**
3:30 PM	**to**	**3:45 PM**	88	0	0	62	0	0	57	1	0	73	0	0	**280**	**1**	**0**	**281**
3:45 PM	**to**	**4:00 PM**	61	0	0	49	0	0	58	0	0	66	0	0	**234**	**0**	**0**	**234**
4:00 PM	**to**	**4:15 PM**	56	0	0	50	0	0	58	1	0	62	0	0	**226**	**1**	**0**	**227**
4:15 PM	**to**	**4:30 PM**	56	0	0	43	0	0	59	2	0	66	1	0	**224**	**3**	**0**	**227**
4:30 PM	**to**	**4:45 PM**	64	0	0	58	0	0	72	0	0	62	0	0	**256**	**0**	**0**	**256**
4:45 PM	**to**	**5:00 PM**	52	0	0	44	0	1	49	0	0	60	2	0	**205**	**2**	**1**	**208**
5:00 PM	**to**	**5:15 PM**	74	0	0	34	0	0	42	1	0	67	0	0	**217**	**1**	**0**	**218**
5:15 PM	**to**	**5:30 PM**	39	0	0	25	0	0	35	0	0	71	0	0	**170**	**0**	**0**	**170**
5:30 PM	**to**	**5:45 PM**	31	0	0	57	0	0	45	0	1	58	0	0	**191**	**0**	**1**	**192**
5:45 PM	**to**	**6:00 PM**	31	0	0	28	0	0	43	0	0	61	0	1	**163**	**0**	**1**	**164**
6:00 PM	**to**	**6:15 PM**	25	0	0	46	0	0	37	0	0	56	0	1	**164**	**0**	**1**	**165**
6:15 PM	**to**	**6:30 PM**	22	0	0	32	0	0	41	0	0	51	0	0	**146**	**0**	**0**	**146**
6:30 PM	**to**	**6:45 PM**	14	0	0	36	0	0	54	0	0	38	0	0	**142**	**0**	**0**	**142**
6:45 PM	**to**	**7:00 PM**	20	0	0	26	0	0	47	0	0	35	0	0	**128**	**0**	**0**	**128**
7:00 PM	**to**	**7:15 PM**	10	0	0	27	0	0	26	0	0	20	0	0	**83**	**0**	**0**	**83**
7:15 PM	**to**	**7:30 PM**	15	0	0	19	0	0	15	0	0	31	0	0	**80**	**0**	**0**	**80**
7:30 PM	**to**	**7:45 PM**	12	0	0	20	0	0	22	1	0	26	0	1	**80**	**1**	**1**	**82**
7:45 PM	**to**	**8:00 PM**	5	0	0	32	0	0	23	0	0	25	0	2	**85**	**0**	**2**	**87**
8:00 PM	**to**	**8:15 PM**	11	0	0	25	0	0	24	0	0	39	0	0	**99**	**0**	**0**	**99**
8:15 PM	**to**	**8:30 PM**	8	0	0	19	0	0	16	0	0	31	0	0	**74**	**0**	**0**	**74**
8:30 PM	**to**	**8:45 PM**	11	0	0	27	0	0	18	0	0	43	0	0	**99**	**0**	**0**	**99**
8:45 PM	**to**	**9:00 PM**	8	0	0	30	0	0	20	0	0	15	0	0	**73**	**0**	**0**	**73**
9:00 PM	**to**	**9:15 PM**	9	0	0	15	0	0	16	0	0	21	1	0	**61**	**1**	**0**	**62**
9:15 PM	**to**	**9:30 PM**	7	0	0	20	0	0	15	0	0	84	0	0	**126**	**0**	**0**	**126**
9:30 PM	**to**	**9:45 PM**	6	0	0	33	2	0	13	0	0	105	0	0	**157**	**2**	**0**	**159**
9:45 PM	**to**	**10:00 PM**	6	0	0	42	0	0	15	0	0	80	0	0	**143**	**0**	**0**	**143**
10:00 PM	**to**	**10:15 PM**	4	0	0	41	0	0	6	0	2	106	0	1	**157**	**0**	**3**	**160**
10:15 PM	**to**	**10:30 PM**	6	0	0	35	0	0	10	0	2	76	0	0	**127**	**0**	**2**	**129**
10:30 PM	**to**	**10:45 PM**	6	0	0	31	0	0	9	0	0	105	0	0	**151**	**0**	**0**	**151**
10:45 PM	**to**	**11:00 PM**	6	0	0	23	0	0	7	0	0	100	0	0	**136**	**0**	**0**	**136**

11:00 PM	to	11:15 PM	3	0	0	16	0	0	5	0	0	93	0	0	117	0	0	117
11:15 PM	to	11:30 PM	5	0	0	13	0	0	7	0	0	71	0	0	96	0	0	96
11:30 PM	to	11:45 PM	5	0	0	3	0	0	5	0	0	68	0	0	81	0	0	81
11:45 PM	to	12:00 AM	2	0	0	10	0	0	6	0	0	56	0	0	74	0	0	74
DAILY TOTALS			2583	0	0	3138	3	6	2753	10	6	4444	8	12	12918	21	24	12963

			Northbound			Southbound			Eastbound			Westbound			PH	PH	PH	PH	
PEAK HOUR			Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Peds	Vehicles	Bicycles	Pedestrians	ALL	PHF
7:45 AM	to	8:45 AM	176	0	0	205	0	2	219	2	0	251	0	0	851	2	2	855	0.93
2:45 PM	to	3:45 PM	262	0	0	238	1	0	227	1	1	290	1	0	1017	3	1	1021	0.91

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

24 Hour Count Report

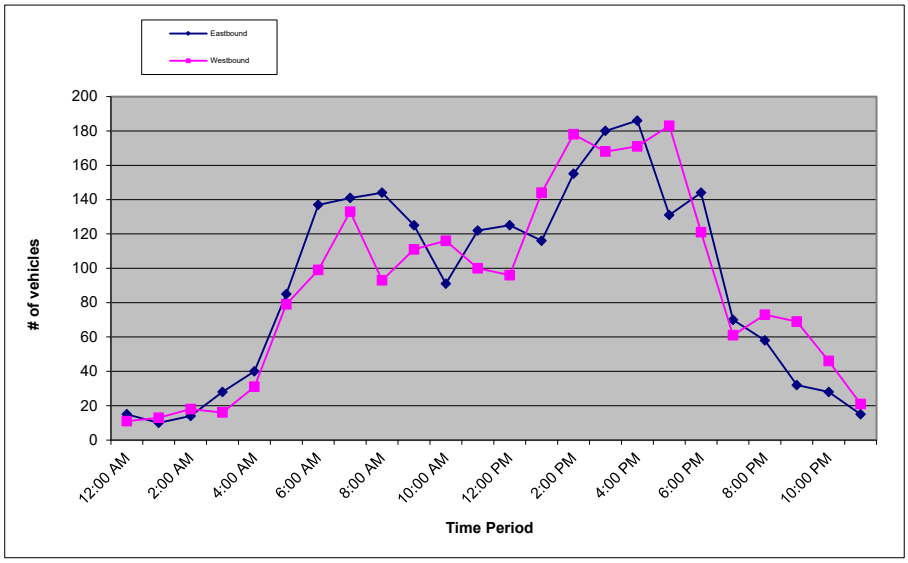
Prepared For: **4-Creeks, Inc.**
324 S Santa Fe St
Visalia, CA 93292

STREET Paige Ave
SEGMENT between Pratt and I St
COLLECTION DATE Tuesday, February 25, 2025
NUMBER OF LANES 2

LATITUDE 36.181988°
LONGITUDE -119.357121°
WEATHER Clear

	Eastbound					Westbound					Hourly
Hour	1st	2nd	3rd	4th	**Total**	1st	2nd	3rd	4th	**Total**	**Totals**
12:00 AM	4	4	4	3	**15**	4	1	5	1	**11**	**26**
1:00 AM	2	2	4	2	**10**	0	5	4	4	**13**	**23**
2:00 AM	5	2	5	2	**14**	4	6	3	5	**18**	**32**
3:00 AM	2	4	8	14	**28**	7	3	4	2	**16**	**44**
4:00 AM	5	7	13	15	**40**	1	8	8	14	**31**	**71**
5:00 AM	10	25	19	31	**85**	10	13	23	33	**79**	**164**
6:00 AM	27	30	30	50	**137**	14	26	24	35	**99**	**236**
7:00 AM	27	35	40	39	**141**	26	27	43	37	**133**	**274**
8:00 AM	39	40	37	28	**144**	23	25	22	23	**93**	**237**
9:00 AM	36	31	30	28	**125**	31	28	26	26	**111**	**236**
10:00 AM	22	31	17	21	**91**	35	23	27	31	**116**	**207**
11:00 AM	29	30	37	26	**122**	22	22	24	32	**100**	**222**
12:00 PM	29	34	28	34	**125**	28	18	22	28	**96**	**221**
1:00 PM	33	33	23	27	**116**	35	40	38	31	**144**	**260**
2:00 PM	29	34	43	49	**155**	37	38	43	60	**178**	**333**
3:00 PM	43	46	45	46	**180**	42	44	46	36	**168**	**348**
4:00 PM	45	37	59	45	**186**	36	32	56	47	**171**	**357**
5:00 PM	33	23	35	40	**131**	55	58	33	37	**183**	**314**
6:00 PM	31	34	46	33	**144**	52	35	14	20	**121**	**265**
7:00 PM	15	12	20	23	**70**	15	17	12	17	**61**	**131**
8:00 PM	11	10	15	22	**58**	23	13	25	12	**73**	**131**
9:00 PM	9	7	8	8	**32**	13	18	24	14	**69**	**101**
10:00 PM	8	8	5	7	**28**	13	10	14	9	**46**	**74**
11:00 PM	4	3	3	5	**15**	6	7	6	2	**21**	**36**
Total	**50.5%**				**2192**	**49.5%**				**2151**	
	4343										

AM%	**40.8%**	**AM Peak**	**286**	**7:30 am to 8:30 am**	**AM P.H.F.**	**0.86**
PM%	**59.2%**	**PM Peak**	**376**	**4:30 pm to 5:30 pm**	**PM P.H.F.**	**0.82**



This page intentionally left blank.

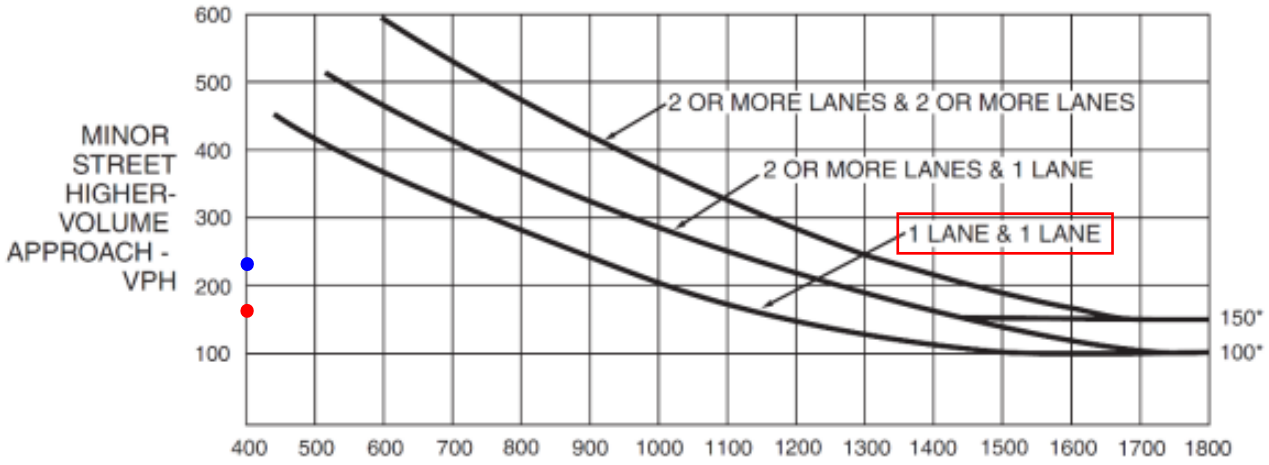
Appendix D
Signal Warrant 3 Worksheets

LEGEND:

- AM Peak Hour
- PM Peak Hour

EXISTING CONDITIONS

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

1) W. PAIGE AVE. / S. PRATT ST.

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

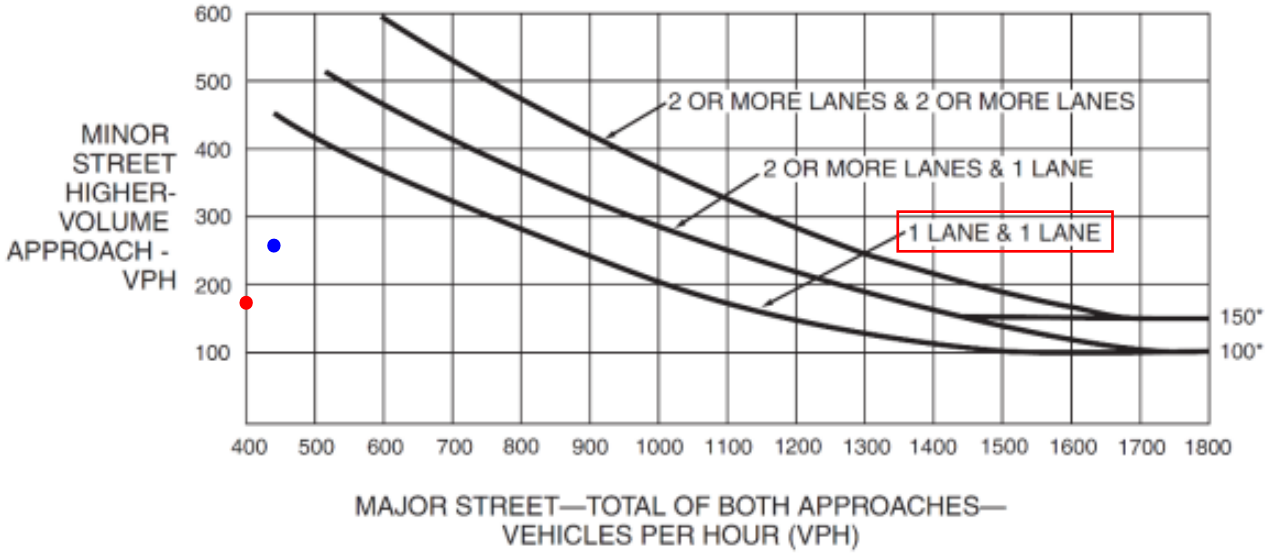
\\Server\projects\Projects\2024\240767\240767\ACAD\EXHIBITS\240767_TIA Exhibits.dwg

LEGEND:

- AM Peak Hour
- PM Peak Hour

OPENING YEAR (2027) WITHOUT PROJECT CONDITIONS

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

1) W. PAIGE AVE. / S. PRATT ST.

