PEARL WOODS SUBDIVISION

DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

APRIL 2023

SCH NO.

PREPARED FOR:

City of Visalia
Community Development Department
315 East Acequia Avenue
Visalia, CA 93291

PREPARED BY:

Provost & Pritchard Consulting Group

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ACRONYMS

AB	Assembly Bill
APE	Area of Potential Effect
AQP	Air Quality Plan
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Modeling (software)
CARB	California Air Resources Board
CDFW	California Fish and Wildlife
CH_4	Methane
CNDDB	California Natural Diversity Database
CO_2	Carbon dioxide
County	Tulare County
dBA	A-weighted decibels
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
GAMAQI	Guidelines for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gas
GIS	Geographic Information System
IS	Initial Study
IS/MND	Initial Study/Mitigated Negative Declaration
km	kilometers
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
$MTCO_2e$	Metric tons of carbon dioxide equivalent
NAHC	Native American Heritage Commission
ND	Negative Declaration
NO_X	Nitrogen oxides
NRCS	Natural Resources Conservation Service
O_3	Ozone
PM_{10}	particulate matter 10 microns in size

CHAPTER 1 INTRODUCTION

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) on behalf of DR Horton to address the environmental effects of the Pearl Woods Subdivision (Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. The City of Visalia is the CEQA lead agency for this Project.

The site and the Project are described in detail in Chapter 2 Project Description.

1.1 REGULATORY INFORMATION

An Initial Study (IS) is a document prepared by a lead agency to determine whether a project may have a significant effect on the environment. In accordance with California Code of Regulations Title 14 (Chapter 3, Section 15000, *et seq.*)-- also known as the CEQA Guidelines--Section 15064 (a)(1) states that an environmental impact report (EIR) must be prepared if there is substantial evidence in light of the whole record that the Project under review may have a significant effect on the environment and should be further analyzed to determine mitigation measures or project alternatives that might avoid or reduce project impacts to less than significant levels. A negative declaration (ND) may be prepared instead if the lead agency finds that there is no substantial evidence in light of the whole record that the project may have a significant effect on the environment. An ND is a written statement describing the reasons why a proposed Project, not otherwise exempt from CEQA, would not have a significant effect on the environment and, therefore, why it would not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a ND or *mitigated* ND shall be prepared for a project subject to CEQA when either:

a. The IS shows there is no substantial evidence, in light of the whole record before the agency, that the proposed Project may have a significant effect on the environment, or
b. The IS identified potentially significant effects, but:
    1. Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed MND and IS is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur is prepared, and
    2. There is no substantial evidence, in light of the whole record before the agency, that the proposed Project as *revised* may have a significant effect on the environment.

1.2 DOCUMENT FORMAT

This IS/MND contains six chapters. Chapter 1 Introduction, provides an overview of the Project and the CEQA process. Chapter 2 Project Description, provides a detailed description of proposed Project components and objectives. Chapter 3 Determination, the Lead Agency's determination based upon this initial evaluation. Chapter 4 Environmental Impact Analysis presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the Project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. Chapter 5 Mitigation, Monitoring, and Reporting Program (MMRP), provides the proposed mitigation measures, implementation timelines, and the entity/agency responsible for ensuring implementation. Chapter 6 References details the documents and reports this document relies upon to provide its analysis.

The CalEEMod Output Files, Biological Evaluation, Cultural Resources Information, and Traffic Impact Study are provided as technical Appendix A: CalEEMod Output Files, Appendix B: Biological Evaluation, Appendix C: Cultural Resources Study, Appendix D: Traffic Impact Study, respectively, at the end of this document.

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

2.1.1 Project Title

Pearl Woods Subdivision

2.1.2 Lead Agency Name and Address

City of Visalia
Community Development Department, Planning Division
315 East Acequia Avenue
Visalia, California 93291

2.1.3 Contact Person and Phone Number

Lead Agency Contact

Brandon Smith, Principal Planner
(559) 713-4636

CEQA Consultant

Provost & Pritchard Consulting Group
Jarred Olsen, AICP, Associate Planner
(559) 636-1166 x535

2.1.4 Project Location

The Project is located in Visalia, California, approximately 200 miles southeast of Sacramento and 62 miles north of Bakersfield (see

Figure 2-1 and Figure 2-3). The Project site is located on Assessor's Parcel Number 127-030-038. The centroid of the Project site is 36° 18' 24.19" N, 119° 15' 01.48" W.

2.1.5 General Plan Designation and Zoning

Project Area	General Plan Designation	Zoning District
ONSITE	Low Density Residential	AE-20 (Existing) R-1-5 (Proposed)
ADJACENT LANDS	Low Density Residential	AE-20, R-1-5

2.1.6 Description of Project

The proposed Pearl Woods Subdivision pertains to approximately 67.70 gross acres of property located at the southwest corner of South McAuliff Street and East Cherry Avenue in the Southeast Quadrant of the City of Visalia.

This project proposes to subdivide and develop the property into 273 single family residential lots. The subdivision would be developed into three separate phases through a Tentative Parcel Map. The project site will be zoned to R-1-5 (Single-family residential zone- 5,000 square foot minimum site area) and annexed into the City of Visalia. Site improvements and construction of the homes will take place over approximately 21 months. The Project would construct its portions of the General Plan-designated collector McAuliff Street right-of-way.

The Project site currently contains an orchard and oak trees and the southeastern portion of the parcel is bounded by Cameron Creek. Ten oak trees will be removed as part of the project. As part of the Project and pursuant to the General Plan and the Waterways and Trails Master Plan, the proposal will dedicate the subject property's portion of the Segment 4 Preferred Trail Alignment, which would run adjacent to Cameron Creek. This trail would be a Class I Bike Trail and would maintain views of Cameron Creek. No development is proposed on the portion of property east of Cameron Creek. The Tulare Irrigation District (TID) Canal which runs along the western portion of the Area of Potential Effect (APE) would have a culvert constructed across the Canal to provide vehicular connectivity and to connect the APE to the adjacent property. The culvert would be approximately 7 feet across by up to 60 feet wide and would be located near Lot 31. The APE is identified as 67.7 acres for the purposes of the biological and cultural field surveys.

Farmland, consisting primarily of pecan and walnut orchards, is the prominent land use currently within the Project Site. These orchards will be chipped and removed as part of the project.

The project proposes a regional-serving stormwater drainage basin with its watershed being the quarter-section that this Project is located in. This location reduces the necessity of further-increasing storm main sizing at further-increasing depths, in addition to avoiding crossing under a railroad. Adjacent to the above-mentioned basin and trail, the Project proposes a General Plan-designated Neighborhood Park. The park and basin would be approximately 8.96 acres in size. These two features would be located in the 100-year floodplain portion of the site, adjacent to Cameron Creek.

2.1.7 Site and Surrounding Land Uses and Setting

Table 2-1: Existing Uses, General Plan Designation, & Zone Districts of Surrounding Properties

Direction from Project Site	Existing Use	General Plan Designation	Zone District
NORTH	Single-Family Residential	Low Density Residential	R-1-5 (City of Visalia)
EAST	Agriculture, Single-Family Residential	Agriculture	AE-20 (Tulare County)
SOUTH	Agriculture	Medium Density Residential, Low Density Residential, Public Institutional	AE-20 (Tulare County)
WEST	Single-Family Residential	Low Density Residential	R-1-5 (City of Visalia)

2.1.8 Other Public Agencies Whose Approval May Be Required

- Tulare County LAFCo

2.1.9 Consultation with California Native American Tribes

Public Resources Code Section 21080.3.1, *et seq. (codification of AB 52, 2013-14)*) requires that a lead agency, within 14 days of determining that it will undertake a project, must notify in writing any California Native American Tribe traditionally and culturally affiliated with the geographic area of the project if that Tribe has previously requested notification about projects in that geographic area. The notice must briefly describe the project and inquire whether the Tribe wishes to initiate request formal consultation. Tribes have 30 days from receipt of notification to request formal consultation. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an agreement regarding necessary mitigation or agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith, but no agreement will be made.

The City of Visalia, as the public lead agency, received a letter from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to PRC § 21080.3.1 (AB 52) officially requesting notification of Projects within the Santa Rosa Rancheria's geographic area of traditional and cultural affiliation. On May 16, 2022, the City sent the Tribe a formal letter including a Project description. In accordance with the law, the letter provided 30 days from receipt of the letter to request consultation in writing. No response was received. Further discussion of the AB 52 process can be found in the Tribal Cultural Resources Section (4.18).