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

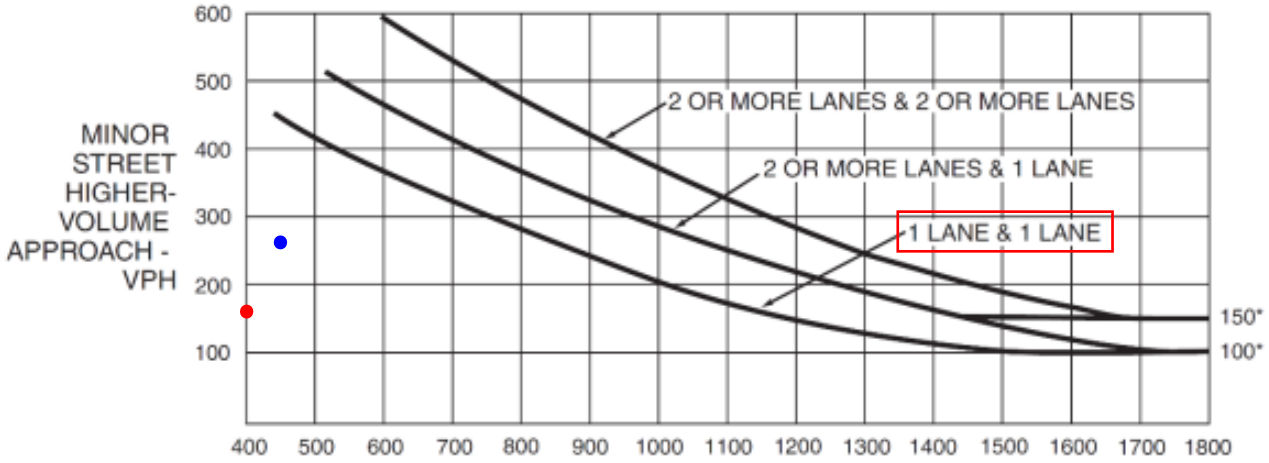
\\Server\projects\Projects\2024\240767\240767\ACAD\EXHIBITS\240767_TIA Exhibits.dwg

LEGEND:

- AM Peak Hour
- PM Peak Hour

OPENING YEAR (2027) PLUS PROJECT CONDITIONS

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

1) W. PAIGE AVE. / S. PRATT ST.

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

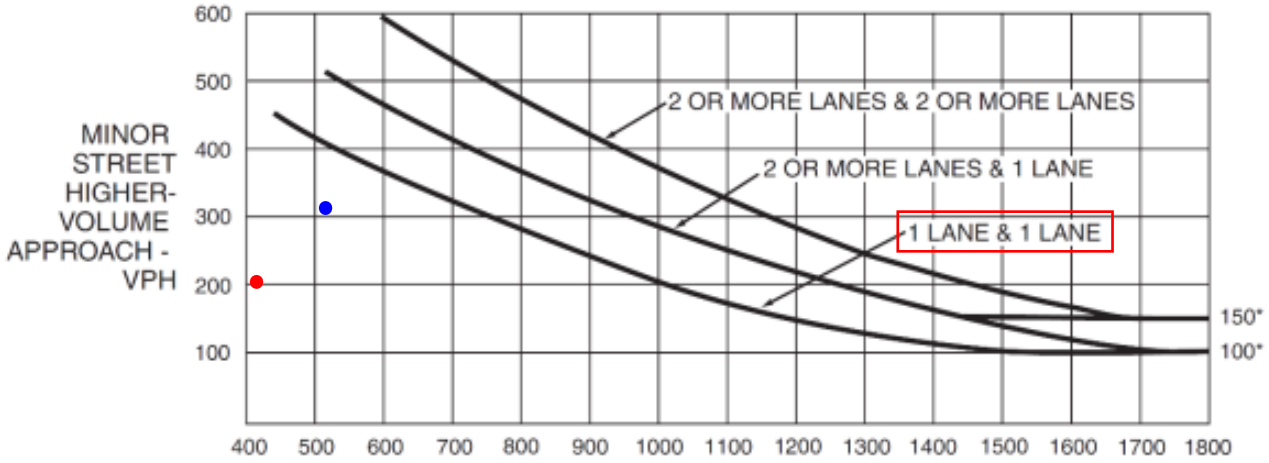
\\Server\projects\Projects\2024\240767\240767\ACAD\EXHIBITS\240767_TIA Exhibits.dwg

LEGEND:

- AM Peak Hour
- PM Peak Hour

10-YEAR HORIZON (YEAR 2035) WITHOUT PROJECT CONDITIONS

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

1) W. PAIGE AVE. / S. PRATT ST.

PREPARED BY:

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

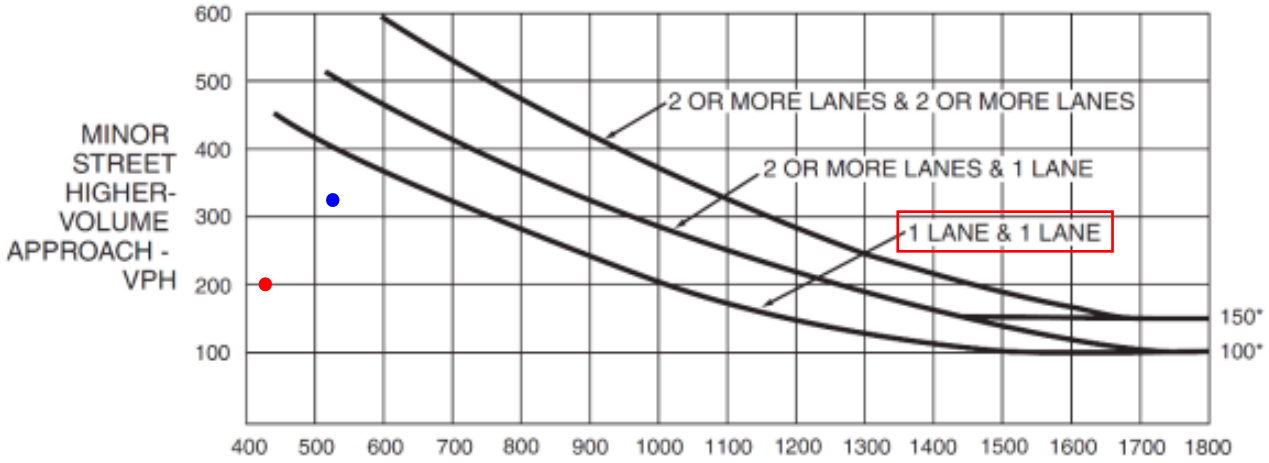
\\Server\projects\Projects\2024\240767\240767\ACAD\EXHIBITS\240767_TIA Exhibits.dwg

LEGEND:

- AM Peak Hour
- PM Peak Hour

10-YEAR HORIZON (YEAR 2035) PLUS PROJECT CONDITIONS

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

1) W. PAIGE AVE. / S. PRATT ST.

PREPARED BY:

4CREEKS

324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

\\Server\projects\Projects\2024\240767\240767\ACAD\EXHIBITS\240767_TIA Exhibits.dwg

This page intentionally left blank.

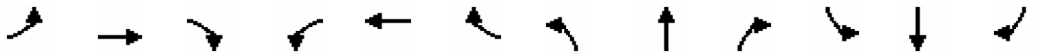
Appendix E
Existing Conditions Worksheets

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	107	48	21	88	19	46	78	38	13	74	12
Future Vol, veh/h	17	107	48	21	88	19	46	78	38	13	74	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	18	116	52	23	96	21	50	85	41	14	80	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.4	9.1	9.4	8.9
HCM LOS	A	A	A	A

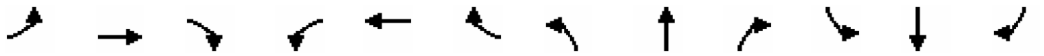
Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	10%	16%	13%
Vol Thru, %	48%	62%	69%	75%
Vol Right, %	23%	28%	15%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	162	172	128	99
LT Vol	46	17	21	13
Through Vol	78	107	88	74
RT Vol	38	48	19	12
Lane Flow Rate	176	187	139	108
Geometry Grp	1	1	1	1
Degree of Util (X)	0.238	0.246	0.189	0.149
Departure Headway (Hd)	4.858	4.745	4.892	4.984
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	753	729	715
Service Time	2.915	2.801	2.952	3.048
HCM Lane V/C Ratio	0.24	0.248	0.191	0.151
HCM Control Delay, s/veh	9.4	9.4	9.1	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	1	0.7	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	131	23	51	94	106	13	129	34	56	108	41
Future Volume (veh/h)	65	131	23	51	94	106	13	129	34	56	108	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722
Adj Flow Rate, veh/h	70	141	25	55	101	114	14	139	37	60	116	44
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	100	271	48	86	134	152	29	915	236	91	921	332
Arrive On Green	0.06	0.19	0.19	0.05	0.18	0.18	0.02	0.36	0.36	0.06	0.39	0.39
Sat Flow, veh/h	1640	1424	252	1640	739	834	1640	2574	665	1640	2340	844
Grp Volume(v), veh/h	70	0	166	55	0	215	14	87	89	60	79	81
Grp Sat Flow(s),veh/h/ln	1640	0	1676	1640	0	1572	1640	1636	1602	1640	1636	1548
Q Serve(g_s), s	2.2	0.0	4.6	1.7	0.0	6.7	0.4	1.9	2.0	1.9	1.6	1.7
Cycle Q Clear(g_c), s	2.2	0.0	4.6	1.7	0.0	6.7	0.4	1.9	2.0	1.9	1.6	1.7
Prop In Lane	1.00		0.15	1.00		0.53	1.00		0.41	1.00		0.55
Lane Grp Cap(c), veh/h	100	0	319	86	0	286	29	581	569	91	644	609
V/C Ratio(X)	0.70	0.00	0.52	0.64	0.00	0.75	0.48	0.15	0.16	0.66	0.12	0.13
Avail Cap(c_a), veh/h	173	0	596	158	0	544	158	581	569	158	644	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	18.9	24.2	0.0	20.2	25.3	11.4	11.5	24.1	10.1	10.1
Incr Delay (d2), s/veh	8.4	0.0	1.3	7.5	0.0	4.0	12.1	0.5	0.6	7.8	0.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.6	0.7	0.0	2.3	0.2	0.6	0.6	0.8	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.4	0.0	20.2	31.7	0.0	24.1	37.4	12.0	12.0	31.8	10.5	10.6
LnGrp LOS	C		C	C		C	D	B	B	C	B	B
Approach Vol, veh/h		236			270			190			220	
Approach Delay, s/veh		23.9			25.7			13.9			16.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	23.0	7.2	14.4	5.4	25.0	7.7	14.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.5	18.0
Max Q Clear Time (g_c+I1), s	3.9	4.0	3.7	6.6	2.4	3.7	4.2	8.7
Green Ext Time (p_c), s	0.0	0.6	0.0	0.5	0.0	0.6	0.0	0.7

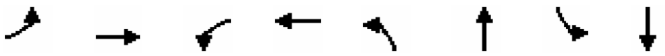
Intersection Summary	
HCM 7th Control Delay, s/veh	20.5
HCM 7th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	319	43	46	241	99	60	67	129	91	53	21
Future Volume (veh/h)	19	319	43	46	241	99	60	67	129	91	53	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	22	375	51	54	284	116	71	79	152	107	62	25
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	367	580	488	315	580	492	754	850	720	678	850	720
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	977	1856	1560	951	1856	1572	1300	1856	1572	1140	1856	1572
Grp Volume(v), veh/h	22	375	51	54	284	116	71	79	152	107	62	25
Grp Sat Flow(s),veh/h/ln	977	1856	1560	951	1856	1572	1300	1856	1572	1140	1856	1572
Q Serve(g_s), s	0.7	6.8	0.9	2.0	4.9	2.2	1.3	0.9	2.3	2.3	0.7	0.3
Cycle Q Clear(g_c), s	5.6	6.8	0.9	8.9	4.9	2.2	2.0	0.9	2.3	3.2	0.7	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	367	580	488	315	580	492	754	850	720	678	850	720
V/C Ratio(X)	0.06	0.65	0.10	0.17	0.49	0.24	0.09	0.09	0.21	0.16	0.07	0.03
Avail Cap(c_a), veh/h	510	850	715	453	850	720	754	850	720	678	850	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	11.6	9.6	15.5	11.0	10.0	6.5	6.0	6.4	6.9	6.0	5.9
Incr Delay (d2), s/veh	0.1	1.2	0.1	0.3	0.6	0.2	0.2	0.2	0.7	0.5	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.1	0.2	0.4	1.4	0.5	0.3	0.3	0.6	0.4	0.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.3	12.8	9.7	15.7	11.6	10.3	6.8	6.2	7.1	7.4	6.1	6.0
LnGrp LOS	B	B	A	B	B	B	A	A	A	A	A	A
Approach Vol, veh/h		448			454			302			194	
Approach Delay, s/veh		12.5			11.7			6.8			6.8	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		16.8		22.5		16.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.3		8.8		5.2		10.9				
Green Ext Time (p_c), s		0.9		1.6		0.6		1.3				

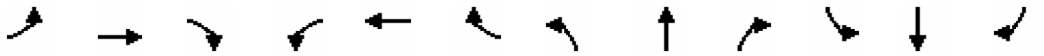
Intersection Summary												
HCM 7th Control Delay, s/veh			10.2									
HCM 7th LOS			B									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	70	166	55	215	14	176	60	160
v/c Ratio	0.38	0.47	0.33	0.56	0.08	0.13	0.36	0.11
Control Delay (s/veh)	33.1	22.3	31.9	18.6	27.5	11.9	33.4	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.1	22.3	31.9	18.6	27.5	11.9	33.4	9.0
Queue Length 50th (ft)	23	47	18	40	5	17	20	10
Queue Length 95th (ft)	#72	95	#57	95	20	42	#63	37
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	182	636	165	631	165	1327	165	1508
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.26	0.33	0.34	0.08	0.13	0.36	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	22	375	51	54	284	116	71	79	152	107	62	25
v/c Ratio	0.07	0.63	0.10	0.21	0.48	0.20	0.12	0.10	0.19	0.18	0.07	0.03
Control Delay (s/veh)	9.2	16.5	3.9	11.5	13.4	3.4	8.5	8.1	2.8	9.0	8.0	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.2	16.5	3.9	11.5	13.4	3.4	8.5	8.1	2.8	9.0	8.0	3.2
Queue Length 50th (ft)	3	69	0	8	49	0	8	9	0	13	7	0
Queue Length 95th (ft)	12	118	13	24	87	18	28	29	21	39	24	7
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	463	831	716	357	831	770	596	831	790	586	831	726
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.45	0.07	0.15	0.34	0.15	0.12	0.10	0.19	0.18	0.07	0.03

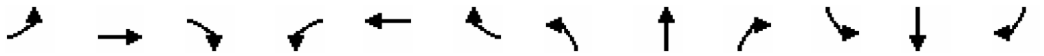
Intersection Summary

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	129	63	32	117	22	67	127	44	13	68	7
Future Vol, veh/h	12	129	63	32	117	22	67	127	44	13	68	7
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	14	155	76	39	141	27	81	153	53	16	82	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.3	11	12.4	9.9
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	6%	19%	15%
Vol Thru, %	53%	63%	68%	77%
Vol Right, %	18%	31%	13%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	204	171	88
LT Vol	67	12	32	13
Through Vol	127	129	117	68
RT Vol	44	63	22	7
Lane Flow Rate	287	246	206	106
Geometry Grp	1	1	1	1
Degree of Util (X)	0.427	0.36	0.312	0.168
Departure Headway (Hd)	5.359	5.268	5.457	5.706
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	671	683	657	628
Service Time	3.395	3.306	3.498	3.752
HCM Lane V/C Ratio	0.428	0.36	0.314	0.169
HCM Control Delay, s/veh	12.4	11.3	11	9.9
HCM Lane LOS	B	B	B	A
HCM 95th-tile Q	2.1	1.6	1.3	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	152	16	19	138	93	22	163	43	57	86	52
Future Volume (veh/h)	70	152	16	19	138	93	22	163	43	57	86	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	79	171	18	21	155	104	25	183	48	64	97	58
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	108	379	40	42	198	133	49	907	232	96	771	430
Arrive On Green	0.06	0.24	0.24	0.03	0.20	0.20	0.03	0.34	0.34	0.06	0.37	0.37
Sat Flow, veh/h	1682	1569	165	1682	980	658	1682	2647	677	1682	2078	1159
Grp Volume(v), veh/h	79	0	189	21	0	259	25	114	117	64	77	78
Grp Sat Flow(s),veh/h/ln	1682	0	1734	1682	0	1638	1682	1678	1645	1682	1678	1558
Q Serve(g_s), s	2.5	0.0	5.0	0.7	0.0	8.1	0.8	2.6	2.7	2.0	1.6	1.8
Cycle Q Clear(g_c), s	2.5	0.0	5.0	0.7	0.0	8.1	0.8	2.6	2.7	2.0	1.6	1.8
Prop In Lane	1.00		0.10	1.00		0.40	1.00		0.41	1.00		0.74
Lane Grp Cap(c), veh/h	108	0	419	42	0	331	49	575	564	96	623	578
V/C Ratio(X)	0.73	0.00	0.45	0.50	0.00	0.78	0.51	0.20	0.21	0.67	0.12	0.13
Avail Cap(c_a), veh/h	171	0	594	156	0	546	156	575	564	156	623	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	0.0	17.4	26.0	0.0	20.4	25.8	12.5	12.5	24.9	11.2	11.2
Incr Delay (d2), s/veh	9.1	0.0	0.8	8.8	0.0	4.0	8.1	0.8	0.8	7.7	0.4	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.7	0.3	0.0	2.9	0.4	0.9	0.9	0.9	0.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	33.8	0.0	18.2	34.8	0.0	24.5	33.9	13.3	13.4	32.6	11.6	11.7
LnGrp LOS	C		B	C		C	C	B	B	C	B	B
Approach Vol, veh/h		268			280			256			219	
Approach Delay, s/veh		22.8			25.2			15.3			17.8	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	23.0	5.9	17.5	6.1	24.5	8.0	15.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.5	18.0
Max Q Clear Time (g_c+I1), s	4.0	4.7	2.7	7.0	2.8	3.8	4.5	10.1
Green Ext Time (p_c), s	0.0	0.9	0.0	0.6	0.0	0.6	0.0	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	20.5
HCM 7th LOS	C

HCM 7th Signalized Intersection Summary
3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	298	36	134	266	111	35	53	79	85	85	21
Future Volume (veh/h)	28	298	36	134	266	111	35	53	79	85	85	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	317	38	143	283	118	37	56	84	90	90	22
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	399	646	540	390	646	547	694	817	692	698	817	687
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	984	1870	1564	1020	1870	1585	1274	1870	1585	1249	1870	1574
Grp Volume(v), veh/h	30	317	38	143	283	118	37	56	84	90	90	22
Grp Sat Flow(s),veh/h/ln	984	1870	1564	1020	1870	1585	1274	1870	1585	1249	1870	1574
Q Serve(g_s), s	1.0	5.5	0.7	5.3	4.8	2.2	0.7	0.7	1.3	1.9	1.2	0.3
Cycle Q Clear(g_c), s	5.8	5.5	0.7	10.8	4.8	2.2	1.9	0.7	1.3	2.6	1.2	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	399	646	540	390	646	547	694	817	692	698	817	687
V/C Ratio(X)	0.08	0.49	0.07	0.37	0.44	0.22	0.05	0.07	0.12	0.13	0.11	0.03
Avail Cap(c_a), veh/h	489	817	683	484	817	692	694	817	692	698	817	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	10.6	9.1	14.9	10.4	9.6	7.4	6.7	6.9	7.5	6.9	6.6
Incr Delay (d2), s/veh	0.1	0.6	0.1	0.6	0.5	0.2	0.1	0.2	0.4	0.4	0.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.7	0.2	1.0	1.4	0.5	0.2	0.2	0.3	0.4	0.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.7	11.2	9.1	15.5	10.9	9.7	7.6	6.9	7.3	7.9	7.1	6.7
LnGrp LOS	B	B	A	B	B	A	A	A	A	A	A	A
Approach Vol, veh/h		385			544			177			202	
Approach Delay, s/veh		11.1			11.8			7.2			7.4	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		18.7		22.5		18.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		3.9		7.8		4.6		12.8				
Green Ext Time (p_c), s		0.5		1.4		0.6		1.2				

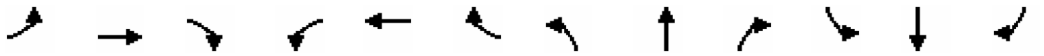
Intersection Summary	
HCM 7th Control Delay, s/veh	10.3
HCM 7th LOS	B



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	79	189	21	259	25	231	64	155
v/c Ratio	0.42	0.36	0.12	0.61	0.15	0.18	0.38	0.11
Control Delay (s/veh)	35.8	16.5	29.2	22.4	29.7	12.6	35.0	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.8	16.5	29.2	22.4	29.7	12.6	35.0	10.1
Queue Length 50th (ft)	28	44	7	68	9	25	23	9
Queue Length 95th (ft)	#82	107	27	132	30	53	#68	34
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	186	720	169	633	169	1286	169	1357
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.26	0.12	0.41	0.15	0.18	0.38	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	30	317	38	143	283	118	37	56	84	90	90	22
v/c Ratio	0.10	0.56	0.08	0.50	0.50	0.21	0.06	0.06	0.11	0.15	0.10	0.03
Control Delay (s/veh)	9.8	15.3	4.3	17.5	14.2	3.5	7.7	7.5	3.0	8.2	7.6	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.8	15.3	4.3	17.5	14.2	3.5	7.7	7.5	3.0	8.2	7.6	2.8
Queue Length 50th (ft)	5	56	0	25	49	0	4	6	0	10	10	0
Queue Length 95th (ft)	16	106	12	60	94	21	18	24	18	36	34	7
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	479	864	732	436	864	798	604	864	779	618	864	734
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.37	0.05	0.33	0.33	0.15	0.06	0.06	0.11	0.15	0.10	0.03

Intersection Summary

This page intentionally left blank.

Appendix F

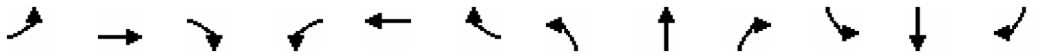
Opening Year (2027) Without Project Conditions Worksheets

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	123	50	31	101	28	48	82	43	31	79	14
Future Vol, veh/h	21	123	50	31	101	28	48	82	43	31	79	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	23	134	54	34	110	30	52	89	47	34	86	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10	9.8	10	9.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	11%	19%	25%
Vol Thru, %	47%	63%	63%	64%
Vol Right, %	25%	26%	18%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	173	194	160	124
LT Vol	48	21	31	31
Through Vol	82	123	101	79
RT Vol	43	50	28	14
Lane Flow Rate	188	211	174	135
Geometry Grp	1	1	1	1
Degree of Util (X)	0.264	0.289	0.244	0.195
Departure Headway (Hd)	5.053	4.928	5.041	5.202
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	703	721	704	682
Service Time	3.143	3.014	3.13	3.298
HCM Lane V/C Ratio	0.267	0.293	0.247	0.198
HCM Control Delay, s/veh	10	10	9.8	9.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	1.2	1	0.7

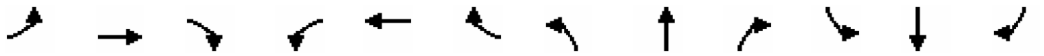


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	226	35	53	150	108	20	134	35	58	112	58
Future Volume (veh/h)	76	226	35	53	150	108	20	134	35	58	112	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722
Adj Flow Rate, veh/h	82	243	38	57	161	116	22	144	38	62	120	62
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	107	331	52	87	201	145	43	865	222	91	774	375
Arrive On Green	0.07	0.23	0.23	0.05	0.22	0.22	0.03	0.34	0.34	0.06	0.37	0.37
Sat Flow, veh/h	1640	1454	227	1640	931	671	1640	2579	661	1640	2120	1026
Grp Volume(v), veh/h	82	0	281	57	0	277	22	90	92	62	91	91
Grp Sat Flow(s),veh/h/ln	1640	0	1681	1640	0	1601	1640	1636	1603	1640	1636	1510
Q Serve(g_s), s	2.7	0.0	8.5	1.9	0.0	9.0	0.7	2.1	2.2	2.0	2.0	2.2
Cycle Q Clear(g_c), s	2.7	0.0	8.5	1.9	0.0	9.0	0.7	2.1	2.2	2.0	2.0	2.2
Prop In Lane	1.00		0.14	1.00		0.42	1.00		0.41	1.00		0.68
Lane Grp Cap(c), veh/h	107	0	383	87	0	345	43	549	538	91	598	552
V/C Ratio(X)	0.77	0.00	0.73	0.66	0.00	0.80	0.52	0.16	0.17	0.68	0.15	0.17
Avail Cap(c_a), veh/h	167	0	570	150	0	526	150	549	538	150	598	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	19.6	25.5	0.0	20.4	26.4	12.8	12.9	25.4	11.7	11.8
Incr Delay (d2), s/veh	11.0	0.0	2.7	8.1	0.0	5.2	9.4	0.6	0.7	8.5	0.5	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	3.0	0.8	0.0	3.2	0.4	0.7	0.7	0.9	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.2	0.0	22.4	33.6	0.0	25.6	35.7	13.5	13.5	33.9	12.2	12.4
LnGrp LOS	D		C	C		C	D	B	B	C	B	B
Approach Vol, veh/h		363			334			204			244	
Approach Delay, s/veh		25.5			26.9			15.9			17.8	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	22.9	7.4	17.0	5.9	24.5	8.1	16.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.4	5.0	18.6	5.0	18.4	5.6	18.0
Max Q Clear Time (g_c+I1), s	4.0	4.2	3.9	10.5	2.7	4.2	4.7	11.0
Green Ext Time (p_c), s	0.0	0.7	0.0	0.9	0.0	0.7	0.0	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	22.6
HCM 7th LOS	C

HCM 7th Signalized Intersection Summary
3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave.