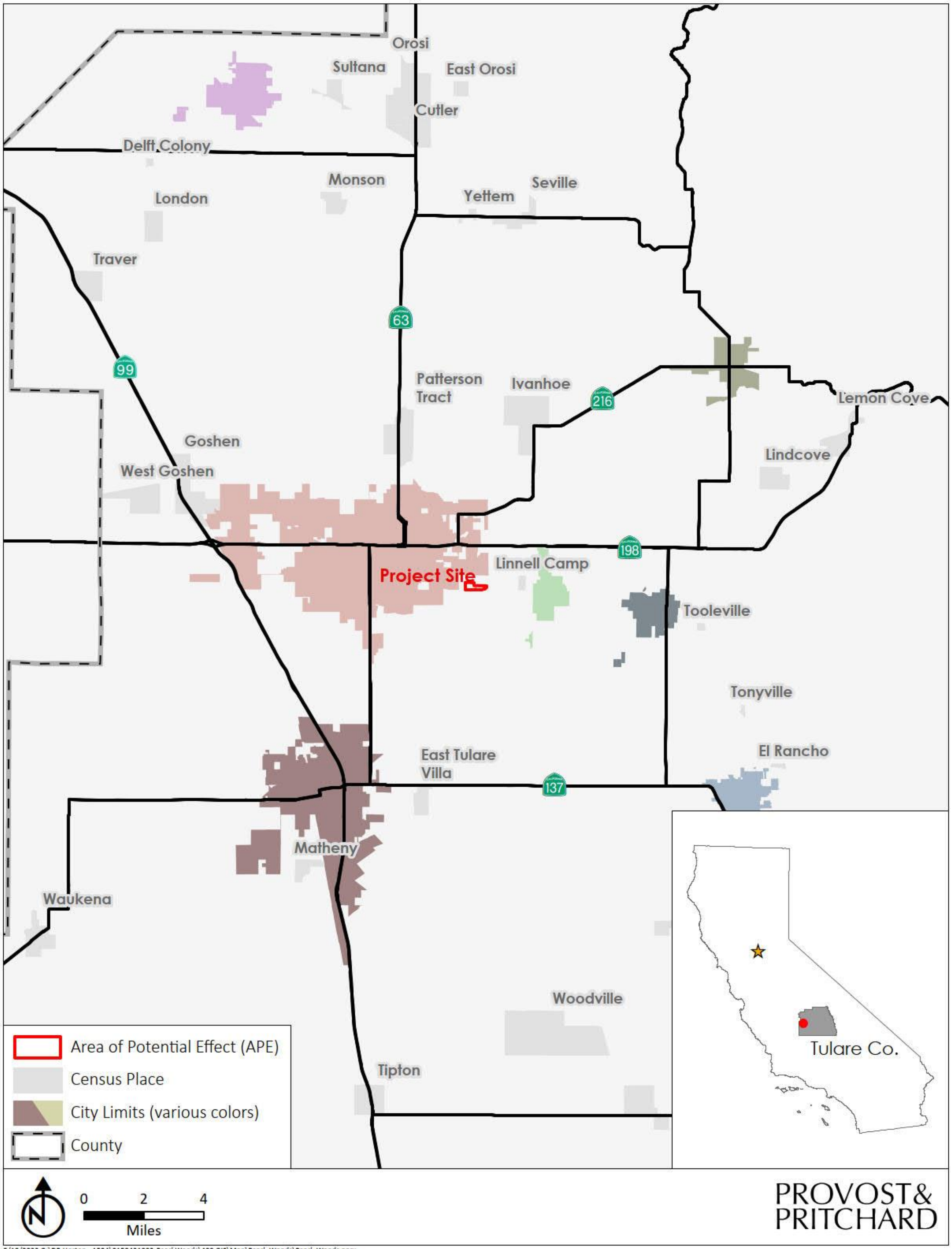

Figure 2-1: Regional Location Map

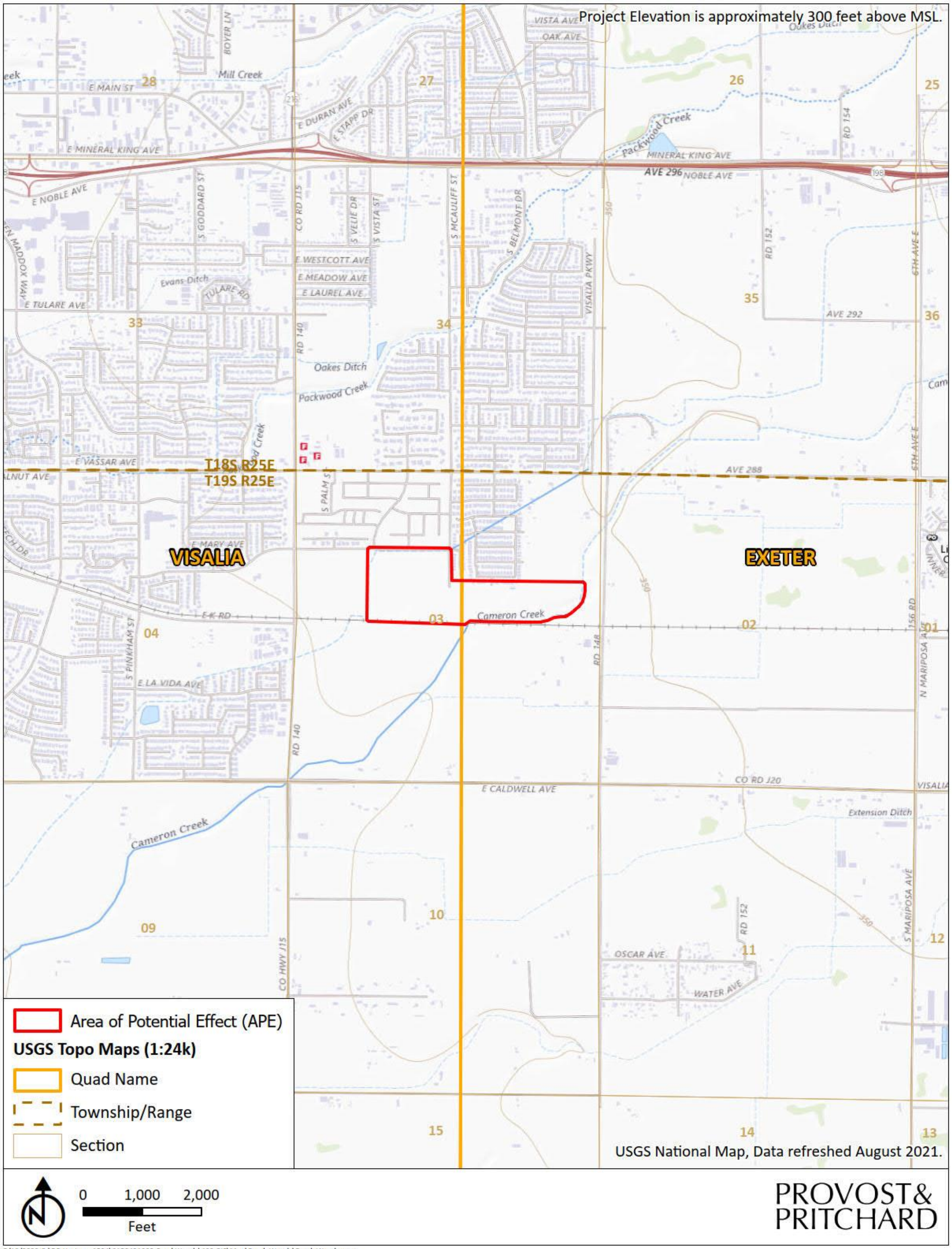

Figure 2-2: Topographic Quadrangle Map

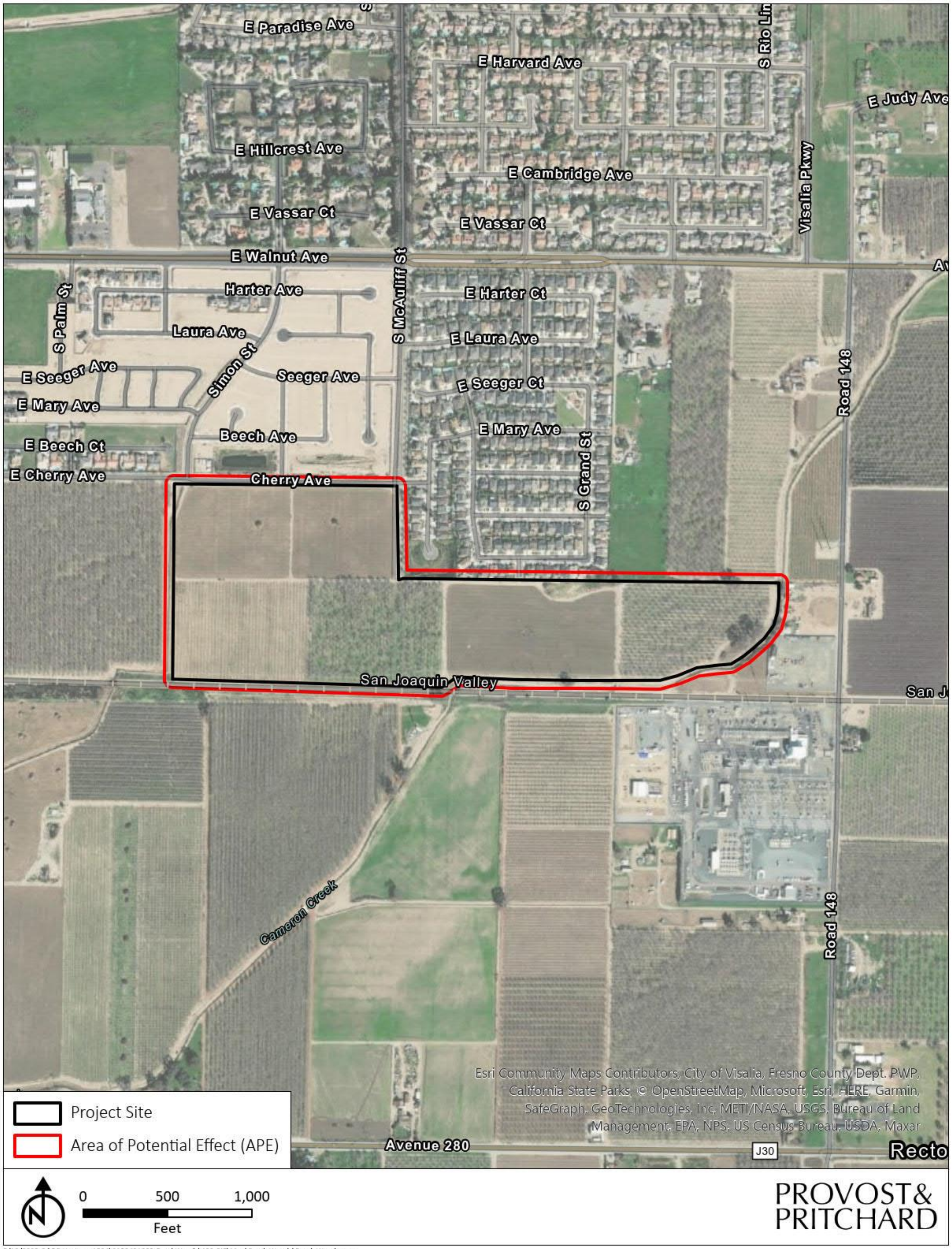

Figure 2-3: Aerial Image

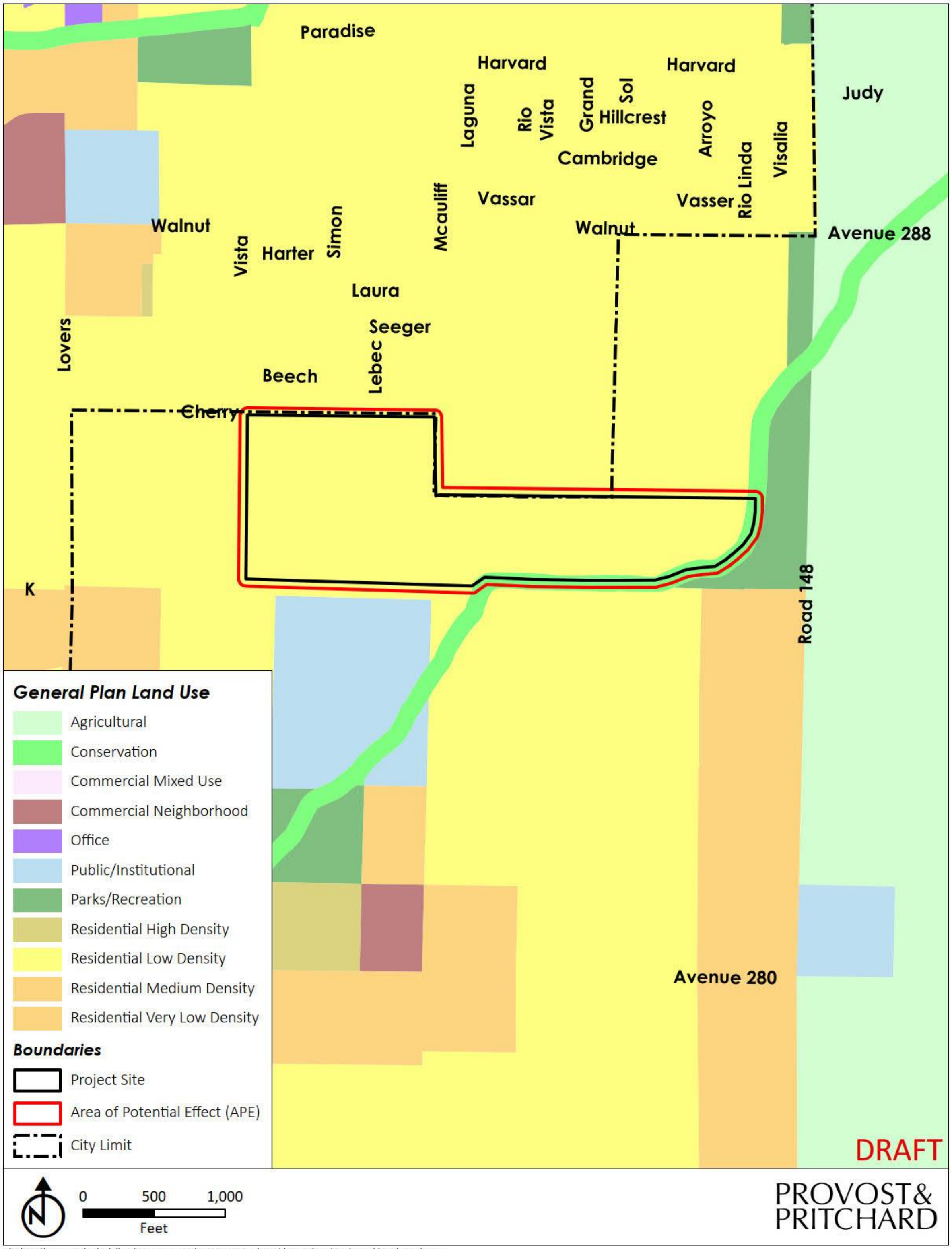

Figure 2-4: General Plan Land Use Designation Map

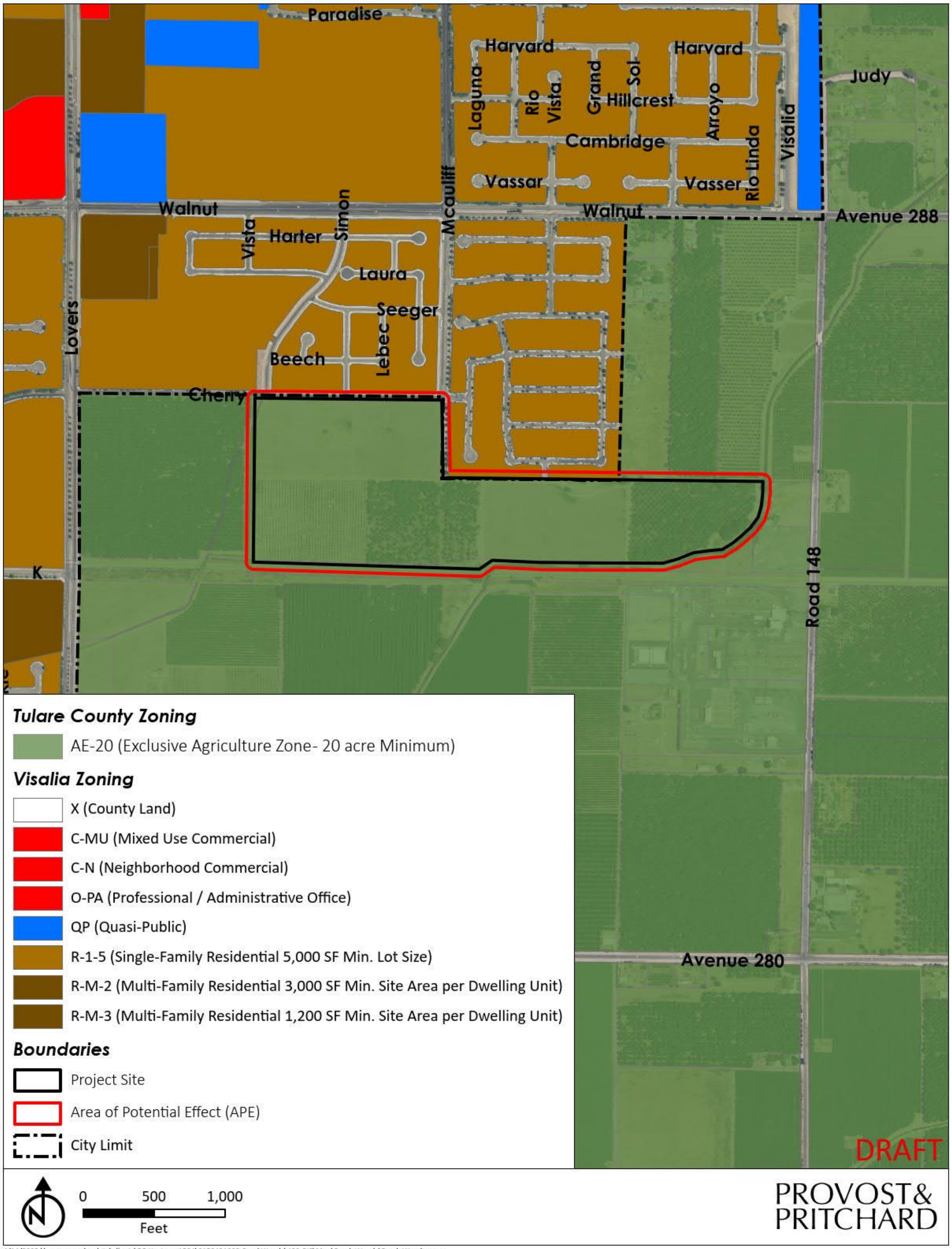

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Figure 2-5: Zone District Map

CHAPTER 3 DETERMINATION

3.1 POTENTIAL ENVIRONMENTAL IMPACTS

As indicated by the discussions of existing and baseline conditions, and impact analyses that follow in this Chapter, environmental factors not checked below would have no impacts or less than significant impacts resulting from the project. Environmental factors that are. checked below would have potentially significant impacts resulting from the project. Mitigation measures are recommended for each of the potentially significant impacts that would reduce the impact to less than significant.

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

The analyses of environmental impacts in Chapter 4 Impact Analysis result in an impact statement, which shall have the following meanings.

Potentially Significant Impact. This category is applicable if there is substantial evidence that an effect may be significant, and no feasible mitigation measures can be identified to reduce impacts to a less than significant level. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Less than Significant with Mitigation Incorporated. This category applies where the incorporation of mitigation measures would reduce an effect from a "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measure(s), and briefly explain how they would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

Less than Significant Impact. This category is identified when the proposed Project would result in impacts below the threshold of significance, and no mitigation measures are required.

No Impact. This category applies when a project would not create an impact in the specific environmental issue area. "No Impact" answers do not require a detailed explanation if they are adequately supported by the information sources cited by the lead agency, which show that the impact does not apply to the specific project (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).

3.2 DETERMINATION

On the basis of this initial evaluation (to be completed by the Lead Agency):

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

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

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

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

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

______________________________ ______________________________
Signature Date

____
Printed Name/Position

CHAPTER 4 ENVIRONMENTAL IMPACT ANALYSIS

4.1 AESTHETICS

Table 4-1: Aesthetics Impacts

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a 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 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?	☐	☐	☒	☐

4.1.1 Baseline Conditions

The Project is located along the floor of the San Joaquin Valley in Tulare County adjacent to the southeast quadrant of the City of Visalia. The San Joaquin Valley, including Tulare County, is known for its prominent agricultural land; and has been termed the "breadbasket of the world." To the east lies the Sierra Nevada Mountain range and Sequoia National Park, which is known for its large mountains, rugged foothills, deep canyons, vast caverns, and the world's largest trees, the giant sequoias.[1] California State Route (SR) 198, which runs east-west through Visalia, connects to SR 99, located near the western boundary of Visalia's city limits. SR 99 runs north-south. The 44-mile stretch of SR 198 between SR 99 and Sequoia National Park is classified as eligible for State Scenic Highway status but is not officially designated.[2] Regional views from the valley floor are generally limited due to the flatness of the region, however, on clear days the Sierra

[1] (National Park Service 2022)

[2] (CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers 2014)

Nevada's are visible to the east. The City of Visalia is characterized as a freestanding city with a small town feel but also with big city amenities.

The Project site itself currently contains an orchard and oak trees and the southeastern portion of the parcel is bounded by Cameron Creek. To the north lies a residential subdivision and rural residences. To the east are more orchards, to the west orchard and a canal, owned and operated by TID and to the south there lies agricultural land and a Southern California Edison (SCE) rector substation. There are no historic buildings located on or near the Project site.

4.1.2 Applicable Regulations

State

California Environmental Quality Act

CEQA establishes that it is the policy of the State to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic, and historic environmental qualities." [California Public Resources Code Section 21001(b)].

California Scenic Highways Program

Recognizing the value of scenic areas and the value of views from roads in such areas, the State Legislature established the California Scenic Highway Program in 1963. Under this program, State highway segments are designated as eligible for inclusion as scenic routes. Once the local jurisdictions through which a roadway passes have established a corridor protection program, the State may officially designate a roadway as a scenic route. Projects must then be evaluated for their impact on the scenic qualities of the corridor. Each designated corridor is monitored by the State and its designation may be revoked if a local government fails to enforce the provisions of the corridor protection program.

As stated in the Environmental Setting above, SR 198 through the Project vicinity is classified as eligible for State Scenic Highway status but is not officially designated.

Local

City of Visalia General Plan

- Policy LU-P-37: Adopt specific development standards for scenic entryways (gateways) and roadway corridors into the City, including special setback and landscape standards, open space and park development, and/or land use designations.
- Policy LU-P-41: Use Mill, Packwood and Cameron Creeks and other waterways as natural amenities and links between neighborhoods.
- Policy LU-P-43: Develop land use and site design measures for areas adjacent to high-voltage power facilities. Measures will include landscape buffers and mandatory setbacks from substations and transmission towers and lines.
- Policy LU-P-59: Ensure that natural and open space features, such as Valley Oak trees and community waterways, are treated as special site amenities as part of any residential development.
- OSC-P-13: Require that new development along waterways maintain a visual orientation and active interface with waterways. Develop design guidelines to be used for review and approval of subdivision and development proposals to illustrate how this can be accomplished for different land uses in various geographic settings.

- OSC-P-34: Enhance views and public access to Planning Area waterways and other significant features such as Valley Oak groves consistent with flood protection, irrigation water conveyance, habitat preservation and recreation planning policies.
- OSC-P-35: Use native trees in street and public landscaping designs, where appropriate, to preserve Visalia's character.

City of Visalia Municipal Code

Section 17.30.015.H – Lighting: No on-site lighting shall directly or indirectly illuminate adjacent properties or the public street which provides access. The lights and standards to be used for the Project shall be subject to the requirements set forth by the City's Site Plan Review Committee.

City of Visalia Valley Oak Ordinance

The City's Valley Oak Ordinance provides basic standards, measures, and compliance requirements for the preservation and protection of native Valley oak trees and landmark trees. The Ordinance prohibits destruction of Valley oak trees except with an oak tree removal permit. A permit may be granted only if it is found that the oak tree is in danger of falling on a structure or is host for a plant, pest, or disease endangering other species; if removal is necessary to allow the reasonable enjoyment of private property; or if urban forestry or land management practices warrant removal. If a tree removal permit is granted, the tree must either be replaced by planting new oak trees at the specified mitigation ratio on the same property, or by paying mitigation fees to be used by the City to plant new oak trees at other locations, consistent with the City Oak Tree Mitigation Policy.[3]

4.1.3 Impact Analysis

a) Have substantial adverse effect on a scenic vista?

Less than Significant Impact. Views of the Sierra Nevada Mountain range to the east and the surrounding agricultural lands help showcase the scenery from the Project. The development of residential homes would align with the development to the north of the Project site and would not significantly impact views of the Sierra Nevada. As mentioned earlier, Cameron Creek runs adjacent to a portion of the Project. As part of the Project and pursuant to the General Plan and the Waterways and Trails Master Plan, the proposal would dedicate the subject property's portion of the Segment 4 Preferred Trail Alignment, which would run adjacent to Cameroon Creek. This trail would be a Class I Bike Trail and would maintain views of Cameron Creek. Impacts to a scenic vista would be less than significant.

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

Less than Significant Impact. There are no scenic resources onsite; however, there are oak trees on the property that have a scenic quality. The City of Visalia's ordinance prohibits destruction of Valley oak trees except with an oak tree removal permit. The Project proposes to remove ten oak trees, however the Project would have to comply with tree removal permit conditions. The Project would not impact a state scenic highway as one does not exist in the vicinity of the Project site. Impacts would be less than significant.

[3] (City of Visalia 2007)

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

Less than Significant Impact. The existing visual character of the Project site is agricultural land surrounded by urbanized development and agricultural land. Multiple subdivisions exist to the north of the Project site. To the east and west lie agricultural land, with more agricultural land and a SCE rector substation to the south. The Project would offer attractive landscaping and architectural design to reduce any visual effect to the surrounding properties and conform with the existing character of the neighboring community. There are no existing regulations governing scenic quality, nor would there by regulations in the R-1-5 zone district that the Project would be subject to. Any impacts would be less than significant.