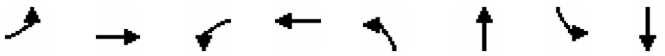
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	427	54	63	284	103	70	88	181	95	60	24
Future Volume (veh/h)	23	427	54	63	284	103	70	88	181	95	60	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	27	502	64	74	334	121	82	104	213	112	71	28
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	389	699	588	288	699	592	671	771	653	568	771	653
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	929	1856	1562	836	1856	1572	1286	1856	1572	1054	1856	1572
Grp Volume(v), veh/h	27	502	64	74	334	121	82	104	213	112	71	28
Grp Sat Flow(s),veh/h/ln	929	1856	1562	836	1856	1572	1286	1856	1572	1054	1856	1572
Q Serve(g_s), s	1.0	10.0	1.2	3.6	5.9	2.3	1.8	1.5	4.0	3.2	1.0	0.5
Cycle Q Clear(g_c), s	6.9	10.0	1.2	13.6	5.9	2.3	2.8	1.5	4.0	4.7	1.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	389	699	588	288	699	592	671	771	653	568	771	653
V/C Ratio(X)	0.07	0.72	0.11	0.26	0.48	0.20	0.12	0.13	0.33	0.20	0.09	0.04
Avail Cap(c_a), veh/h	425	771	649	320	771	653	671	771	653	568	771	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	11.5	8.8	17.3	10.3	9.1	8.5	7.8	8.6	9.3	7.7	7.5
Incr Delay (d2), s/veh	0.1	2.9	0.1	0.5	0.5	0.2	0.4	0.4	1.3	0.8	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.4	0.3	0.6	1.7	0.5	0.4	0.5	1.1	0.6	0.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.0	14.4	8.9	17.8	10.8	9.3	8.9	8.2	9.9	10.1	7.9	7.7
LnGrp LOS	B	B	A	B	B	A	A	A	A	B	A	A
Approach Vol, veh/h		593			529			399			211	
Approach Delay, s/veh		13.8			11.4			9.2			9.0	
Approach LOS		B			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		20.8		22.5		20.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		6.0		12.0		6.7		15.6				
Green Ext Time (p_c), s		1.2		1.7		0.6		0.7				

Intersection Summary												
HCM 7th Control Delay, s/veh			11.4									
HCM 7th LOS			B									

Queues

2: S. K St. & W. Paige Ave. 04/04/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	82	281	57	277	22	182	62	182
v/c Ratio	0.47	0.57	0.37	0.65	0.14	0.16	0.40	0.14
Control Delay (s/veh)	38.8	23.2	35.3	24.0	30.0	13.5	36.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.8	23.2	35.3	24.0	30.0	13.5	36.9	9.6
Queue Length 50th (ft)	30	90	21	74	8	20	23	12
Queue Length 95th (ft)	#89	161	#61	145	28	44	#68	40
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	174	616	156	590	156	1137	156	1301
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.46	0.37	0.47	0.14	0.16	0.40	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	27	502	64	74	334	121	82	104	213	112	71	28
v/c Ratio	0.08	0.75	0.11	0.38	0.50	0.19	0.15	0.13	0.27	0.21	0.09	0.04
Control Delay (s/veh)	9.2	20.3	3.6	16.4	13.4	3.2	9.4	9.0	3.1	10.0	8.7	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.2	20.3	3.6	16.4	13.4	3.2	9.4	9.0	3.1	10.0	8.7	3.5
Queue Length 50th (ft)	4	101	0	13	60	0	13	16	1	18	11	0
Queue Length 95th (ft)	14	167	14	37	103	19	31	36	26	40	27	8
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	389	786	687	229	786	737	558	786	785	542	786	688
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.64	0.09	0.32	0.42	0.16	0.15	0.13	0.27	0.21	0.09	0.04

Intersection Summary

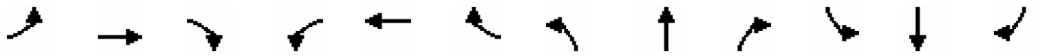
Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	137	66	41	130	50	70	135	56	36	73	9
Future Vol, veh/h	13	137	66	41	130	50	70	135	56	36	73	9
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	16	165	80	49	157	60	84	163	67	43	88	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12.6	13	14.4	11.2
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	6%	19%	31%
Vol Thru, %	52%	63%	59%	62%
Vol Right, %	21%	31%	23%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	261	216	221	118
LT Vol	70	13	41	36
Through Vol	135	137	130	73
RT Vol	56	66	50	9
Lane Flow Rate	314	260	266	142
Geometry Grp	1	1	1	1
Degree of Util (X)	0.498	0.409	0.423	0.242
Departure Headway (Hd)	5.698	5.658	5.715	6.122
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	629	632	626	581
Service Time	3.768	3.734	3.791	4.209
HCM Lane V/C Ratio	0.499	0.411	0.425	0.244
HCM Control Delay, s/veh	14.4	12.6	13	11.2
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.8	2	2.1	0.9

HCM 7th Signalized Intersection Summary
2: S. K St. & W. Paige Ave.

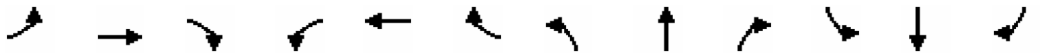


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	238	27	20	246	97	37	170	45	59	89	59
Future Volume (veh/h)	101	238	27	20	246	97	37	170	45	59	89	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	113	267	30	22	276	109	42	191	51	66	100	66
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	142	500	56	43	315	124	70	799	208	93	634	388
Arrive On Green	0.08	0.32	0.32	0.03	0.26	0.26	0.04	0.30	0.30	0.06	0.32	0.32
Sat Flow, veh/h	1682	1557	175	1682	1200	474	1682	2635	686	1682	2000	1225
Grp Volume(v), veh/h	113	0	297	22	0	385	42	120	122	66	83	83
Grp Sat Flow(s),veh/h/ln	1682	0	1732	1682	0	1674	1682	1678	1643	1682	1678	1546
Q Serve(g_s), s	4.0	0.0	8.6	0.8	0.0	13.4	1.5	3.3	3.4	2.4	2.2	2.4
Cycle Q Clear(g_c), s	4.0	0.0	8.6	0.8	0.0	13.4	1.5	3.3	3.4	2.4	2.2	2.4
Prop In Lane	1.00		0.10	1.00		0.28	1.00		0.42	1.00		0.79
Lane Grp Cap(c), veh/h	142	0	556	43	0	439	70	509	498	93	532	490
V/C Ratio(X)	0.80	0.00	0.53	0.51	0.00	0.88	0.60	0.24	0.25	0.71	0.16	0.17
Avail Cap(c_a), veh/h	152	0	556	138	0	494	138	509	498	138	532	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	17.0	29.3	0.0	21.6	28.7	15.9	16.0	28.3	15.0	15.0
Incr Delay (d2), s/veh	23.8	0.0	1.0	9.1	0.0	15.1	7.9	1.1	1.2	9.6	0.6	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	2.9	0.4	0.0	6.2	0.7	1.2	1.2	1.1	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.3	0.0	18.0	38.5	0.0	36.6	36.6	17.0	17.2	37.9	15.6	15.8
LnGrp LOS	D		B	D		D	D	B	B	D	B	B
Approach Vol, veh/h		410			407			284			232	
Approach Delay, s/veh		27.1			36.7			20.0			22.0	
Approach LOS		C			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	23.0	6.1	24.1	7.0	23.8	9.6	20.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.5	18.0
Max Q Clear Time (g_c+I1), s	4.4	5.4	2.8	10.6	3.5	4.4	6.0	15.4
Green Ext Time (p_c), s	0.0	0.9	0.0	0.9	0.0	0.6	0.0	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	27.7
HCM 7th LOS	C

HCM 7th Signalized Intersection Summary
3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave.



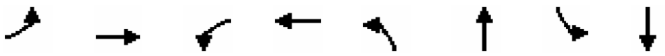
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	379	39	192	386	115	41	66	113	88	106	27
Future Volume (veh/h)	34	379	39	192	386	115	41	66	113	88	106	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	403	41	204	411	122	44	70	120	94	113	29
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	798	669	404	798	677	579	721	611	582	721	606
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	871	1870	1568	942	1870	1585	1239	1870	1585	1193	1870	1573
Grp Volume(v), veh/h	36	403	41	204	411	122	44	70	120	94	113	29
Grp Sat Flow(s),veh/h/ln	871	1870	1568	942	1870	1585	1239	1870	1585	1193	1870	1573
Q Serve(g_s), s	1.5	7.6	0.7	9.7	7.7	2.3	1.2	1.1	2.4	2.6	1.9	0.6
Cycle Q Clear(g_c), s	9.3	7.6	0.7	17.2	7.7	2.3	3.1	1.1	2.4	3.8	1.9	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	798	669	404	798	677	579	721	611	582	721	606
V/C Ratio(X)	0.09	0.50	0.06	0.51	0.51	0.18	0.08	0.10	0.20	0.16	0.16	0.05
Avail Cap(c_a), veh/h	418	877	735	443	877	743	579	721	611	582	721	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	10.0	8.1	16.3	10.1	8.5	10.6	9.4	9.8	10.6	9.6	9.2
Incr Delay (d2), s/veh	0.1	0.5	0.0	1.0	0.5	0.1	0.3	0.3	0.7	0.6	0.5	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	0.2	1.7	2.3	0.6	0.3	0.4	0.8	0.6	0.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.6	10.5	8.1	17.3	10.6	8.7	10.9	9.7	10.5	11.2	10.1	9.4
LnGrp LOS	B	B	A	B	B	A	B	A	B	B	B	A
Approach Vol, veh/h		480			737			234			236	
Approach Delay, s/veh		10.6			12.2			10.3			10.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		25.0		23.0		25.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		22.5		18.5		22.5				
Max Q Clear Time (g_c+I1), s		5.1		11.3		5.8		19.2				
Green Ext Time (p_c), s		0.7		2.0		0.7		1.2				

Intersection Summary												
HCM 7th Control Delay, s/veh			11.2									
HCM 7th LOS			B									

Queues

2: S. K St. & W. Paige Ave. 04/04/2025



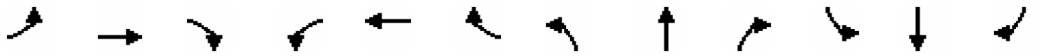
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	113	297	22	385	42	242	66	166
v/c Ratio	0.72	0.42	0.15	0.82	0.30	0.23	0.46	0.16
Control Delay (s/veh)	58.6	16.4	30.8	36.3	33.9	13.9	40.9	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	58.6	16.4	30.8	36.3	33.9	13.9	40.9	11.3
Queue Length 50th (ft)	45	75	8	130	16	30	26	15
Queue Length 95th (ft)	#124	169	27	#259	43	54	#71	35
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	156	709	142	535	142	1052	142	1033
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.42	0.15	0.72	0.30	0.23	0.46	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	36	403	41	204	411	122	44	70	120	94	113	29
v/c Ratio	0.13	0.60	0.07	0.74	0.61	0.19	0.08	0.09	0.16	0.17	0.14	0.04
Control Delay (s/veh)	9.7	14.9	3.6	29.5	15.2	2.9	10.2	9.9	3.5	10.8	10.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.7	14.9	3.6	29.5	15.2	2.9	10.2	9.9	3.5	10.8	10.2	4.6
Queue Length 50th (ft)	6	77	0	42	79	0	6	10	0	14	16	0
Queue Length 95th (ft)	19	137	12	#123	140	20	24	33	24	43	48	11
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	385	971	818	397	971	883	546	798	747	563	798	678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.42	0.05	0.51	0.42	0.14	0.08	0.09	0.16	0.17	0.14	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

This page intentionally left blank.

Appendix G

Opening Year (2027) Plus Project Conditions Worksheets

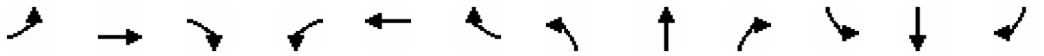
Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	125	50	34	106	31	48	82	44	32	79	14
Future Vol, veh/h	21	125	50	34	106	31	48	82	44	32	79	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	23	136	54	37	115	34	52	89	48	35	86	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.1	10	10.1	9.7
HCM LOS	B	A	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	11%	20%	26%
Vol Thru, %	47%	64%	62%	63%
Vol Right, %	25%	26%	18%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	174	196	171	125
LT Vol	48	21	34	32
Through Vol	82	125	106	79
RT Vol	44	50	31	14
Lane Flow Rate	189	213	186	136
Geometry Grp	1	1	1	1
Degree of Util (X)	0.267	0.293	0.261	0.202
Departure Headway (Hd)	5.09	4.958	5.053	5.344
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	696	716	701	675
Service Time	3.188	3.053	3.152	3.344
HCM Lane V/C Ratio	0.272	0.297	0.265	0.201
HCM Control Delay, s/veh	10.1	10.1	10	9.7
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	1.1	1.2	1	0.8

HCM 7th Signalized Intersection Summary
2: S. K St. & W. Paige Ave.

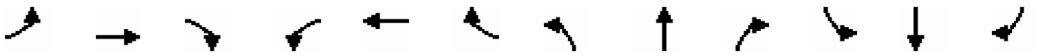


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	257	37	53	159	108	21	134	35	58	112	63
Future Volume (veh/h)	91	257	37	53	159	108	21	134	35	58	112	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722
Adj Flow Rate, veh/h	98	276	40	57	171	116	23	144	38	62	120	68
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	121	355	51	86	210	143	44	850	218	91	735	388
Arrive On Green	0.07	0.24	0.24	0.05	0.22	0.22	0.03	0.33	0.33	0.06	0.36	0.36
Sat Flow, veh/h	1640	1470	213	1640	957	649	1640	2579	661	1640	2051	1084
Grp Volume(v), veh/h	98	0	316	57	0	287	23	90	92	62	94	94
Grp Sat Flow(s),veh/h/ln	1640	0	1683	1640	0	1605	1640	1636	1603	1640	1636	1498
Q Serve(g_s), s	3.3	0.0	9.8	1.9	0.0	9.5	0.8	2.2	2.3	2.1	2.2	2.4
Cycle Q Clear(g_c), s	3.3	0.0	9.8	1.9	0.0	9.5	0.8	2.2	2.3	2.1	2.2	2.4
Prop In Lane	1.00		0.13	1.00		0.40	1.00		0.41	1.00		0.72
Lane Grp Cap(c), veh/h	121	0	407	86	0	353	44	540	529	91	586	537
V/C Ratio(X)	0.81	0.00	0.78	0.66	0.00	0.81	0.52	0.17	0.17	0.68	0.16	0.18
Avail Cap(c_a), veh/h	161	0	555	146	0	515	146	540	529	146	586	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	19.9	26.1	0.0	20.8	26.9	13.3	13.4	26.0	12.3	12.3
Incr Delay (d2), s/veh	19.6	0.0	4.8	8.4	0.0	6.3	9.3	0.7	0.7	8.8	0.6	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.7	0.8	0.0	3.5	0.4	0.7	0.8	0.9	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.2	0.0	24.6	34.5	0.0	27.1	36.2	14.0	14.1	34.8	12.8	13.0
LnGrp LOS	D		C	C		C	D	B	B	C	B	B
Approach Vol, veh/h		414			344			205			250	
Approach Delay, s/veh		29.5			28.3			16.5			18.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.6	23.0	7.4	18.1	6.0	24.6	8.7	16.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.5	18.0
Max Q Clear Time (g_c+I1), s	4.1	4.3	3.9	11.8	2.8	4.4	5.3	11.5
Green Ext Time (p_c), s	0.0	0.7	0.0	0.9	0.0	0.7	0.0	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	24.7
HCM 7th LOS	C

HCM 7th Signalized Intersection Summary
3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	428	54	63	284	103	70	88	181	95	60	24
Future Volume (veh/h)	23	428	54	63	284	103	70	88	181	95	60	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	27	504	64	74	334	121	82	104	213	112	71	28
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	390	700	590	287	700	594	670	770	653	567	770	653
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	929	1856	1562	835	1856	1572	1286	1856	1572	1054	1856	1572
Grp Volume(v), veh/h	27	504	64	74	334	121	82	104	213	112	71	28
Grp Sat Flow(s),veh/h/ln	929	1856	1562	835	1856	1572	1286	1856	1572	1054	1856	1572
Q Serve(g_s), s	1.0	10.1	1.2	3.6	5.9	2.3	1.8	1.5	4.0	3.2	1.0	0.5
Cycle Q Clear(g_c), s	6.9	10.1	1.2	13.7	5.9	2.3	2.8	1.5	4.0	4.7	1.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	390	700	590	287	700	594	670	770	653	567	770	653
V/C Ratio(X)	0.07	0.72	0.11	0.26	0.48	0.20	0.12	0.14	0.33	0.20	0.09	0.04
Avail Cap(c_a), veh/h	425	770	648	319	770	653	670	770	653	567	770	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	11.5	8.8	17.4	10.2	9.1	8.6	7.9	8.6	9.3	7.7	7.6
Incr Delay (d2), s/veh	0.1	3.0	0.1	0.5	0.5	0.2	0.4	0.4	1.3	0.8	0.2	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.4	0.3	0.6	1.7	0.5	0.4	0.5	1.2	0.6	0.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.9	14.5	8.8	17.9	10.8	9.3	8.9	8.2	9.9	10.1	8.0	7.7
LnGrp LOS	B	B	A	B	B	A	A	A	A	B	A	A
Approach Vol, veh/h		595			529			399			211	
Approach Delay, s/veh		13.8			11.4			9.3			9.1	
Approach LOS		B			B			A			A	

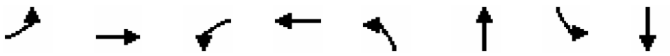
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		20.9		22.5		20.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		6.0		12.1		6.7		15.7				
Green Ext Time (p_c), s		1.2		1.7		0.6		0.6				

Intersection Summary												
HCM 7th Control Delay, s/veh			11.5									
HCM 7th LOS			B									

Queues

2: S. K St. & W. Paige Ave.