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

Less than Significant Impact. Development of the Project would create new sources of light typical of urban development, typical of the subdivisions found at the perimeter of the project site. Nighttime lighting levels near the Project site would increase over current levels, as sources of new and nighttime lighting and illumination would include, but are not necessarily limited to, lighting from new residential uses, lights associated with vehicular travel (i.e., car headlights), and street lighting. The Project would have to comply with the development standards of the Subdivision Ordinance (Title 16) and Chapter 17.30 of the Zoning Ordinance which regulates light spillage, Visalia Public Works Standards, and the California Building Code. Streetlights are required to be full cut-off. These requirements would assist in reducing potential impacts associated with daytime glare and nighttime light. In addition, the Project site is situated near other residential subdivisions that produce like lighting, so the impacts of the Project would be consistent with the existing setting to the north. Therefore, the Project would not generate substantial light or glare would adversely affect views in the area. Impacts would be less than significant.

4.2 AGRICULTURE AND FORESTRY RESOURCES

Table 4-2: Agriculture and Forest Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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 forest land 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 forest land to non-forest use?	☐	☐	☒	☐

4.2.1 Baseline Conditions

Agriculture has been the predominant land use in the Project area since the late 1800s. Due to the region's rich soils, water resources, and favorable geographic and climatic conditions, agricultural activity in and around Visalia is highly productive. Visalia's agricultural heritage has contributed significantly to the City's economy – much of the region's economic activity is related to the cultivation, processing, and distribution of agricultural products – as well as its visual and cultural character. Historically, City's General Plan policies have acknowledged the value of the areas agricultural resources and sought to preserve them through urban growth management strategies and monitoring despite a prevalence of development pressures on local landowners and a growing urban population.[4]

Farmland, consisting primarily of pecan and walnut orchards, is the prominent land use within the Project Site which is approximately 67.70 acres. The Project site is located in Tier II of the City's Urban Development Boundary.

[4] (Dyett & Bhatia Urban and Regional Planners 2014)

4.2.2 Applicable Regulations

Federal

Federal Farmland Protection Policy Act

The NRCS oversees the Farmland Protection Policy Act (FPPA) (7 U.S. Code [USC] Section 4201, et seq.; see also 7 Code of Federal Regulations [CFR] 658). The FPPA (a subtitle of the 1981 Farm Bill) is national legislation designed to protect farmland. The FPPA states its purpose is to "minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses." The FPPA applies to projects and programs that are sponsored or financed in whole or in part by the federal government. The FPPA does not apply to private construction projects subject to federal permitting and licensing, projects planned and completed without assistance from a federal agency, federal projects related to national defense during a national emergency, or projects proposed on land already committed to urban development. The FPPA spells out requirements to ensure federal programs to the extent practical are compatible with State, local, and private programs and policies to protect farmland and calls for the use of the Land Evaluation and Site Assessment (LESA) system to aid in analysis. Because the City may ultimately seek some federal funding for transportation or other capital improvements related to this Project, this document addresses the FPPA as an applicable regulation.

State

California Department of Conservation, Division of Land Resource Protection

As part of the Farmland Mapping & Monitoring Program (FMMP), the California Department of Conservation (DOC) applies the NRCS soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. These designated agricultural lands are included in the Important Farmland Maps. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The list below provides a comprehensive description of all the categories mapped by the DOC.

- Prime Farmland. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland. Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

- Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.
- Urban and Built-up Land. Land 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, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- Other Land. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Local

City of Visalia General Plan

- LU-P-14: Recognize the importance of agriculture-related business to the City and region,
- LU-P-25: Provide planning and technical support for the relocation of agricultural operations currently located in the City to compatible locations in the Planning Area or the County.
- LU-P-30: Maintain greenbelts, or agricultural/open space buffer areas, between Visalia and other communities by implementing growth boundaries and working with County and land developers to prevent premature urban growth north of the St. Johns River and other sensitive locations within the timeframe of this General Plan.
- LU-P-34: In addition to supporting regional efforts to prevent urban development of agricultural lands, the City shall create and adopt a mitigation program to address conversion of Prime Farmland and Farmland of Statewide Importance in Tiers II and III. This mitigation program shall require a 1:1 ratio of agricultural land preserved to agricultural land converted and require agricultural land preserved to be equivalent to agricultural land converted. The mitigation program shall also require that the agricultural land preserved demonstrate adequate water supply and agricultural zoning, and shall be located outside the City UDB, and within the southern San Joaquin Valley. The mitigation program shall, to the extent feasible and practicable, be integrated with the agricultural easement programs adopted by the County and nearby cities. The City's mitigation program shall allow mitigation to be provided by purchase of conservation easement or payment of fee, but shall indicate a preference for purchase of easements. The mitigation program shall require easements to be held by a qualifying entity, such as a local land trust, and require the submission of annual monitoring reports to the City. The mitigation program shall specifically allow exemptions for conversion of agricultural lands in Tier I, or conversion of agricultural lands for agricultural processing uses, agricultural buffers, public facilities, and roadways.
- LU-P-44: Develop land use and site design measures for areas adjacent to high-voltage power facilities. Measures will include landscape buffers and mandatory setbacks from substations and transmission towers and lines.

- OSC-O-2: Work with County and other organizations to protect prime farmland and farmland of Statewide importance outside the City's Urban Development Boundary for agricultural production, and to preserve areas for groundwater recharge.
- OSC-P-1: Conduct an annual review of cancelled Williamson Act contracts and development proposals on agricultural land within the Planning Area Boundary to foresee opportunities for acquisition, dedication, easements, or other techniques to preserve agricultural open space or for groundwater recharge.
- OSC-O-9: Protect agricultural land from premature urban development.
- OSC-P-24: To allow efficient cultivation, pest control and harvesting methods, require buffers and transition areas between urban development and adjoining or nearby agricultural lands.
- OSC-P-25: Require new development to implement measures, as appropriate to minimize soil erosion related to grading, site preparation, land scaping and construction.

4.2.3 Impact Analysis

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?

Less than Significant Impact with Mitigation Incorporated. The Project consists of land within an unincorporated area of Tulare County currently zoned AE-20 (Exclusive Agriculture-20 acres minimum), within Tiers II and III, and proposed for annexation into the City. This land is designated Prime Farmland. As such, the area is subject to the City's agricultural mitigation policy (See AGR-1, below).

The General Plan identifies the need for the conversion of agricultural land to urban development. The City has set aside three-tiered areas planned for development which contain land designated as Prime Farmland and Farmland of Statewide Importance. The Project is within Tier II and Tier III, which has been deemed as land to be converted from agricultural land to urban development.

The 2014 General Plan Policy LU-P-34 contained a requirement for an Agricultural Mitigation Program to address the conversion of Prime Farmland and Farmland of Statewide Importance within the Tier II and Tier III growth boundaries. Policy LU-P-34 requires the adoption of this type of program notwithstanding that such a program would not reduce the environmental effects from the loss of such farmland to a level of less than significant. In order to meet the requirements of this policy, the City has prepared an Agricultural Preservation Ordinance applicable to properties within Tier II and Tier III that requires a 1:1 ratio of agricultural land preserved to agricultural land converted towards urban development. The Ordinance is anticipated to be adopted in May 2023 and must be adopted for other pending entitlements submitted to the City of Visalia that are located within Tier II to be developed. The Ordinance will require that an equivalent amount of agricultural land converted be preserved outside the urban development boundary and within the southern San Joaquin Valley, or that a project comply with regulations within the Ordinance that will cause an equivalent amount of agriculture land to be preserved. Additionally, the preserved agricultural land must demonstrate adequate water supply and agricultural zoning. Policy LU-P-34 notes that such a program shall, to the extent feasible and practicable, be integrated with the agricultural easement programs adopted by Tulare County and nearby cities. The City of Visalia's program shall allow for compliance with the preservation ordinance to be completed by purchase of easements, and that such easements be held by a qualifying entity, such as a local land trust, and require the submission of annual monitoring reports to the City. Prior to the adoption of the Ordinance the Project proponent could mitigate for the loss of agricultural land and begin conversion of agricultural lands by providing verification to the City that it has preserved agricultural land at a 1:1 ratio using easements that meet the requirements identified in Policy LU-P-34 or participation in an agricultural preservation program adopted by another agency within the southern San Joaquin Valley that meet the these requirements for preserving agricultural land.

As this is a requirement for consistency with the General Plan, the Project's compliance is mandatory. Therefore, compliance with General Plan Policy LU-P-34 will allow the Project to convert Prime Farmland and Farmland of Statewide Importance and preserve offsite farmland outside of the urban development boundaries at an equivalent ratio. As a result, impacts would be less than significant.

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

Less than Significant Impact. The Project site is zoned as AE-20 as per the Tulare County zoning designation. This project will propose an annexation by the City of Visalia as well as zoning the property to a residential zone district, in accordance with the pre-zoning of the General Plan Land Use Map, in order to facilitate the proposed use of a housing development. Although the Project site is within an agriculture zone district, it is not subject to a Williamson Act contract. Therefore, there would be a less than significant impact.

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

No Impact. The Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. The Project would result in the annexation of the Project site from Tulare County into the City of Visalia, pre-zoning the site for residential use. The Visalia General Plan has not designated the Project site or surrounding areas as Forest Land, Timberland, or timberland zoned for Timberland Production. The Project site has historically been utilized for agricultural use. Therefore, there would be no impact.

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

No Impact. The Project would not result in the loss of forest land or conversion of forest land to non-forest use. The Project would result in the construction of a new subdivision on land that would be annexed into the City of Visalia, which has historically been utilized for agriculture. This would not require the loss or conversion of a forest to a non-forest use. Therefore, there would be no impact.

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

Less than Significant Impact. The Project would result in the conversion of approximately 68 acres of farmland into a new subdivision. While the Project would convert farmland into another use, the Project site is substantially surrounded by urban uses. The development of the project site is bordered by existing barriers, such as the TID Canal, Cameron Creek, and the San Joaquin Railroad line. Therefore, agricultural encroachment impacts would be less than significant.

4.2.4 Mitigation

AGR-1 Prior to the issuance of grading or building permits, the Project proponent shall mitigate impacts for loss of Prime Farmland and Farmland of Statewide Importance on the Project site at a 1:1 ratio. The Project proponent shall implement one or more of the following measures to mitigate the loss: Payment of In-Lieu Fees, Mitigation Banks, Fee Title Acquisition, Conservation Easements, and/or Land Use Regulation on land(s)within the Southern San Joaquin Valley of California, specifically within Kern County, Tulare County, Kings County, Fresno County, or Madera County. The City shall require, at a minimum: evidence that the preserved land has adequate water supply, agricultural zoning, evidence of land encumbrance documentation, documentation that the easement/regulations are permanent and monitored, and documentation that the mitigation strategy is appropriately endowed. This mitigation shall be verified by the City prior to issuance of grading or building permits. Should the City of Visalia develop an Agricultural Mitigation Program before future construction within the Project begins, the Project proponent shall mitigate for the loss of agricultural land pursuant to the Program that is adopted by the City.