04/04/2025



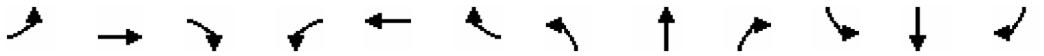
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	316	57	287	23	182	62	188
v/c Ratio	0.58	0.63	0.37	0.66	0.15	0.16	0.40	0.16
Control Delay (s/veh)	45.5	24.8	35.8	24.2	30.4	13.7	37.5	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.5	24.8	35.8	24.2	30.4	13.7	37.5	10.8
Queue Length 50th (ft)	37	105	21	79	8	21	23	13
Queue Length 95th (ft)	#109	#186	#61	152	29	44	#68	40
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	169	607	154	581	154	1128	154	1201
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.52	0.37	0.49	0.15	0.16	0.40	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	27	504	64	74	334	121	82	104	213	112	71	28
v/c Ratio	0.08	0.76	0.11	0.38	0.50	0.19	0.15	0.13	0.27	0.21	0.09	0.04
Control Delay (s/veh)	9.2	20.4	3.6	16.4	13.3	3.2	9.4	9.0	3.1	10.0	8.8	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.2	20.4	3.6	16.4	13.3	3.2	9.4	9.0	3.1	10.0	8.8	3.5
Queue Length 50th (ft)	4	101	0	13	60	0	13	16	2	18	11	0
Queue Length 95th (ft)	14	168	14	37	103	19	31	36	26	40	27	8
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	390	785	686	228	785	736	558	785	784	541	785	687
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.64	0.09	0.32	0.43	0.16	0.15	0.13	0.27	0.21	0.09	0.04

Intersection Summary

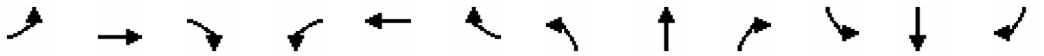
Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	142	66	43	132	52	70	135	62	38	73	9
Future Vol, veh/h	13	142	66	43	132	52	70	135	62	38	73	9
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	16	171	80	52	159	63	84	163	75	46	88	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	13	13.4	14.8	11.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	6%	19%	32%
Vol Thru, %	51%	64%	58%	61%
Vol Right, %	23%	30%	23%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	267	221	227	120
LT Vol	70	13	43	38
Through Vol	135	142	132	73
RT Vol	62	66	52	9
Lane Flow Rate	322	266	273	145
Geometry Grp	1	1	1	1
Degree of Util (X)	0.513	0.423	0.439	0.249
Departure Headway (Hd)	5.746	5.725	5.775	6.202
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	624	623	618	574
Service Time	3.822	3.804	3.853	4.296
HCM Lane V/C Ratio	0.516	0.427	0.442	0.253
HCM Control Delay, s/veh	14.8	13	13.4	11.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	2.9	2.1	2.2	1

HCM 7th Signalized Intersection Summary
2: S. K St. & W. Paige Ave.

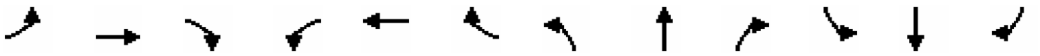


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	258	28	20	278	97	46	170	45	59	89	76
Future Volume (veh/h)	114	258	28	20	278	97	46	170	45	59	89	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	128	290	31	22	312	109	52	191	51	66	100	85
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	160	544	58	42	346	121	78	795	207	89	554	430
Arrive On Green	0.10	0.35	0.35	0.03	0.28	0.28	0.05	0.30	0.30	0.05	0.31	0.31
Sat Flow, veh/h	1682	1566	167	1682	1246	435	1682	2635	686	1682	1798	1395
Grp Volume(v), veh/h	128	0	321	22	0	421	52	120	122	66	93	92
Grp Sat Flow(s),veh/h/ln	1682	0	1734	1682	0	1682	1682	1678	1643	1682	1678	1515
Q Serve(g_s), s	4.9	0.0	9.8	0.9	0.0	15.9	2.0	3.5	3.7	2.6	2.7	3.0
Cycle Q Clear(g_c), s	4.9	0.0	9.8	0.9	0.0	15.9	2.0	3.5	3.7	2.6	2.7	3.0
Prop In Lane	1.00		0.10	1.00		0.26	1.00		0.42	1.00		0.92
Lane Grp Cap(c), veh/h	160	0	602	42	0	467	78	506	496	89	517	467
V/C Ratio(X)	0.80	0.00	0.53	0.52	0.00	0.90	0.66	0.24	0.25	0.74	0.18	0.20
Avail Cap(c_a), veh/h	191	0	602	127	0	497	130	506	496	130	517	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	0.0	17.2	31.8	0.0	23.0	30.9	17.3	17.4	30.8	16.7	16.8
Incr Delay (d2), s/veh	18.1	0.0	0.9	9.5	0.0	19.0	9.2	1.1	1.2	11.7	0.8	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	3.4	0.4	0.0	7.8	0.9	1.3	1.4	1.2	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.4	0.0	18.2	41.3	0.0	41.9	40.2	18.4	18.6	42.5	17.5	17.8
LnGrp LOS	D		B	D		D	D	B	B	D	B	B
Approach Vol, veh/h		449			443			294			251	
Approach Delay, s/veh		26.5			41.9			22.3			24.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	24.4	6.2	27.4	7.6	24.8	10.8	22.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	19.9	5.0	22.0	5.1	19.9	7.5	19.5
Max Q Clear Time (g_c+I1), s	4.6	5.7	2.9	11.8	4.0	5.0	6.9	17.9
Green Ext Time (p_c), s	0.0	0.9	0.0	1.2	0.0	0.7	0.0	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	30.0
HCM 7th LOS	C

HCM 7th Signalized Intersection Summary
3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave.



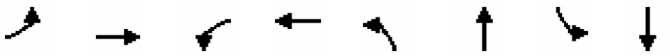
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	379	39	192	386	115	41	66	113	88	106	27
Future Volume (veh/h)	34	379	39	192	386	115	41	66	113	88	106	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	403	41	204	411	122	44	70	120	94	113	29
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	798	669	404	798	677	579	721	611	582	721	606
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	871	1870	1568	942	1870	1585	1239	1870	1585	1193	1870	1573
Grp Volume(v), veh/h	36	403	41	204	411	122	44	70	120	94	113	29
Grp Sat Flow(s),veh/h/ln	871	1870	1568	942	1870	1585	1239	1870	1585	1193	1870	1573
Q Serve(g_s), s	1.5	7.6	0.7	9.7	7.7	2.3	1.2	1.1	2.4	2.6	1.9	0.6
Cycle Q Clear(g_c), s	9.3	7.6	0.7	17.2	7.7	2.3	3.1	1.1	2.4	3.8	1.9	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	381	798	669	404	798	677	579	721	611	582	721	606
V/C Ratio(X)	0.09	0.50	0.06	0.51	0.51	0.18	0.08	0.10	0.20	0.16	0.16	0.05
Avail Cap(c_a), veh/h	418	877	735	443	877	743	579	721	611	582	721	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	10.0	8.1	16.3	10.1	8.5	10.6	9.4	9.8	10.6	9.6	9.2
Incr Delay (d2), s/veh	0.1	0.5	0.0	1.0	0.5	0.1	0.3	0.3	0.7	0.6	0.5	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.3	0.2	1.7	2.3	0.6	0.3	0.4	0.8	0.6	0.7	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.6	10.5	8.1	17.3	10.6	8.7	10.9	9.7	10.5	11.2	10.1	9.4
LnGrp LOS	B	B	A	B	B	A	B	A	B	B	B	A
Approach Vol, veh/h		480			737			234			236	
Approach Delay, s/veh		10.6			12.2			10.3			10.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		25.0		23.0		25.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		22.5		18.5		22.5				
Max Q Clear Time (g_c+I1), s		5.1		11.3		5.8		19.2				
Green Ext Time (p_c), s		0.7		2.0		0.7		1.2				

Intersection Summary												
HCM 7th Control Delay, s/veh			11.2									
HCM 7th LOS			B									

Queues

2: S. K St. & W. Paige Ave. 04/04/2025



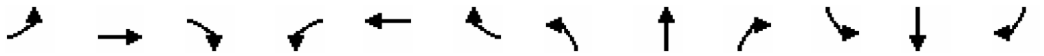
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	321	22	421	52	242	66	185
v/c Ratio	0.66	0.50	0.17	0.85	0.39	0.23	0.49	0.16
Control Delay (s/veh)	49.3	20.2	33.8	40.4	39.8	15.9	45.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	49.3	20.2	33.8	40.4	39.8	15.9	45.6	11.1
Queue Length 50th (ft)	54	87	9	162	22	33	28	16
Queue Length 95th (ft)	#131	187	30	#314	#55	59	#77	38
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	200	705	133	541	135	1059	135	1127
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.46	0.17	0.78	0.39	0.23	0.49	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	36	403	41	204	411	122	44	70	120	94	113	29
v/c Ratio	0.13	0.60	0.07	0.74	0.61	0.19	0.08	0.09	0.16	0.17	0.14	0.04
Control Delay (s/veh)	9.7	14.9	3.6	29.5	15.2	2.9	10.2	9.9	3.5	10.8	10.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.7	14.9	3.6	29.5	15.2	2.9	10.2	9.9	3.5	10.8	10.2	4.6
Queue Length 50th (ft)	6	77	0	42	79	0	6	10	0	14	16	0
Queue Length 95th (ft)	19	137	12	#123	140	20	24	33	24	43	48	11
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	385	971	818	397	971	883	546	798	747	563	798	678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.42	0.05	0.51	0.42	0.14	0.08	0.09	0.16	0.17	0.14	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

This page intentionally left blank.

Appendix H

10-Year Horizon (Year 2035) Without Project Conditions Worksheets

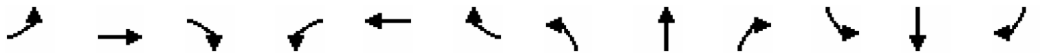
Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	143	59	35	116	31	56	96	49	33	92	17
Future Vol, veh/h	24	143	59	35	116	31	56	96	49	33	92	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	26	155	64	38	126	34	61	104	53	36	100	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.2	10.7	11	10.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	11%	19%	23%
Vol Thru, %	48%	63%	64%	65%
Vol Right, %	24%	26%	17%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	201	226	182	142
LT Vol	56	24	35	33
Through Vol	96	143	116	92
RT Vol	49	59	31	17
Lane Flow Rate	218	246	198	154
Geometry Grp	1	1	1	1
Degree of Util (X)	0.327	0.358	0.296	0.239
Departure Headway (Hd)	5.392	5.243	5.385	5.563
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	666	685	667	645
Service Time	3.429	3.281	3.425	3.603
HCM Lane V/C Ratio	0.327	0.359	0.297	0.239
HCM Control Delay, s/veh	11	11.2	10.7	10.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.4	1.6	1.2	0.9

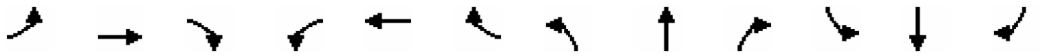
HCM 7th Signalized Intersection Summary
2: S. K St. & W. Paige Ave.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	250	39	62	197	129	22	157	41	68	132	65
Future Volume (veh/h)	87	250	39	62	197	129	22	157	41	68	132	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722
Adj Flow Rate, veh/h	94	269	42	67	212	139	24	169	44	73	142	70
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	117	390	61	92	246	161	45	808	205	97	740	344
Arrive On Green	0.07	0.27	0.27	0.06	0.25	0.25	0.03	0.31	0.31	0.06	0.34	0.34
Sat Flow, veh/h	1640	1454	227	1640	971	637	1640	2585	655	1640	2150	1001
Grp Volume(v), veh/h	94	0	311	67	0	351	24	105	108	73	106	106
Grp Sat Flow(s),veh/h/ln	1640	0	1681	1640	0	1608	1640	1636	1604	1640	1636	1515
Q Serve(g_s), s	3.3	0.0	9.8	2.4	0.0	12.3	0.9	2.8	2.9	2.6	2.7	2.9
Cycle Q Clear(g_c), s	3.3	0.0	9.8	2.4	0.0	12.3	0.9	2.8	2.9	2.6	2.7	2.9
Prop In Lane	1.00		0.14	1.00		0.40	1.00		0.41	1.00		0.66
Lane Grp Cap(c), veh/h	117	0	451	92	0	408	45	511	501	97	563	521
V/C Ratio(X)	0.81	0.00	0.69	0.72	0.00	0.86	0.53	0.21	0.21	0.75	0.19	0.20
Avail Cap(c_a), veh/h	152	0	525	138	0	489	138	511	501	138	563	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	19.5	27.5	0.0	21.1	28.4	15.0	15.0	27.4	13.6	13.7
Incr Delay (d2), s/veh	20.8	0.0	3.1	10.2	0.0	12.7	9.3	0.9	1.0	13.2	0.7	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.5	1.1	0.0	5.3	0.4	1.0	1.0	1.2	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.9	0.0	22.6	37.7	0.0	33.8	37.8	15.9	16.0	40.6	14.4	14.6
LnGrp LOS	D		C	D		C	D	B	B	D	B	B
Approach Vol, veh/h		405			418			237			285	
Approach Delay, s/veh		28.5			34.4			18.1			21.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	23.0	7.8	20.4	6.1	24.9	8.7	19.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.5	18.0
Max Q Clear Time (g_c+I1), s	4.6	4.9	4.4	11.8	2.9	4.9	5.3	14.3
Green Ext Time (p_c), s	0.0	0.8	0.0	0.8	0.0	0.8	0.0	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	27.0
HCM 7th LOS	C



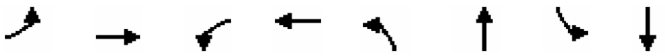
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	484	61	71	327	121	81	99	204	111	70	28
Future Volume (veh/h)	26	484	61	71	327	121	81	99	204	111	70	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	28	526	66	77	355	132	88	108	222	121	76	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	389	741	624	290	741	628	641	750	635	540	750	635
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	902	1856	1563	817	1856	1572	1278	1856	1572	1042	1856	1572
Grp Volume(v), veh/h	28	526	66	77	355	132	88	108	222	121	76	30
Grp Sat Flow(s),veh/h/ln	902	1856	1563	817	1856	1572	1278	1856	1572	1042	1856	1572
Q Serve(g_s), s	1.1	10.9	1.2	4.0	6.5	2.5	2.1	1.7	4.5	3.8	1.2	0.5
Cycle Q Clear(g_c), s	7.6	10.9	1.2	14.9	6.5	2.5	3.3	1.7	4.5	5.5	1.2	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	389	741	624	290	741	628	641	750	635	540	750	635
V/C Ratio(X)	0.07	0.71	0.11	0.27	0.48	0.21	0.14	0.14	0.35	0.22	0.10	0.05
Avail Cap(c_a), veh/h	472	912	768	364	912	773	641	750	635	540	750	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	11.5	8.6	17.8	10.2	9.0	9.5	8.6	9.5	10.4	8.5	8.3
Incr Delay (d2), s/veh	0.1	2.0	0.1	0.5	0.5	0.2	0.4	0.4	1.5	1.0	0.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.6	0.3	0.6	1.9	0.6	0.5	0.6	1.4	0.8	0.4	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.1	13.5	8.7	18.2	10.7	9.2	9.9	9.0	11.0	11.3	8.8	8.4
LnGrp LOS	B	B	A	B	B	A	A	A	B	B	A	A
Approach Vol, veh/h		620			564			418			227	
Approach Delay, s/veh		13.0			11.4			10.3			10.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		22.8		23.0		22.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		22.5		18.5		22.5				
Max Q Clear Time (g_c+I1), s		6.5		12.9		7.5		16.9				
Green Ext Time (p_c), s		1.3		2.5		0.7		1.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			11.5									
HCM 7th LOS			B									

Queues

2: S. K St. & W. Paige Ave. 04/04/2025



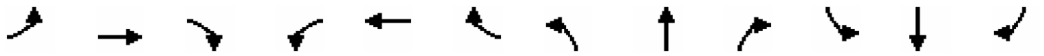
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	94	311	67	351	24	213	73	212
v/c Ratio	0.59	0.62	0.46	0.77	0.17	0.20	0.50	0.17
Control Delay (s/veh)	47.5	24.6	41.4	31.7	31.0	14.5	43.8	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.5	24.6	41.4	31.7	31.0	14.5	43.8	11.1
Queue Length 50th (ft)	37	103	26	107	9	26	29	16
Queue Length 95th (ft)	#105	181	#75	#225	30	51	#83	45
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	159	594	145	551	145	1070	145	1237
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.52	0.46	0.64	0.17	0.20	0.50	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	28	526	66	77	355	132	88	108	222	121	76	30
v/c Ratio	0.08	0.74	0.11	0.39	0.50	0.19	0.16	0.14	0.28	0.23	0.10	0.04
Control Delay (s/veh)	8.8	18.8	3.2	15.9	12.9	2.8	11.1	10.5	3.2	11.8	10.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.8	18.8	3.2	15.9	12.9	2.8	11.1	10.5	3.2	11.8	10.2	4.6
Queue Length 50th (ft)	4	110	0	14	66	0	14	17	0	20	12	0
Queue Length 95th (ft)	15	194	15	41	119	21	41	46	33	55	35	12
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	440	928	800	261	928	854	540	763	779	524	763	667
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.57	0.08	0.30	0.38	0.15	0.16	0.14	0.28	0.23	0.10	0.04

Intersection Summary

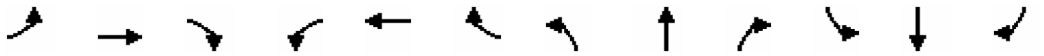
Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	160	77	47	151	54	82	158	64	38	85	11
Future Vol, veh/h	16	160	77	47	151	54	82	158	64	38	85	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	17	174	84	51	164	59	89	172	70	41	92	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	13.4	13.6	15.4	11.5
HCM LOS	B	B	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	6%	19%	28%
Vol Thru, %	52%	63%	60%	63%
Vol Right, %	21%	30%	21%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	304	253	252	134
LT Vol	82	16	47	38
Through Vol	158	160	151	85
RT Vol	64	77	54	11
Lane Flow Rate	330	275	274	146
Geometry Grp	1	1	1	1
Degree of Util (X)	0.533	0.441	0.445	0.257
Departure Headway (Hd)	5.805	5.77	5.845	6.363
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	615	619	611	568
Service Time	3.893	3.867	3.942	4.363
HCM Lane V/C Ratio	0.537	0.444	0.448	0.257
HCM Control Delay, s/veh	15.4	13.4	13.6	11.5
HCM Lane LOS	C	B	B	B
HCM 95th-tile Q	3.1	2.2	2.3	1

HCM 7th Signalized Intersection Summary
2: S. K St. & W. Paige Ave.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	265	30	23	270	113	41	199	52	70	105	68
Future Volume (veh/h)	113	265	30	23	270	113	41	199	52	70	105	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	123	288	33	25	293	123	45	216	57	76	114	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	154	528	61	47	325	137	72	797	206	96	636	385
Arrive On Green	0.09	0.34	0.34	0.03	0.28	0.28	0.04	0.30	0.30	0.06	0.32	0.32
Sat Flow, veh/h	1682	1554	178	1682	1176	494	1682	2641	681	1682	2009	1216
Grp Volume(v), veh/h	123	0	321	25	0	416	45	135	138	76	94	94
Grp Sat Flow(s),veh/h/ln	1682	0	1732	1682	0	1670	1682	1678	1644	1682	1678	1548
Q Serve(g_s), s	4.7	0.0	9.9	1.0	0.0	15.8	1.7	4.0	4.2	2.9	2.7	2.9
Cycle Q Clear(g_c), s	4.7	0.0	9.9	1.0	0.0	15.8	1.7	4.0	4.2	2.9	2.7	2.9
Prop In Lane	1.00		0.10	1.00		0.30	1.00		0.41	1.00		0.79
Lane Grp Cap(c), veh/h	154	0	589	47	0	462	72	507	496	96	531	490
V/C Ratio(X)	0.80	0.00	0.55	0.53	0.00	0.90	0.63	0.27	0.28	0.79	0.18	0.19
Avail Cap(c_a), veh/h	191	0	589	128	0	494	130	507	496	130	531	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	0.0	17.6	31.6	0.0	23.0	31.0	17.5	17.5	30.7	16.3	16.4
Incr Delay (d2), s/veh	17.1	0.0	1.0	9.1	0.0	18.8	8.7	1.3	1.4	20.4	0.7	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	3.4	0.5	0.0	7.6	0.8	1.5	1.5	1.6	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.5	0.0	18.7	40.7	0.0	41.8	39.8	18.8	18.9	51.1	17.0	17.3
LnGrp LOS	D		B	D		D	D	B	B	D	B	B
Approach Vol, veh/h		444			441			318			264	
Approach Delay, s/veh		26.4			41.7			21.8			26.9	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	24.4	6.3	26.9	7.3	25.4	10.5	22.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	19.9	5.0	22.0	5.1	19.9	7.5	19.5
Max Q Clear Time (g_c+I1), s	4.9	6.2	3.0	11.9	3.7	4.9	6.7	17.8
Green Ext Time (p_c), s	0.0	1.1	0.0	1.2	0.0	0.7	0.0	0.4

Intersection Summary	
HCM 7th Control Delay, s/veh	30.1
HCM 7th LOS	C

HCM 7th Signalized Intersection Summary
3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave.

04/04/2025

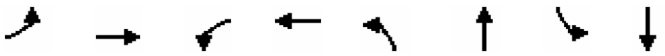
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	433	46	216	434	135	48	76	127	104	122	31
Future Volume (veh/h)	39	433	46	216	434	135	48	76	127	104	122	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	461	49	230	462	144	51	81	135	111	130	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	390	912	766	413	912	773	497	656	556	504	656	551
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	814	1870	1570	888	1870	1585	1215	1870	1585	1165	1870	1571
Grp Volume(v), veh/h	41	461	49	230	462	144	51	81	135	111	130	33
Grp Sat Flow(s),veh/h/ln	814	1870	1570	888	1870	1585	1215	1870	1585	1165	1870	1571
Q Serve(g_s), s	2.0	9.3	0.9	13.2	9.3	2.8	1.7	1.6	3.4	4.0	2.7	0.8
Cycle Q Clear(g_c), s	11.4	9.3	0.9	22.6	9.3	2.8	4.4	1.6	3.4	5.6	2.7	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	390	912	766	413	912	773	497	656	556	504	656	551
V/C Ratio(X)	0.11	0.51	0.06	0.56	0.51	0.19	0.10	0.12	0.24	0.22	0.20	0.06
Avail Cap(c_a), veh/h	454	1059	890	483	1059	898	497	656	556	504	656	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	9.7	7.5	17.4	9.7	8.0	14.1	12.3	12.8	14.2	12.6	12.0
Incr Delay (d2), s/veh	0.1	0.4	0.0	1.2	0.4	0.1	0.4	0.4	1.0	1.0	0.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.9	0.2	2.3	2.8	0.7	0.5	0.6	1.1	1.0	1.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.7	10.1	7.6	18.5	10.1	8.1	14.5	12.6	13.9	15.2	13.3	12.2
LnGrp LOS	B	B	A	B	B	A	B	B	B	B	B	B
Approach Vol, veh/h		551			836			267			274	
Approach Delay, s/veh		10.2			12.1			13.6			13.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		24.0		31.6		24.0		31.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		31.5		19.5		31.5				
Max Q Clear Time (g_c+I1), s		6.4		13.4		7.6		24.6				
Green Ext Time (p_c), s		0.8		2.9		0.9		2.6				

Intersection Summary												
HCM 7th Control Delay, s/veh			12.0									
HCM 7th LOS			B									

Queues

2: S. K St. & W. Paige Ave. 04/04/2025



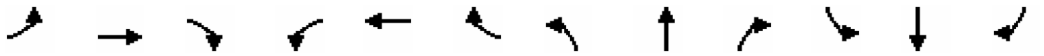
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	123	321	25	416	45	273	76	188
v/c Ratio	0.63	0.51	0.19	0.85	0.33	0.25	0.55	0.16
Control Delay (s/veh)	47.7	20.3	34.2	40.8	37.8	16.5	49.7	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.7	20.3	34.2	40.8	37.8	16.5	49.7	12.2
Queue Length 50th (ft)	52	86	10	158	19	39	33	18
Queue Length 95th (ft)	#129	190	33	#313	49	68	#92	42
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	202	714	135	549	137	1074	137	1146
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.45	0.19	0.76	0.33	0.25	0.55	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	41	461	49	230	462	144	51	81	135	111	130	33
v/c Ratio	0.15	0.61	0.08	0.83	0.61	0.20	0.10	0.11	0.19	0.21	0.17	0.05
Control Delay (s/veh)	9.4	14.4	3.0	38.8	14.4	2.4	13.1	12.7	4.1	14.0	13.1	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.4	14.4	3.0	38.8	14.4	2.4	13.1	12.7	4.1	14.0	13.1	6.0
Queue Length 50th (ft)	7	96	0	55	96	0	9	14	0	20	23	0
Queue Length 95th (ft)	21	161	12	#159	161	21	34	47	31	64	69	16
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	437	1217	1015	441	1217	1084	507	753	720	526	753	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.38	0.05	0.52	0.38	0.13	0.10	0.11	0.19	0.21	0.17	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

This page intentionally left blank.

Appendix I

10-Year Horizon (Year 2035) Plus Project Conditions Worksheets

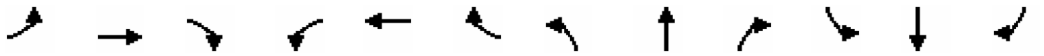
Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	145	59	38	121	34	56	96	50	34	92	17
Future Vol, veh/h	24	145	59	38	121	34	56	96	50	34	92	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	26	158	64	41	132	37	61	104	54	37	100	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.3	10.9	11.2	10.5
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	11%	20%	24%
Vol Thru, %	48%	64%	63%	64%
Vol Right, %	25%	26%	18%	12%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	202	228	193	143
LT Vol	56	24	38	34
Through Vol	96	145	121	92
RT Vol	50	59	34	17
Lane Flow Rate	220	248	210	155
Geometry Grp	1	1	1	1
Degree of Util (X)	0.332	0.364	0.315	0.242
Departure Headway (Hd)	5.438	5.281	5.405	5.615
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	661	682	665	639
Service Time	3.478	3.32	3.445	3.66
HCM Lane V/C Ratio	0.333	0.364	0.316	0.243
HCM Control Delay, s/veh	11.2	11.3	10.9	10.5
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	1.5	1.7	1.3	0.9

HCM 7th Signalized Intersection Summary
2: S. K St. & W. Paige Ave.