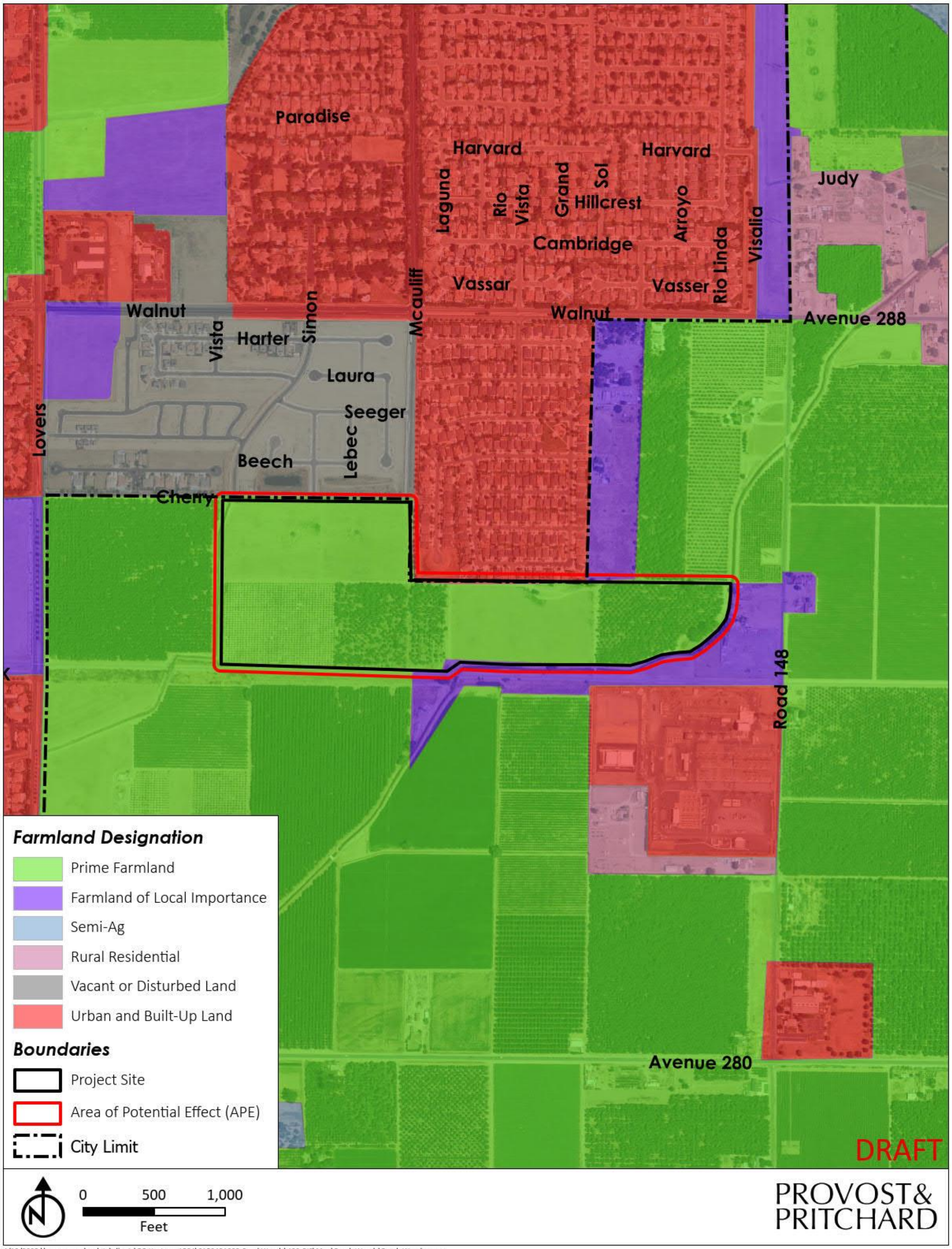

Figure 4-1: Farmland Map

4.3 AIR QUALITY

Table 4-3: Air Quality Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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?	☐	☐	☐	☒

4.3.1 Baseline Conditions

The subject property is composed of an existing orchard spanning approximately 67 acres. Typical cultivation operations include traversing the site with all-terrain vehicles and pickup trucks, application of pesticides and fertilizers, removal and replanting of orchards, and the picking of fruit. Such activities are likely to disturb the site's bare dirt, causing an unquantifiable amount of particulate matter emissions.

4.3.2 Applicable Regulations

Federal

United States Environmental Protection Agency

The Clean Air Act (CAA), first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the CAA sets a deadline for the attainment of these standards. That deadline has since passed. The other CAA Amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources. The USEPA is responsible for enforcing the 1990 amendments.

CAA and the national ambient air quality standards (NAAQS) identify levels of air quality for six "criteria" pollutants, which are considered the maximum levels of ambient air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone, CO, NO_2, SO_2, $PM_{2.5}$ and PM_{10}, and lead (Pb). Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects such as visibility restrictions.

The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The CAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The USEPA has responsibility to review all state SIPs to determine conformance with the mandates of the CAA, and the amendments thereof, and determine if implementation would achieve air quality goals. If the USEPA determines a SIP to be inadequate, a Federal Implementation Plan may be prepared for the nonattainment area that imposes additional control measures.

CAA Section 176(c) (42 U.S.C. 7506(c)) and USEPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the metropolitan planning organization, in this case the County Association of Governments (TCAG) or accepted by the United States Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the NAAQS. However, because the San Joaquin Valley State Implementation Plan for CO, PM_{10}, $PM_{2.5}$ and ozone address attainment of both the State and federal standards for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the State standards. Compliance with the California Ambient Air Quality Standards (CAAQS) is provided on the pages following this federal conformity discussion.

The USEPA approved San Joaquin Valley reclassification of the ozone (8-hour) designation to extreme nonattainment in the Federal Register on May 5, 2010, even though the San Joaquin Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard. In accordance with the CAA, USEPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. In the Federal Register on October 26, 2015, the USEPA revised the primary and secondary standard to 0.070 ppm to provide increased public health protection against health effects associated with long- and short-term exposures. The previous ozone standard was set in 2010 at 0.075 ppm.

National Environmental Policy Act

NEPA provides general information on the effects of federally funded projects. The act was implemented by regulations included in the Code of Federal Regulations (40 CFR 6). The code requires careful consideration concerning environmental impacts of federal actions or plans, including local projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible. The Project is subject to NEPA compliance because of the potential for federal grant funding for construction of the Project. The air quality assessment required under federal air quality standards and regulations covers the basic outline for project-level assessment under NEPA guidelines. The CAA also requires a parallel "Conformity" in addition to the basic impact assessment.

Toxic Substances Control Act

The Toxic Substances Control Act first authorized the USEPA to regulate asbestos in schools and public and commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies to inspect their schools for Asbestos-Containing Building Materials and prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the CAA, the USEPA established the National Emission Standards for Hazardous Air Pollutants. These are technology-based source-specific regulations that limit allowable emissions of Hazardous Air Pollutants (HAPs).

State

California Air Resources Board and the California Clean Air Act

The CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing its own air quality legislation called the California Clean Air Act (CCAA), adopted in 1988. CARB was created in 1967 from the merging of the California Motor Vehicle Pollution Control Board and the Bureau of Air Sanitation and its Laboratory.

CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the USEPA. Whereas CARB has primary responsibility and produces a major part of the SIP for pollution sources that are statewide in scope, it relies on the local air districts to provide additional strategies for sources under their jurisdiction. CARB combines its data with all local district data and submits the completed SIP to the USEPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by the CARB, and attainment plans adopted by the Air Pollution Control Districts (APCDs) and Air Quality Management Districts (AQMDs) and approved by CARB. The SJVAPCD is one of 35 AQMDs that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward the CAAQS.

States may establish their own standards, provided the state standards are at least as stringent as the NAAQS. California has established the CAAQS pursuant to Health and Safety Code (HSC) Section 39606(b) and its predecessor statutes.

HSC Section 39608 requires CARB to “identify” and “classify” each air basin in the state on a pollutant-by-pollutant basis. Subsequently, the CARB designated areas in California as nonattainment based on violations of the CAAQS. Designations and classifications specific to the SJVAB can be found in the next section of this document. Areas in the state were also classified based on severity of air pollution problems. For each nonattainment class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an approved alternative measure of progress is developed. In addition, air districts in violation of CAAQS are required to prepare an Air Quality Attainment Plan (AQAP) that lays out a program to attain and maintain the CCAA mandates.

Other CARB duties include monitoring air quality. CARB has established and maintains, in conjunction with local APCDs and AQMDs, a network of sampling stations (called the State and Local Air Monitoring Stations [SLAMS] Network), which monitors the present pollutant levels in the ambient air.

All of County, including the City, is in the SJVAB. **Table 4-5** contains a summary of State and federal air quality standards and the SJVABs attainment status for common pollutants.

CARB Mobile-Source Regulation

CARB is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, CARBs motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, CARB has adopted regulations that require auto manufacturers to phase in less-polluting vehicles.

The CCAA was first signed into law in 1988 and is administered by CARB. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the States air quality goals, planning and regulatory strategies, and performance. The CAAQS, established pursuant to Health & Safety Code Section 39606(b), are similar to, but more stringent than, the NAAQS.

Assembly Bills 1807 & 2588 - Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as a TAC. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TACs. To date, CARB has identified more than 21 TACs and has adopted USEPAs list of HAPs as TACs. Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. CARB list of TACs is provided below:

- Benzene
- Ethylene Dibromide
- Ethylene Dichloride
- Hexavalent chromium
- Asbestos
- Dibenzo-p-dioxins and Dibenzofurans
- Cadmium
- Carbon Tetrachloride
- Ethylene Oxide
- Methylene Chloride
- Trichloroethylene
- Chloroform
- Vinyl chloride
- Inorganic Arsenic
- Nickel
- Perchloroethylene
- Formaldehyde
- 1,3-Butadiene
- Inorganic Lead
- Particulate Emissions from Diesel-Fueled Engines
- Environmental Tobacco Smoke
- USEPA Hazardous Air Pollutants (187)

If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

California Assembly Bill 170

Assembly Bill 170, Reyes (AB 170), was adopted by state lawmakers in 2003 creating GC Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality.

State Tailpipe Emission Standards

To reduce emissions from off-road diesel equipment, on-road diesel trucks, and harbor craft, CARB established a series of increasingly strict emission standards for new engines. New construction equipment used for the Project, including heavy duty trucks, off-road construction equipment, tugboats, and barges, would be required to comply with the standards.

Local

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within the County and throughout the SJVAB. The District also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. The CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under State law.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley AQAP, dated January 30, 1992, in response to the requirements of the CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 State air quality standards are met.

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the CAA and the CCAA.

The SJVAPCD has prepared the 2013 Ozone Plan to achieve federal and State standards for improved air quality in the SJVAB regarding ozone. It provides a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB, and calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution, a 75-percent reduction in ozone-forming oxides of nitrogen emissions, and addresses the remaining requirement under the 1979 revoked 1-hour ozone NAAQS.

The EPA in 2006 issued a Final Rule determining that the Basin had attained the NAAQS for PM_{10}, it did however note that the Final Rule did not constitute a redesignation to attainment until all of the CAA requirements under Section 107(d)(3) were met. In response, the SJVAPCD prepared the 2007 PM_{10} Maintenance Plan and Request for Redesignation (2007 PM_{10} Plan). The SJVAPCD has prepared the 2012 $PM_{2.5}$ Plan to achieve federal and State standards for improved air quality in the SJVAB. The 2012 $PM_{2.5}$ Plan provides a comprehensive list of regulatory and incentive-based measures to reduce $PM_{2.5}$.

The Guide for Assessing and Mitigation Air Quality Impacts was prepared in 2015, which is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. It describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents and recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

The SJVAPCD documents identified above represent the SJVAPCDs plan to achieve both State and federal air quality standards. The regulations and incentives contained in these documents must be legally enforceable and permanent. These plans separate emissions reductions and compliance into different emissions source categories. The SJVAPCD Rules and Regulations that are applicable to the Project include, but are not limited to, the following:

- Regulation VIII (Fugitive Dust Prohibitions), Regulation VIII (Rules 8011-8081): This regulation is a series of rules designed to reduce particulate emissions generated by human activity, including construction and demolition activities, carryout and trackout, use of paved and unpaved roads and traffic areas, bulk material handling and storage, open space areas, etc. If a non-residential area is five or more acres in size, a Dust Control Plan must be submitted as specified in Section 6.3.1 of Rule 8021. Additional requirements may apply, depending on total area of disturbance.

- Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities: District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The Project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.
- Rule 9510 – Indirect Source Review: Rule 9510, *Indirect Source Review* (ISR), fulfills the SJVAPCD emission reduction commitments in the PM_{10} and Ozone Attainment Plans through emission reductions associated with construction and operational activities for projects subject to the rule. Since the project contains more than 20,000 square feet of recreational space it will be required to comply with Rule 9510. Compliance with Rule 9510 is separate from the CEQA process, although the control measures used to comply with Rule 9510 may be used to mitigate CEQA impacts.
- Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations: If asphalt paving will be used, then paving operations of the Project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt, and emulsified asphalt for paving and maintenance operations.
- Regulatory Attainment Designations: Under the CCAA, CARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

  The USEPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, CARB terminology of attainment, nonattainment, and unclassified is more frequently used. The USEPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, USEPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

  The SJVAB is currently designated as a nonattainment area with respect to the state PM_{10} standard, ozone, and $PM_{2.5}$ standards. The SJVAB is designated nonattainment for the national 8-hour ozone and $PM_{2.5}$ standards. On September 25, 2008, the USEPA redesignated the San Joaquin Valley to attainment for the PM_{10} NAAQS and approved the PM_{10} Maintenance Plan.

Table 4-4 shows the SJVAPCD thresholds of significance for both construction- and operation-related emissions from a given project.

Table 4-4: SJVAPCD Thresholds of Significance

SJVAPCD Thresholds of Significance (tons/yr)		
Pollutant	Construction Emissions	Operation Emissions
ROG	10	10
NO_x	10	10
CO	100	100
SO_x	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15

Source: SJVAPCD, May 2015.

City of Visalia General Plan

- Policy AQ-P-2: Require use of Best Management Practices (BMPs) to reduce particulate emission as a condition of approval for all subdivisions, development plans and grading permits, in conformance with the San Joaquin Valley Air Pollution Control District Fugitive Dust Rule.
- Policy AQ-P-9: Continue to mitigate short-term construction impacts and long-term stationary impacts on air quality on a case-by-case basis and continue to assess air quality impacts through environmental review. Require developers to implement Best Management Practices (BMPs) to reduce air pollutant emissions associated with the construction and operation of development projects.

City of Visalia Climate Action Plan

The City Climate Action Plan (CAP) was created as one of the first key steps to guiding the development and enhancement of actions designed to reduce Visalia's GHG emissions. The CAP represents the results of a GHG emissions inventory effort which serves as a starting point for the development of a comprehensive municipal and community strategy for addressing GHG emission reduction goals.

The major long-term objectives of the City's CAP for the City government and the community as a whole include the following:

- Reduce net GHG emissions from both municipal operations and community activities;
- Promote cleaner and healthier air to breathe;
- Help the City and its residents save on energy costs;
- Reduce vulnerability to changes in energy availability and price; and
- Increase public awareness of climate change issues.

The City selected the years 2020 and 2030 to establish mitigation targets for the CAP. A reduction of 15% below the 2005 baseline year level is the target for 2020. A reduction of 30% below the 2005 baseline year level is the target for 2030. The City established two mitigation milestones to correlate with the planning horizon of the 2030 General Plan Update, and to ensure that the City is working towards the States goal of an 80% reduction below baseline by 2050.

The City has instituted various actions in an effort to meet the year 2020 and 2030 mitigation targets. The measures identified to achieve mitigation targets are organized into five categories: Energy Systems, Transportation, Water and Resource Conservation, Transportation / Land Use, and Waste and Resource Conservation. Included in the Transportation category is a measure regarding the expansion of bicycle paths.

Table 4-5: Summary of Ambient Air Quality Standards and Attainment Designation

Pollutant	Averaging Time	California Standards*		National Standards*	
		Concentration*	Attainment Status	Primary	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm	Nonattainment/ Severe	–	No Federal Standard
	8-hour	0.070 ppm	Nonattainment	0.075 ppm	Nonattainment (Extreme)**
Particulate Matter (PM_{10})	AAM	20 µg/m^3	Nonattainment	–	Attainment
	24-hour	50 µg/m^3		150 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	Nonattainment	12 µg/m^3	Nonattainment
	24-hour	No Standard		35 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	Attainment/ Unclassified	35 ppm	Attainment/ Unclassified
	8-hour	9 ppm		9 ppm	
	8-hour (Lake Tahoe)	6 ppm		–	
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	Attainment	53 ppb	Attainment/ Unclassified
	1-hour	0.18 ppm		100 ppb	
Sulfur Dioxide (SO_2)	AAM	–	Attainment	--	Attainment/ Unclassified
	24-hour	0.04 ppm		--	
	3-hour	–		0.5 ppm	
	1-hour	0.25 ppm		75 ppb	
Lead (Pb)	30-day Average	1.5 µg/m^3	Attainment	–	No Designation/ Classification
	Calendar Quarter	–		--	
	Rolling 3-Month Average	–		0.15 µg/m^3	
Sulfates (SO_4)	24-hour	25 µg/m^3	Attainment	No Federal Standards	
Hydrogen Sulfide (H_2S)	1-hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride (C_2H_3Cl)	24-hour	0.01 ppm (26 µg/m^3)	Attainment		
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/km-visibility of 10 miles or more due to particles when the relative humidity is less than 70%.	Unclassified		

** For more information on standards visit: https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf*
*** No Federal 1-hour standard. Reclassified extreme nonattainment for the Federal 8-hour standard*
****Secondary Standard*
Source: CARB 2015; SJVAPCD 2015

4.3.3 Impact Analysis

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

Less than Significant Impact. CEQA requires that certain projects be analyzed for consistency with the applicable air quality plan. For a project to be consistent with SJVAPCD air quality plans, the pollutants emitted from a project should not exceed the SJVAPCD emission thresholds or cause a significant impact on air quality. In addition, emission reductions achieved through implementation of offset requirements are a major component of the SJVAPCD air quality plans. As discussed below, construction of the project would not result in the generation of criteria air pollutants that would exceed SJVAPCD thresholds of significance. Implementation of SJVAPCD Regulation VIII would further reduce construction dust impacts. Operational emissions associated with the project would not exceed SJVAPCD established significance thresholds for ROG, NO_X, CO, sulfur oxides (SO_X), PM_{10}, or $PM_{2.5}$ emissions. The Project does exceed the minimum dwelling unit count to be subject to Rule 9510, Indirect Source Review. Therefore, the project would not conflict with or obstruct implementation of SJVAPCD air quality plans. Impacts would be 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. Construction-generated emissions are temporary in duration, site improvements and construction of the homes will take place over 21 months. The construction of the Project would result in the temporary generation of emissions associated with site grading and excavation, motor vehicle exhaust associated with construction equipment and worker trips, as well as the movement of construction equipment on unpaved surfaces. Estimated construction-generated emissions and operational emissions are summarized in Table 4-6. Operational emissions would occur from vehicular trips, area sources such as fireplaces, and energy sources from the combustion of natural gas. These emissions are summarized in

Table 4-7.

Table 4-6: Unmitigated Short-Term Construction-Generated Emissions of Criteria Air Pollutants

Source	Annual Emissions (Tons/Year) [1]					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_x
Maximum Annual Proposed Project Emissions:	1.5627	2.9580	3.1400	0.5041	0.2433	<0.0001
SJVAPCD Significance Thresholds:	*10*	*10*	*100*	*15*	*15*	*27*
Exceed SJVAPCD Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

Emissions were quantified using CalEEmod Output Files Version 2020.4.0. Refer to **Appendix A** for modeling results and assumptions. Totals may not sum due to rounding.

Table 4-7: Unmitigated Long-Term Operational Emissions

Source	Annual Emissions (Tons/Year) (1)					
	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_x
Maximum Annual Project Emissions:	3.0406	1.9511	11.5568	2.6819	0.7598	0.0274
SJVAPCD Significance Thresholds:	*10*	*10*	*100*	*15*	*15*	*27*
Exceed SJVAPCD Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

Emissions were quantified using CalEEmod Output Files Version 2020.4.0. Refer to **Appendix A** for modeling results and assumptions. Totals may not sum due to rounding.

As Project emissions will not exceed established thresholds, impacts would be less than significant.

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

Less than Significant Impact. The Project would generate diesel particulate matter during construction and during project operations when solid waste is being collected from the site. These emissions are short in duration, temporary, and consistent with emissions found in the project vicinity. Furthermore, the conversion of farmland would likely result in similar emission reductions. Therefore, impacts would be less than significant.

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

No Impact. Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roaster, asphalt batch plants, and rendering plants, among other uses. The Project does not include any of these activities or land uses. The Project would therefore have no impact with respect to generation of emissions leading to odors or other adverse or objectionable emissions.

4.4 BIOLOGICAL RESOURCES

Table 4-8: Biological Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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 and Wildlife 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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct 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?	☐	☐	☐	☒

4.4.1 Baseline Conditions

General

The proposed Project is located in the City of Visalia within Tulare County about one mile west of the census designated place of Linnell Camp, California. This area lies within the Central Valley of California near the foothills of the Sierra Nevada Mountain Range. The topography is relatively flat with elevations ranging from approximately 300 to 400 feet, with underlying rock formations of sandstone.

Like most of California, the San Joaquin Valley experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures often reach above 90 degrees Fahrenheit, and the humidity is generally low. Winter temperatures are often below 60 degrees Fahrenheit during the day and rarely exceed 70 degrees. On average, the Central Valley receives approximately 12 inches of precipitation in the form of rainfall yearly, most of which occurs between October and April.

Water

The nearest surface waters are Cameron Creek which runs along the eastern and southern portions of the APE and the TID Canal that runs along the western portion of the APE. Cameron Creek and the TID Canal did not have any surface water present during the survey. There were canine tracks near both the creek and canal that were consistent with that of a domestic dog (*Canis lupus familiaris*).

Watersheds are made up of many smaller subwatersheds that drain into a particular stream, river, or lake. The Project site lies within the Middle Branch Cross Creek watershed; Hydrologic Unit Code (HUC): 1803000714 and a single subwatershed: Cameron Creek subwatershed; HUC: 180300071402. A watershed is the topographic region that drains into a stream, river, or lake. The nearest surface waters are Cameron Creek which runs along the east and southeast portion of the APE. The creek did not have any visible water present during the survey.

The Middle Branch Cross Creek watershed is comprised of stormwater or snowmelt collected in upland areas which flows down into Lion Lake. Lone Pine Creek exits Lion Lake and flows into Tamarack Lake. Hamilton Creek flows from Precipice Lake downstream before it combines with Lone Pine Creek to become the Middle Fork Kaweah River. Granite Creek, Cliff Creek, Buck Creek, Castle Creek, Mehrten Creek, Panther Creek, Dome Creek, and Paradise Creek all flow into the Middle Fork Kaweah River. Farther downstream the Middle Fork Kaweah River combines with the Marble Fork Kaweah River and forms the start of the Kaweah River. Elk Creek and Salt Creek flows into the Kaweah River which then goes into Kaweah Lake which exits as Kaweah River. This river then receives inputs from Dry Creek, and Lane Slough before flowing into Cameron Creek along with Deep Creek. Cameron Creek then runs along the east and southeast portion of the APE. Cameron Creek exits the APE and runs southwest and through Mooney Grove Park and empties into a basin. Cameron Creek then picks up further downstream near the City of Paige and connects to a canal that empties into the Tule River which terminates in a canal within the former Tulare Lake.