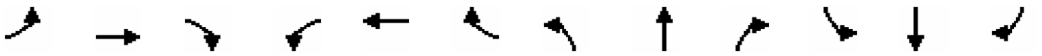


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	281	41	62	206	129	23	157	41	68	132	70
Future Volume (veh/h)	102	281	41	62	206	129	23	157	41	68	132	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722	1722
Adj Flow Rate, veh/h	110	302	44	67	222	139	25	169	44	73	142	75
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	12	12	12	12	12	12	12	12	12	12	12	12
Cap, veh/h	137	418	61	91	255	159	46	788	200	96	703	349
Arrive On Green	0.08	0.28	0.28	0.06	0.26	0.26	0.03	0.30	0.30	0.06	0.33	0.33
Sat Flow, veh/h	1640	1469	214	1640	990	620	1640	2585	655	1640	2099	1043
Grp Volume(v), veh/h	110	0	346	67	0	361	25	105	108	73	109	108
Grp Sat Flow(s),veh/h/ln	1640	0	1683	1640	0	1611	1640	1636	1604	1640	1636	1506
Q Serve(g_s), s	4.0	0.0	11.2	2.4	0.0	13.0	0.9	2.9	3.0	2.7	2.9	3.1
Cycle Q Clear(g_c), s	4.0	0.0	11.2	2.4	0.0	13.0	0.9	2.9	3.0	2.7	2.9	3.1
Prop In Lane	1.00		0.13	1.00		0.39	1.00		0.41	1.00		0.69
Lane Grp Cap(c), veh/h	137	0	479	91	0	414	46	499	489	96	548	504
V/C Ratio(X)	0.80	0.00	0.72	0.73	0.00	0.87	0.54	0.21	0.22	0.76	0.20	0.21
Avail Cap(c_a), veh/h	149	0	513	135	0	477	135	499	489	135	548	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	19.5	28.2	0.0	21.6	29.1	15.7	15.7	28.2	14.4	14.5
Incr Delay (d2), s/veh	25.0	0.0	4.6	10.7	0.0	14.6	9.3	1.0	1.0	14.9	0.8	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	4.2	1.1	0.0	5.7	0.4	1.0	1.1	1.3	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.3	0.0	24.2	38.9	0.0	36.2	38.4	16.6	16.8	43.1	15.2	15.5
LnGrp LOS	D		C	D		D	D	B	B	D	B	B
Approach Vol, veh/h		456			428			238			290	
Approach Delay, s/veh		30.9			36.6			19.0			22.3	
Approach LOS		C			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.0	23.0	7.9	21.8	6.2	24.8	9.6	20.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.0	18.5	5.0	18.5	5.5	18.0
Max Q Clear Time (g_c+I1), s	4.7	5.0	4.4	13.2	2.9	5.1	6.0	15.0
Green Ext Time (p_c), s	0.0	0.8	0.0	0.8	0.0	0.8	0.0	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	28.9
HCM 7th LOS	C

HCM 7th Signalized Intersection Summary
3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	485	61	71	327	121	81	99	204	111	70	28
Future Volume (veh/h)	26	485	61	71	327	121	81	99	204	111	70	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	31	571	72	84	385	142	95	116	240	131	82	33
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	387	784	660	280	784	664	608	721	611	505	721	611
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	869	1856	1563	779	1856	1572	1267	1856	1572	1017	1856	1572
Grp Volume(v), veh/h	31	571	72	84	385	142	95	116	240	131	82	33
Grp Sat Flow(s),veh/h/ln	869	1856	1563	779	1856	1572	1267	1856	1572	1017	1856	1572
Q Serve(g_s), s	1.3	12.2	1.3	4.8	7.2	2.7	2.5	1.9	5.2	4.6	1.3	0.6
Cycle Q Clear(g_c), s	8.5	12.2	1.3	17.0	7.2	2.7	3.8	1.9	5.2	6.5	1.3	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	387	784	660	280	784	664	608	721	611	505	721	611
V/C Ratio(X)	0.08	0.73	0.11	0.30	0.49	0.21	0.16	0.16	0.39	0.26	0.11	0.05
Avail Cap(c_a), veh/h	431	877	739	319	877	743	608	721	611	505	721	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	11.5	8.3	18.6	10.0	8.7	10.5	9.5	10.5	11.6	9.3	9.1
Incr Delay (d2), s/veh	0.1	2.7	0.1	0.6	0.5	0.2	0.5	0.5	1.9	1.2	0.3	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.1	0.3	0.7	2.1	0.7	0.6	0.7	1.7	1.0	0.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.2	14.2	8.4	19.2	10.5	8.9	11.1	10.0	12.4	12.9	9.6	9.3
LnGrp LOS	B	B	A	B	B	A	B	A	B	B	A	A
Approach Vol, veh/h		674			611			451			246	
Approach Delay, s/veh		13.5			11.3			11.5			11.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		24.6		23.0		24.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.5		22.5		18.5		22.5				
Max Q Clear Time (g_c+I1), s		7.2		14.2		8.5		19.0				
Green Ext Time (p_c), s		1.3		2.5		0.7		1.1				

Intersection Summary												
HCM 7th Control Delay, s/veh			12.1									
HCM 7th LOS			B									

Queues

2: S. K St. & W. Paige Ave. 04/04/2025



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	110	346	67	361	25	213	73	217
v/c Ratio	0.70	0.67	0.47	0.78	0.17	0.20	0.51	0.18
Control Delay (s/veh)	57.0	27.2	41.7	32.3	31.2	14.6	44.3	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.0	27.2	41.7	32.3	31.2	14.6	44.3	11.0
Queue Length 50th (ft)	44	118	26	113	10	26	29	16
Queue Length 95th (ft)	#124	#232	#75	#237	30	51	#83	46
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	157	590	143	544	143	1057	143	1224
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.59	0.47	0.66	0.17	0.20	0.51	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	31	571	72	84	385	142	95	116	240	131	82	33
v/c Ratio	0.10	0.78	0.11	0.48	0.53	0.20	0.18	0.15	0.32	0.26	0.11	0.05
Control Delay (s/veh)	8.9	20.5	3.5	20.3	13.2	2.8	11.4	10.8	4.5	12.3	10.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.9	20.5	3.5	20.3	13.2	2.8	11.4	10.8	4.5	12.3	10.5	4.9
Queue Length 50th (ft)	5	124	1	15	73	0	16	20	6	23	14	0
Queue Length 95th (ft)	16	197	15	45	120	19	41	46	38	54	35	12
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	403	912	788	220	912	847	528	750	756	511	750	657
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.63	0.09	0.38	0.42	0.17	0.18	0.15	0.32	0.26	0.11	0.05

Intersection Summary

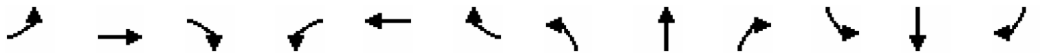
Intersection	
Intersection Delay, s/veh	17.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	165	77	49	153	56	82	158	70	40	85	11
Future Vol, veh/h	16	165	77	49	153	56	82	158	70	40	85	11
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	19	199	93	59	184	67	99	190	84	48	102	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	16.8	17.1	20.6	13.2
HCM LOS	C	C	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	6%	19%	29%
Vol Thru, %	51%	64%	59%	63%
Vol Right, %	23%	30%	22%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	310	258	258	136
LT Vol	82	16	49	40
Through Vol	158	165	153	85
RT Vol	70	77	56	11
Lane Flow Rate	373	311	311	164
Geometry Grp	1	1	1	1
Degree of Util (X)	0.654	0.546	0.552	0.315
Departure Headway (Hd)	6.308	6.327	6.396	6.929
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	571	569	563	516
Service Time	4.368	4.393	4.46	5.006
HCM Lane V/C Ratio	0.653	0.547	0.552	0.318
HCM Control Delay, s/veh	20.6	16.8	17.1	13.2
HCM Lane LOS	C	C	C	B
HCM 95th-tile Q	4.7	3.3	3.3	1.3

HCM 7th Signalized Intersection Summary
2: S. K St. & W. Paige Ave.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	285	31	23	302	113	50	199	52	70	105	85
Future Volume (veh/h)	126	285	31	23	302	113	50	199	52	70	105	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	142	320	35	26	339	127	56	224	58	79	118	96
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	175	589	64	47	368	138	79	757	192	99	543	408
Arrive On Green	0.10	0.38	0.38	0.03	0.30	0.30	0.05	0.29	0.29	0.06	0.30	0.30
Sat Flow, veh/h	1682	1562	171	1682	1220	457	1682	2652	672	1682	1827	1371
Grp Volume(v), veh/h	142	0	355	26	0	466	56	140	142	79	108	106
Grp Sat Flow(s),veh/h/ln	1682	0	1733	1682	0	1677	1682	1678	1646	1682	1678	1520
Q Serve(g_s), s	5.9	0.0	11.5	1.1	0.0	19.3	2.4	4.7	4.9	3.3	3.5	3.8
Cycle Q Clear(g_c), s	5.9	0.0	11.5	1.1	0.0	19.3	2.4	4.7	4.9	3.3	3.5	3.8
Prop In Lane	1.00		0.10	1.00		0.27	1.00		0.41	1.00		0.90
Lane Grp Cap(c), veh/h	175	0	654	47	0	505	79	479	469	99	499	452
V/C Ratio(X)	0.81	0.00	0.54	0.55	0.00	0.92	0.71	0.29	0.30	0.80	0.22	0.24
Avail Cap(c_a), veh/h	199	0	654	129	0	525	119	479	469	129	499	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	0.0	17.5	34.5	0.0	24.3	33.8	20.0	20.1	33.4	19.0	19.1
Incr Delay (d2), s/veh	19.6	0.0	0.9	9.5	0.0	21.5	11.2	1.5	1.7	22.6	1.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	4.0	0.5	0.0	9.6	1.1	1.8	1.8	1.9	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.1	0.0	18.4	44.0	0.0	45.8	44.9	21.6	21.7	56.0	19.9	20.3
LnGrp LOS	D		B	D		D	D	C	C	E	B	C
Approach Vol, veh/h		497			492			338			293	
Approach Delay, s/veh		27.8			45.7			25.5			29.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	25.0	6.5	31.6	7.9	25.9	12.0	26.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	20.5	5.5	25.5	5.1	20.9	8.5	22.5
Max Q Clear Time (g_c+I1), s	5.3	6.9	3.1	13.5	4.4	5.8	7.9	21.3
Green Ext Time (p_c), s	0.0	1.1	0.0	1.4	0.0	0.9	0.0	0.3

Intersection Summary	
HCM 7th Control Delay, s/veh	33.1
HCM 7th LOS	C

HCM 7th Signalized Intersection Summary
3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	433	46	216	434	135	48	76	127	104	122	31
Future Volume (veh/h)	39	433	46	216	434	135	48	76	127	104	122	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	41	461	49	230	462	144	51	81	135	111	130	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	390	912	766	413	912	773	497	656	556	504	656	551
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	814	1870	1570	888	1870	1585	1215	1870	1585	1165	1870	1571
Grp Volume(v), veh/h	41	461	49	230	462	144	51	81	135	111	130	33
Grp Sat Flow(s),veh/h/ln	814	1870	1570	888	1870	1585	1215	1870	1585	1165	1870	1571
Q Serve(g_s), s	2.0	9.3	0.9	13.2	9.3	2.8	1.7	1.6	3.4	4.0	2.7	0.8
Cycle Q Clear(g_c), s	11.4	9.3	0.9	22.6	9.3	2.8	4.4	1.6	3.4	5.6	2.7	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	390	912	766	413	912	773	497	656	556	504	656	551
V/C Ratio(X)	0.11	0.51	0.06	0.56	0.51	0.19	0.10	0.12	0.24	0.22	0.20	0.06
Avail Cap(c_a), veh/h	454	1059	890	483	1059	898	497	656	556	504	656	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	9.7	7.5	17.4	9.7	8.0	14.1	12.3	12.8	14.2	12.6	12.0
Incr Delay (d2), s/veh	0.1	0.4	0.0	1.2	0.4	0.1	0.4	0.4	1.0	1.0	0.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.9	0.2	2.3	2.8	0.7	0.5	0.6	1.1	1.0	1.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.7	10.1	7.6	18.5	10.1	8.1	14.5	12.6	13.9	15.2	13.3	12.2
LnGrp LOS	B	B	A	B	B	A	B	B	B	B	B	B
Approach Vol, veh/h		551			836			267			274	
Approach Delay, s/veh		10.2			12.1			13.6			13.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		24.0		31.6		24.0		31.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		19.5		31.5		19.5		31.5				
Max Q Clear Time (g_c+I1), s		6.4		13.4		7.6		24.6				
Green Ext Time (p_c), s		0.8		2.9		0.9		2.6				

Intersection Summary		
HCM 7th Control Delay, s/veh		12.0
HCM 7th LOS		B

Queues

2: S. K St. & W. Paige Ave. 04/04/2025



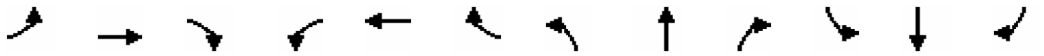
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	142	355	26	466	56	282	79	214
v/c Ratio	0.74	0.49	0.20	0.91	0.47	0.29	0.62	0.20
Control Delay (s/veh)	56.8	19.6	36.8	48.5	48.1	18.8	57.0	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.8	19.6	36.8	48.5	48.1	18.8	57.0	11.9
Queue Length 50th (ft)	65	101	12	196	26	45	37	21
Queue Length 95th (ft)	#151	214	35	#364	#68	75	#98	46
Internal Link Dist (ft)		5073		1113		887		926
Turn Bay Length (ft)	120		105		150		150	
Base Capacity (vph)	198	730	128	546	118	961	128	1054
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.49	0.20	0.85	0.47	0.29	0.62	0.20

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: N. E St. & W. Bardsley Ave. /W. Bardsley Ave. 04/04/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	41	461	49	230	462	144	51	81	135	111	130	33
v/c Ratio	0.15	0.61	0.08	0.83	0.61	0.20	0.10	0.11	0.19	0.21	0.17	0.05
Control Delay (s/veh)	9.4	14.4	3.0	38.8	14.4	2.4	13.1	12.7	4.1	14.0	13.1	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.4	14.4	3.0	38.8	14.4	2.4	13.1	12.7	4.1	14.0	13.1	6.0
Queue Length 50th (ft)	7	96	0	55	96	0	9	14	0	20	23	0
Queue Length 95th (ft)	21	161	12	#159	161	21	34	47	31	64	69	16
Internal Link Dist (ft)		2795			1033			1280			1610	
Turn Bay Length (ft)	75		75	75		75	135		50	135		75
Base Capacity (vph)	437	1217	1015	441	1217	1084	507	753	720	526	753	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.38	0.05	0.52	0.38	0.13	0.10	0.11	0.19	0.21	0.17	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

This page intentionally left blank.

Appendix J
VMT Analysis Screening

4CREEKS Design

March 5, 2025

Michael W. Miller, City Engineer
City of Tulare
411 E. Kern Avenue
Tulare, CA 93274
Via email: mmiller@tulare.ca.gov

Subject: VMT Analysis Memorandum for Proposed Fernandes Subdivision
City of Tulare, CA

This memorandum provides a vehicle miles traveled (VMT) analysis for the proposed Fernandes Subdivision (Project) residential development in the City of Tulare. The analysis was conducted in accordance with the requirements for transportation analysis under the California Environmental Quality Act (CEQA). The City of Tulare provided guidance on the preparation of VMT analyses in a memorandum dated June 26, 2020, which can be found as an attachment to this memorandum.

Background Information

Senate Bill 743 (SB 743) replaced level of service (LOS) for vehicle miles traveled (VMT) as the new performance measure used in CEQA transportation analysis. Land development projects are compared to various screening criteria and significance thresholds to determine if the level of VMT for the given project would be deemed to have significant impacts.

VMT Screening

The City of Tulare's VMT guidance memorandum provides a list of six types of projects that would qualify for screen out of VMT analysis because they are expected to cause less than significant impacts. Of the six project types (see attachment), the initial five would not apply to the proposed Project. The sixth, map-based screening was investigated further as part of this memorandum.

The City's VMT guidance memorandum includes a map showing the average trip distance by traffic analysis zone (TAZ), which is based on data provided by the regional transportation model maintained by the Tulare County Association of

Goverments (TCAG). If a project has an average trip distance that is 15% below the regional average, the project is considered to be in a low VMT area and is screened out from VMT analysis and mitigation.

As discussed in the City's VMT guidance memorandum, typically a project shown in a green TAZ in Figure 1 below is likely to meet acceptability thresholds unless there are specific project characteristics that would result in an overall increase in VMT. For general residential projects, the recommended threshold for the City of Tulare is if a project has an average trip distance that is 15% below existing regional average trip length. Per the City's VMT guidance memorandum, the County average trip distance in miles traveled is 11.48 miles.

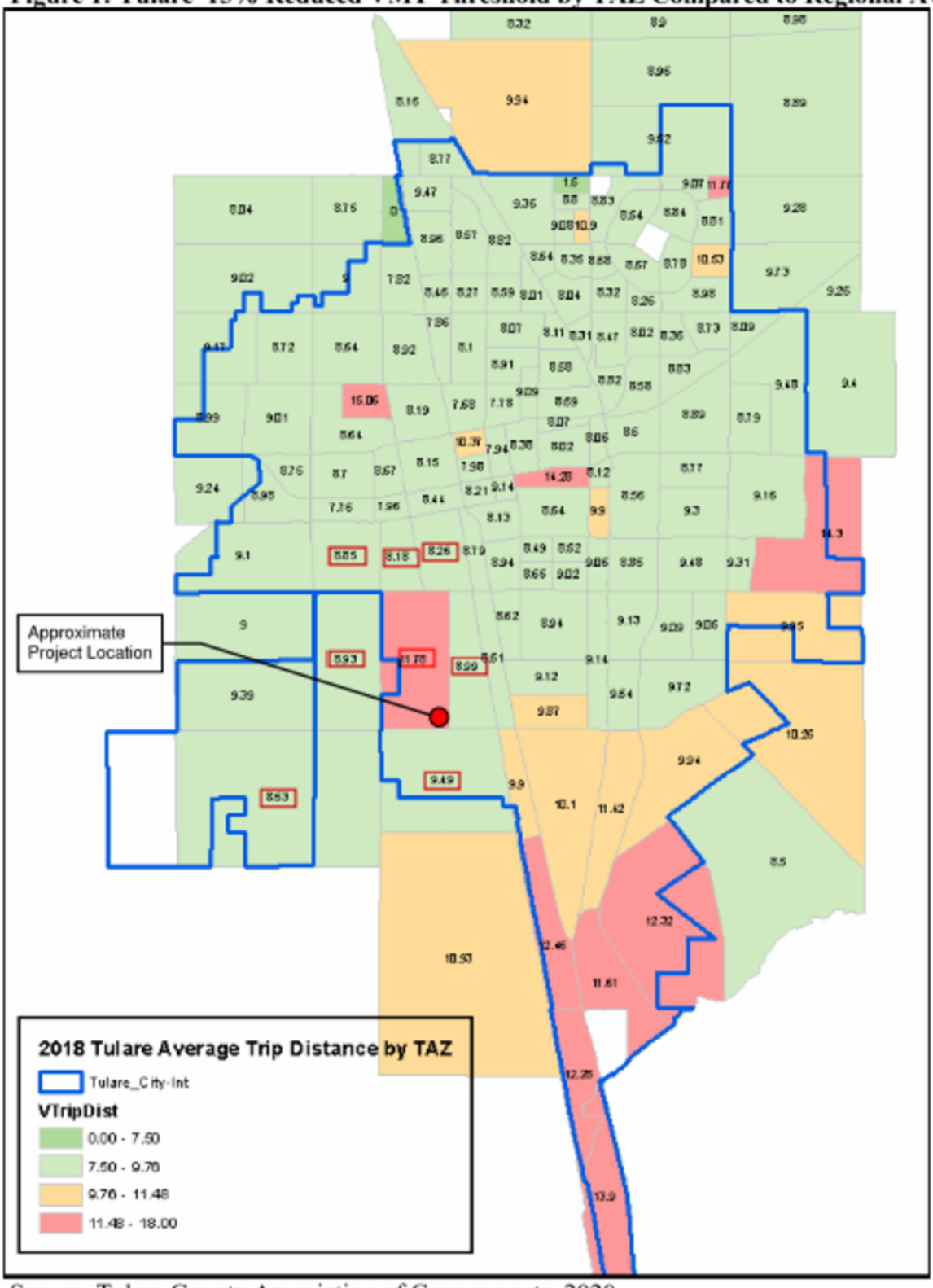
Figure 1 below shows the approximate Project location on the City's TAZ map. Most of the City of Tulare is within a low VMT area. However, there are isolated TAZ areas with unusually high VMT that do not appear to coincide with the land use of that area. This is the case for the TAZ where this project is located, see Figure 1. The land use in this area is comprised of low density residential and agricultural. Therefore, the high VMT in this area is assumed to be an anomaly of the modeling process, rather than a true indication of high VMT generation. Sometimes this anomaly occurs because of too little data due to minimal existing development on which the transportation model can be run.

To remove the anomaly from the modeling process, the average VMT of all surrounding TAZs was calculated. This method is appropriate because the Project is located in an isolated area with a high VMT. The VMT for all surrounding TAZs are indicated on Figure 1 below with a red box.

TAZ Average VMT = (8.85+8.18+8.26+8.93+11.78(Project)+8.99+8.53+9.49)/8=9.13 miles.

The averaged trip distance of the Project TAZ and all surround TAZs is 9.13 miles. The Project's average trip distance of 9.13 miles is 20.5% below the County's average trip distance in miles traveled (11.48 miles), so the screen out criteria of at least 15% below the regional average is met.

Figure 1: Tulare 15% Reduced VMT Threshold by TAZ Compared to Regional Average



Source: Tulare County Association of Governments, 2020.

Summary and Conclusion

The proposed Project is screened out of the requirement to conduct a VMT analysis on the basis of map-based screening. The Project has a less than significant impact and no mitigation measures are required.

Respectfully,



Lisa Wallis-Dutra, PE 71262, TE 1888, PTOE, RSP$_{I}$
Senior Traffic Engineer

Job No: 240849

Appendix H

Tribal Consultation Letter

February 13th, 2025

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8
Lemoore, CA 93245

Subject: **Tribal Cultural Resources under the California Environmental Quality Act. AB 52 Tribal Consultation for the Fernandes Tentative Subdivision**

Dear Chairperson,

The City of Tulare is currently reviewing an application submitted by Artemis Partners LLC for the project referenced above. We are requesting your review to determine if formal consultation is necessary under Public Resources Code Section 21080.3.1 (Assembly Bill 52). The project proposes to develop the property located on the north side of Paige Avenue (Tulare County Assessor's Parcel Numbers 174-030-008). The current zoning for these parcels is R-1-4, with a General Plan Designation of Low Density Residential. The proposed Tentative Subdivision Map (Vesting Map) outlines a plan to subdivide 19.58 acres of agricultural land into 120 lots of 4,000 – 7,000 square feet, accommodating the construction of 120 single-family residential dwellings.

The project site is situated within the Tulare USGS quadrangle, specifically in Section 15, Township 20S, Range 24E, Mount Diablo Base and Meridian (BDM&M). Attached are an aerial image of the project site and a copy of the proposed subdivision map for your reference.

In accordance with AB 52, Government Code §21080.3.1, we are requesting your review and comments regarding any potential impacts on cultural places significant to your tribe. Your input is important for the preparation of environmental documentation to ensure that important cultural places are identified and potential impacts are mitigated.

If we do not receive a response by **October 13th, 2025**, we will assume that your tribe has opted not to engage in consultation. Nonetheless, notifications about the availability of public hearings will continue to be provided. Please contact me at 559-684-3125 or via email at jreynaga@tulare.ca.gov with any questions.

Thank you for your attention to this matter.

Respectfully,

Julian Reynaga
Assistant Planner

Enclosures: Aerial Image, Site Plan

ARCHITECTURE | PLANNING | CIVIL | STRUCTURAL | SURVEYING

4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

FERNANDES SUBDIVISION

REQUIRED ENTITLEMENTS

- Tentative Subdivision Map

SITE INFORMATION

APN:	174-030-008
Acreage:	±19.58 AC
Jurisdiction:	City of Tulare
Current Use:	Farmland, Single Family Residential
Proposed Use:	Single-Family Residential
Zoning (Existing):	R-1-4
Zoning (Proposed):	R-1-4
General Plan (Existing):	Low Density Residential
General Plan (Proposed):	Low Density Residential

UTILITIES

Water:	City of Tulare
Stormwater:	City of Tulare
Sewer:	Tie-in to existing 27" line in Paige Ave
Electricity:	Southern California Edison
Natural Gas:	Southern California Gas
Telephone:	AT&T

TYPICAL LOT SIZES

Number of Lots:	120
Average Lot Size:	3,825 SF (45' X 85')
Minimum Lot Size:	3,823 SF
Maximum Lot Size:	6,745 SF
Gross Density:	6.13 DU/Acre

SET NOT FOR CONSTRUCTION

For planning purposes only, do not scale drawings

PROJECT DIRECTORY

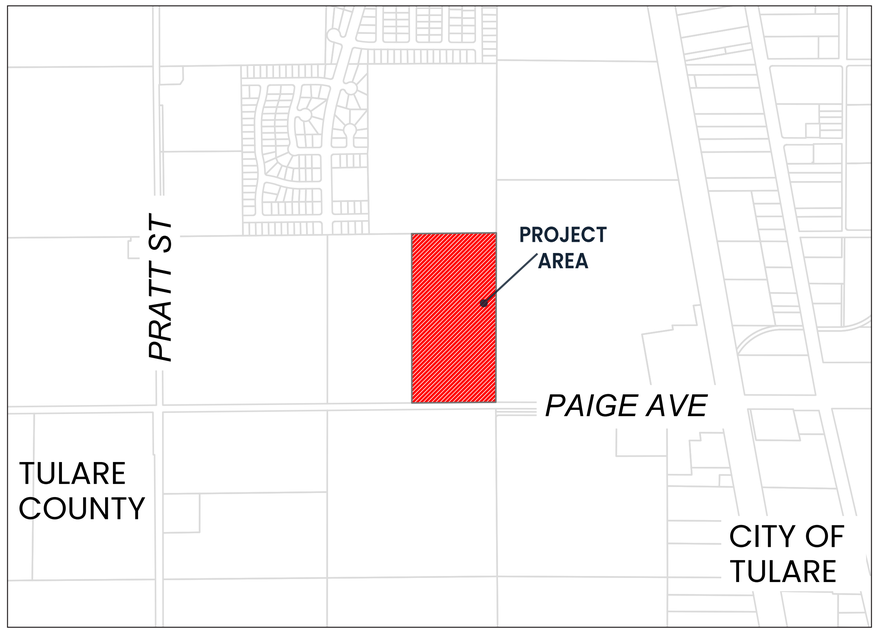
Applicant:
Artemis Partners, LLC
324 S. Santa Fe St., Ste. A
Visalia, CA 93292
Contact: Matt Ainley
Phone: (559) 737-3748

Owner:
BF Central Valley Holdings, LLC
18300 Redmond Way, Suite 120
Redmond, WA 98052
Contact: Shane Bouchard
Phone: (909) 600-4990

Agent:
Molly Baumeister, AICP (4Creeks, Inc.)
324 S Santa Fe St A
Visalia, CA 93292
Phone: (559) 802-3052
Contact: mollyb@4-creeks.com

Ellie Krantz (4Creeks, Inc.)
324 S Santa Fe St A
Visalia, CA 93292
Phone: (559) 802-3052
Contact: elliek@4-creeks.com

VICINITY MAP



SHEET INDEX

P1.0 Tentative Subdivision Map
P2.0 Details

VALOV PROPERTY
(NOT A PART)

LEKKERKERKER PROPERTY
(NOT A PART)

PARK/POND
37071 S.F.

AVENUE 1
AVENUE 2
AVENUE 3
AVENUE 4
AVENUE 5
58'

STREET 1
STREET 2

6'-7"FT BLOCK WALL

53' 36' 18'

2920 S.F.
LOT A

PAIGE AVENUE

2880 S.F.
LOT B

62'
40'

81' IOD TO
CITY OF TULARE

NORTH

80' 0' 80'

4CREEKS

324 S Santa Fe, STE A
Visalia, CA

559.802.3052
info@4-creeks.com
www.4-creeks.com

SET NOT FOR CONSTRUCTION
For planning purposes only, do not scale drawings

TENTATIVE SUBDIVISION MAP

P1.0