Soil

Two soil mapping units representing two soil types were identified within the APE and are listed in Table 4-9. Within the two soil mapping units there are also minor units within the APE. The soils are displayed with their core properties according to the Major Land Resource Area of California (MLRA) 19 map area. Both soil types are primarily used for farmland, if irrigated.

Table 4-9: List of Soils Located Onsite and Their Basic Properties

Soil	Soil Map Unit	Percent of APE	Hydric Unit	Hydric Minor Units	Drainage	Permeability	Runoff
Grangeville	Sandy loam, drained, 0 to 2 percent slopes	59.8%	Yes	Yes	Somewhat poorly drained	Moderate permeability	Negligible runoff
Nord	Sandy loam, 0 to 2 percent slopes	40.2%	No	Yes	Well drained	Moderate permeability	Negligible runoff

The full soil report can be found in Appendix B: Biological Evaluation at the end of this document.

Wildlife and Plant Species

A thorough search of the CNDDB for published accounts of special status plant and animal species was conducted for the *Visalia* and *Exeter* 7.5-minute quadrangles that contain the APE, and for the 10 surrounding quadrangles: *Traver, Monson*, *Ivanhoe*, *Woodlake*, *Rocky Hill*, *Lindsay*, *Cairns Corner*, *Tulare*, *Paige*, and *Goshen*. Appendix B: Biological Evaluation shows the Project's 7.5-minute quadrangle, according to United States Geological Survey Topographic Maps. These species, and their potential to occur within the APE, are listed in Table 4-11 and Table 4-12 below. Raw data obtained from CNDDB and IPaC is available in Appendix B: Biological Evaluation at the end of this document. All relevant sources of information, as discussed in the Study Methodology section of this report were used to determine if any special status species are known to be within the APE.

A tree survey was performed on April 7, 2022. Ten Valley Oak trees were found within the APE and their height and Diameter Breast Height (DBH) were measured (see Figure 4-2 for their individual locations within the Project site). Results from the tree survey can be found in Table 4-10. All ten Valley Oak trees found within the APE have a DBH of eighteen (18) inches or greater and will require a tree removal permit and subsequent mitigation as written in the City of Visalia Oak Tree Ordinance. A map showing the locations of the trees within the APE can be found in Appendix B: Biological Evaluation.

Of the 22 regionally occurring special status plant species, 22 are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat. These species include: alkali-sink goldfields, brittlescale, calico monkeyflower, California alkali grass, California jewelflower, California satintail, Coulter's goldfields, Earlimart orache, Greene's tuctoria, heartscale, Hoover's spurge, Kaweah brodiea, lesser saltscale, recurved larkspur, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, Sanford's Arrowhead, spiny-sepaled button-celery, stiped adobe-lily, subtle orache, vernal pool, and Winter's sunflower.

Table 4-10: Results from the Valley Oak Tree Survey

Species	Height (feet)	(DBH) (Inches)	Protected under the Oak Tree Ordinance
Valley Oak Tree #1	67.4	44.01	Yes
Valley Oak Tree #2	104.8	53.34	Yes
Valley Oak Tree #3	117.4	32.32	Yes
Valley Oak Tree #4	128	66.34	Yes
Valley Oak Tree #5	61.4	22.83	Yes
Valley Oak Tree #6	98.4	62.20	Yes
Valley Oak Tree #7	77.9	51.18	Yes
Valley Oak Tree #8	85.7	39.00	Yes
Valley Oak Tree #9	43.4	18.90	Yes

Species	Height (feet)	(DBH) (Inches)	Protected under the Oak Tree Ordinance
Valley Oak Tree #10	55.1	52.75	Yes

Table 4-11: List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
American badger (*Taxidea taxus*)	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	**Unlikely**. The only recorded regional occurrence of this species occurred approximately four miles northeast of the APE in 1994. The APE is frequently disturbed area with stray and domestic dogs that would this species from living here.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Absent**. There are no recorded regional observations of this species in CNDDB. The species is listed on IPaC. The most recent recorded observation is from iNaturalist in 2019 approximately 20 miles of the APE. Suitable habitat is not present within the APE. There are frequently disturbed agricultural fields. Rodent burrows in this area are not abundant.
Burrowing Owl (*Athene cunicularia*)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.	**Unlikely**. There are ten recorded regional observations of this species. The nearest recorded observation of this species occurred approximately nine miles north of the APE in 2006. The APE does not have an abundant amount of ground squirrel burrows that would be suitable habitat for this species.
California red-legged frog (*Rana draytonii*)	FT, CSC	Inhabits perennial rivers, creeks, and stock ponds with vegetative cover within the Coast Range and northern Sierra foothills.	**Absent**. The APE is outside of this species known range. There are no recorded regional observations of this species in CNDDB. The species is listed in IPaC as a Federally Threatened species. The nearest observation on iNaturalist is from 2015 approximately 70 miles southwest of the APE.
California tiger salamander (*Ambystoma californiense*)	FT, CT, CWL	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to 1500 feet in elevation.	**Unlikely**. There are 13 recorded regional observations of this species. The nearest recorded observation of this species occurred approximately nine miles north of the APE in 2002. Cameron Creek has been historically dry and the TID canal does not provide suitable habitat for this species. Upland habitat required by this species is

Species	Status	Habitat	Occurrence on Project Site
			also absent from the APE and surrounding areas.
Delta smelt (*Hypomesus transpacificus*)	FT, CE	This pelagic and euryhaline species is Endemic to the Sacramento-San Joaquin River Delta, upstream through Contra Costa, Sacramento, San Joaquin, and Solano Counties.	**Absent**. The APE is outside of this species known range. There are no recorded regional observations of this species in CNDDB. This species is listed in IPaC as federally threatened. The nearby canal is dry and there are no tributaries that connect with a known delta smelt waterway.
Foothill yellow-legged frog (*Rana boylii*)	CCT, CSC	Frequents rocky streams and rivers with rocky substrate and open, sunny banks in forests, chaparral, and woodlands. Occasionally found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	**Absent**. The APE is outside of this species known range. The only recorded regional observation of this species occurred approximately 12.5 miles northeast of the APE in 1941 but is listed as extirpated. There is no suitable habitat present for this species.
Giant gartersnake (*Thamnophis gigas*)	FT, CT	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. This species uses small mammal burrows adjacent to aquatic habitats for hibernation in the winter and to escape from excessive heat in the summer.	**Unlikely**. There are no recorded regional observations of this species in CNDDB. The species is listed on IPaC as federally threatened. There are some mammal burrows in the area, but Cameron Creek and the TID Canal do not provide suitable habitat as they lack surface water and emergent vegetation.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. In the Central Valley, nests in riparian areas, desert scrub, and agricultural hedgerows.	**Unlikely**. The only recorded regional observation of this species occurred approximately 12 miles northwest of the APE in 1992. There are multiple observations of the species on iNaturalist. The nearest observation is from 2019 approximately 7.5 miles south of the APE in the Herbert Wetland Prairie Preserve. The walnut groves and frequent maintenance and disturbance in the APE would deter this species.
Northern California legless lizard (*Anniella pulchra*)	CSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	**Possible**. The nearest contemporary observation of this species occurred approximately 4.5 miles east of the APE in 2015. The most recent recorded observation is from iNaturalist in 2021 approximately 6 miles southeast of the APE. Soils within the APE and leaf litter from the Valley oaks in the APE could provide suitable habitat for the species.
Northern leopard frog (*Lithobates pipiens*)	CSC	Inhabits grassland, wet meadows, potholes, forests, woodland, brushlands, springs, canals, bogs, marshes, and reservoirs. Generally, prefers permanent water with abundant riparian vegetation.	**Absent**. There are two recorded regional observations of this species. Both observations of this species occurred approximately 12 miles north of the APE in 1961 and are listed as transplants outside of native habitat/range. The habitat required for this species is not present within or nearby the APE.
Pallid bat (*Antrozous pallidus*)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods,	**Possible**. Multiple tree cavities were present in an orchard within the APE. The biological survey was conducted during the day so

Species	Status	Habitat	Occurrence on Project Site
		and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and other man-made structures.	nighttime surveys would be needed to determine presence or absence of this species. The only recorded regional observation of this species occurred approximately four miles northeast of the APE in 2004.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Unlikely**. There are 25 recorded regional observations of this species. The nearest observation of this species occurred approximately 0.5 miles southwest of the APE in 1975. There is an observation on iNaturalist from 2017 approximately 45 miles southwest of the APE. There are multiple domestic and stray dogs in the area that would deter the species from living here.
Swainson's Hawk (*Buteo swainsoni*)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Possible**. There are 34 recorded regional observations of this species. The nearest observation of this species occurred approximately seven miles south of the APE in 2016. There is an observation on iNaturalist from 2021 approximately 5 miles to the east of the APE in the Kaweah Oaks Preserve. Oak trees within the APE are tall enough to support nests.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Burrows in soil. Often found in grassland and shrubland.	**Unlikely**. The only recorded regional observation of this species occurred approximately 12 miles south of the APE in 1943. A more recent regional observation was found in iNaturalist from 2019 approximately 50 miles southwest of the APE. No tail drags were observed on APE.
Tricolored Blackbird (*Agelaius tricolor*)	CT, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	**Unlikely**. There are three recorded regional observations of this species. The nearest observation of this species occurred approximately ten miles east of the APE in 2000. There is also a recent observation from 2020 approximately 22 miles east of the APE on iNaturalist. No riparian shrubs or dense cattails present on APE. Cameron Creek and the TID Canal do not provide suitable habitat as they lack surface water or riparian shrubs.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of the Central Valley and foothills. Adults are active March to June.	**Absent**. The only recorded regional observation of this species occurred approximately eight miles northeast of the APE in 1991. The APE is absent of elderberry shrubs that this species requires.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent**. Suitable habitat for the species is absent from the APE and surrounding areas. The soils within the APE are sandy-loam and do not compact like clay to create vernal pools. Further vernal pools were not observed during the field survey.

Species	Status	Habitat	Occurrence on Project Site
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Occurs in vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent**. Suitable habitat for the species is absent from the APE and surrounding areas. The soils within the APE are sandy-loam and do not compact like clay to create vernal pools. Further vernal pools were not observed during the field survey.
Western mastiff bat (*Eumops perotis californicus*)	CSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	**Unlikely**. There are no cliff faces, high buildings, or tunnels in or nearby the APE that would be suitable habitat for this species.
Western pond turtle (*Emys marmorata*)	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	**Unlikely**. There is one recorded regional observation of this species with an unknown location in the vicinity of Visalia in 1879. The only creek beds or canals nearby have been historically dry and surrounding areas lack upland habitat required by this species.
Western spadefoot (*Spea hammondii*)	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Unlikely**. Suitable habitat for the species is absent from the APE and surrounding areas. The soils within the APE are sandy-loam and do not compact like clay to create vernal pools. There are no vernal pools or temporary wetlands in or near the APE that would provide suitable habitat for this species.
Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	FT, CE	Suitable nesting habitat in California includes dense riparian willow-cottonwood and mesquite habitats along a perennial river. Once a common breeding species in riparian habitats of lowland California, this species currently breeds consistently in only two locations in the State: along the Sacramento and South Fork Kern Rivers.	**Absent**. There is one historical recorded regional observation of this species which occurred in 1919 in the vicinity of Visalia. It is listed as extirpated. There are no willow-cottonwood habitats along a perennial river in or nearby the APE that would provide suitable habitat for this species.

Table 4-12: List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	*Status*	*Habitat*	*Occurrence on Project Site*
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats. Occurrences documented in the San Joaquin and Sacramento Valleys at elevations below 656 feet. Blooms February - April.	**Absent**. There are six recorded regional observations of this species. The nearest recorded observations of this species occurred four miles west of the APE on an unknown date in the 1990's. There are no vernal pools or saline flat areas that would be suitable habitat for this species.

Species	Status	Habitat	Occurrence on Project Site
Brittlescale (*Atriplex depressa*)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in alkaline or clay soils, typically in meadows or annual grassland in at elevations below 1050 feet. Sometimes associated with vernal pools. Blooms June–October.	**Absent**. There are two recorded regional observations of this species. The nearest recorded observation of this species is a historical occurrence which occurred in the vicinity of Visalia in 1881. The other recorded observation is approximately 13.5 miles northwest of the APE in 1968. The required soils for the species are not present in or near the APE.
Calico monkeyflower (*Diplacus pictus / Mimulus pictus / Eunanus pictus*)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, and around granite outcrops within foothill woodland communities at elevations between 450 feet and 4100 feet. Blooms March – May.	**Absent**. There are two recorded regional observations of this species. The closest observation of this species occurred approximately eight miles west of the APE in 1935. The elevation requirement for this species to occur is not present within the APE. There are no granite outcrops within foothill woodland communities required for this species.
California alkali grass (*Puccinellia simplex*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March–May.	**Unlikely**. There are five recorded regional observations of this species. The nearest recorded observation of this species occurred approximately nine miles west of the APE in 1925 and is listed as possibly extirpated. Although the APE meets the elevation requirement for this species, but the required soils are absent.
California jewelflower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 6100 feet. Blooms February–April.	**Unlikely**. The only recorded regional observation of this species occurred approximately seven miles southwest of the APE in 1932 and is listed as extirpated. There are no grasslands in or near the APE that would be required for the species.
California satintail (*Imperata brevifolia*)	CNPS 2B	Although this facultative species is equally likely to occur in wetlands and non-wetlands, it is often found in wet springs, meadows, streambanks, and floodplains at elevations below 1600 feet. Blooms September – May.	**Unlikely**. The only recorded regional observation of this species occurred at an unknown location in the vicinity of Visalia in 1895. The creek and canal adjacent to the APE lacked surface water and riparian vegetation.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	CNPS 1B	Found on alkaline or saline soils in vernal pools and playas in grassland at elevations below 4500 feet. Blooms April–May.	**Absent**. The only recorded regional observation of this species occurred approximately 11.5 miles north of the APE in 2015. There are no vernal pools or playas in grassland in or near the APE. The required soils for this species are absent.
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline or alkaline soils, typically within valley and foothill grassland at elevations below 375 feet. Blooms August–September.	**Absent**. There are four recorded regional observations of this species. The nearest recorded observation of this species occurred approximately 11.5 miles northwest of the APE in 2017. The required soils are absent from the APE and surrounding areas.

Species	Status	Habitat	Occurrence on Project Site
Greene's tuctoria (*Tuctoria greenei*)	FE, CR, CNPS 1B	Found in the San Joaquin Valley and other parts of California in vernal pools within valley grassland, wetland, and riparian communities at elevations below 3500 feet. Blooms May – September.	**Unlikely**. The only recorded regional observation of this species occurred at an unknown location in the vicinity of Woodlake in 1936 and is listed as extirpated. There are no vernal pools within valley grassland, wetland or riparian communities in or near the APE that would support this species.
Heartscale (*Atriplex cordulata* var. *cordulata*)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in saline or alkaline soils within shadescale scrub, valley grassland, and wetland-riparian communities at elevations below 230 feet. Blooms June–July.	**Absent**. The only recorded regional observation of this species occurred at an unknown location in the vicinity of Goshen approximately nine miles west of the APE in 1938. There are no valley grassland or wetland riparian communities that would support this species. The required soils for this species are absent from the APE.
Hoover's spurge (*Euphorbia hooveri*)	FT, CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in vernal pools within valley grassland, freshwater wetland, and riparian communities at elevations below 800 feet. Blooms July – September.	**Absent**. There are five recorded regional observations of this species. The nearest recorded observation of this species occurred approximately nine miles north of the APE in 2011. There are no vernal pools, freshwater wetland, or riparian communities in or near the APE that would support the species.
Kaweah brodiaea (*Brodiaea insignis*)	CE, CNPS 1B	Found in the Sierra Nevada foothills in foothill woodland and valley grassland communities at elevations between 650 feet and 1650 feet. Blooms May – June.	**Unlikely**. The only recorded regional observation of this species occurred approximately 15 miles northeast of the APE in 1989. There are no valley grassland communities in or near the APE to support the species.
Lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley in sandy, alkaline soils in alkali scrub, valley and foothill grassland, and alkali sink communities at elevations below 750 feet. Blooms April–October.	**Absent**. There are eight recorded regional observations of this species. The nearest recorded observation of this species occurred approximately 9 miles west of the APE in 2002. The required soils for the species are not present in or near the APE.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in poorly drained, fine, alkaline soils in grassland and alkali scrub communities at elevations between 100 feet and 2600 feet. Blooms March–June.	**Absent**. There are six recorded regional observations of this species. The nearest contemporary recorded observation of this species occurred approximately 10 miles south of the APE in 2010. The soils required for the species is not present in or near the APE.
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada Foothills in bare dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 325 feet and 2950 feet. Blooms March–May.	**Absent**. There are four recorded regional observations of this species. The nearest contemporary recorded observation of this species that has not been extirpated occurred approximately 13.5 miles northeast of the APE in 1992. The soils required for the species are not present in or near the APE.
San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)	FT, CE, CNPS 1B	Found in the eastern San Joaquin Valley and the Sierra Nevada foothills in vernal pools within valley grassland, freshwater wetland, and wetland-riparian communities at elevations	**Absent**. There are two recorded regional observations of this species. The nearest contemporary recorded observation of this species that has not been extirpated occurred approximately 9.5 miles north of

Species	*Status*	*Habitat*	*Occurrence on Project Site*
		below 2600 feet. Blooms April – September.	the APE in 2017. There are no vernal pools, valley grasslands, or freshwater wetlands in or near the APE to support the species.
Sanford's arrowhead (*Sagittaria sanfordii*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in freshwater-marsh, primarily ponds and ditches, at elevations below 1000 feet. Blooms May–October.	**Absent**. There are two recorded regional observations of this species. The nearest recorded observation of this species occurred approximately ten miles north of the APE in 2018. The creek and canal adjacent to the APE lacked surface water and riparian vegetation.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada Foothills and the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 feet and 4160 feet. Blooms April–July.	**Unlikely**. There are 16 recorded regional observations of this species. The nearest recorded contemporary observation of this species occurred approximately nine miles north of the APE in 1992. There are no vernal pools or swales in or near the APE that would support the species.
Striped adobe-lily (*Fritillaria striata*)	CT, CNPS 1B	Found in the Sierra Nevada foothills in adobe soil within valley grassland and foothill woodland communities at elevations below 3300 feet. Blooms February – April.	**Absent**. The only recorded regional observation of this species occurred approximately ten miles east of the APE in 1938 and is now listed as extirpated. The soils required for the species are absent from the APE or surrounding areas.
Subtle orache (*Atriplex subtilis*)	CNPS 1B	Found in the San Joaquin Valley in saline depressions in alkaline soils within valley and foothill grassland communities at elevations below 330 feet. Blooms June–October.	**Absent**. The only recorded contemporary observation of this species in the region occurred approximately 10.5 miles south of the APE in 1999. The soils required for the species are not present in the APE or surrounding areas.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the San Joaquin Valley and Sacramento Valley in alkaline vernal pools at elevations below 375 feet. Blooms June–September.	**Absent**. There are two recorded regional observations of this species. Both observations occurred approximately 12 miles north of the APE in 2010. There are no alkaline vernal pools in or near the APE that would support the species.
Winter's sunflower (*Helianthus winteri*)	CNPS 1B	Found in the Sierra Nevada foothills on steep, south-facing grassy slopes, rock outcrops, and road-cuts at elevations ranging from 600 feet to 1500 feet. Blooms year-round.	**Absent**. There are eight recorded regional observations of this species. The nearest observation of this species occurred approximately 8.5 miles north of the APE in 2018. There are no south-facing grassy slopes, rock outcrops or road cuts in or near the APE that would support the species.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

Present:	Species observed on the site at time of field surveys or during recent past.
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible:	Species not observed on the site, but it could occur there from time to time.
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent:	Species not observed on the site and precluded from occurring there due to absence of suitable habitat.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
		CCT	California Threatened (Candidate)

		CFP	California Fully Protected
		CSC	California Species of Concern
		CWL	California Watch List
		CR	California Rare

<u>CNPS LISTING</u>

1B	Plants Rare, Threatened, or Endangered in. California and elsewhere.	2B	Plants Rare, Threatened, or Endangered in California, but more common elsewhere.
CT	California Threatened		
CSC	California Species of Concern		

4.4.2 Applicable Regulations

Federal

Clean Water Act

The Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharge of pollutants to waters of the United States (WOTUS). The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

The CWA empowers the USEPA to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nations waters are unlawful unless specifically authorized by a permit; with permit review being the CWAs primary regulatory tool. The following sections provide additional details on specific sections of the CWA.

- Section 404: CWA Section 404 regulates the discharge of dredged and fill materials into WOTUS. In 2020, the USEPA and USACE published the Navigable Water Protection Rule defining the jurisdiction of what is considered WOTUS. WOTUS jurisdiction applies to navigable waters and includes four categories of water: territorial seas and traditional navigable water; tributaries of such waters; certain lakes, ponds, and impoundments of jurisdictional waters; and wetlands adjacent to other jurisdictional waters. The new rule also defines what is not considered WOTUS. The rule provide that groundwater is not a jurisdictional water and explicitly excludes ephemeral features that flow only in direct response to precipitation, diffuse stormwater runoff, ditches, prior converted cropland, artificially irrigated water or lakes, water-filled depressions constructed or excavated incidental to mining or construction activities, and water filled pits excavated for the purpose of obtaining fill, sand, or gravel.

  As determined by the United States Supreme Court in the 2001 *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, 121 S.CT. 675, 2001, (commonly referred to as the "SWANCC" decision) " Based on SWANCC, the USACE no longer has jurisdiction or regulates isolated wetlands that have no hypothetical or observed hydrologic connection with a WOTUS).

  A June 19, 2006, federal ruling on two consolidated cases (*Rapanos v. United States* and *Carabell v. United States Army Corps of Engineers*), often referred to as the Rapanos decision, affects whether adjacent waters or wetlands are considered jurisdictional under the CWA. The directive of the court follows the opinion by Justice Anthony Kennedy, which states that the test for waters of the United States should be determined on a case-by-case basis by USACE on the basis of whether a particular water body has "significant nexus" to navigable waters.

Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including adjacent wetlands, before proceeding with a proposed activity. The USACE may issue either an individual permit evaluated on a case-by-case basis, or a Nationwide general permit (NWP) evaluated at a program level for a series of related activities. NWP are preauthorized activities that have been determined to cause only minimal adverse environmental effects. Each NWP provides specific conditions that must be met for the NWP to apply to a project. Potential WOTUS found within the project area would be under the jurisdiction of the Sacramento District of the USACE.

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. The USACE cannot issue an individual permit or verify the use of a NWP until the requirements of the NEPA, ESA, and the National Historic Preservation Act (NHPA) have been met. In addition, the USACE cannot issue or verify any permit until a CWA Section 401 water quality certification or a waiver of certification has been issued. This is discussed further below.

- Section 402: CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by the USEPA. In California, the State Water Resources Control Board (SWRCB) has authority to oversee the NPDES program and is implemented through the Regional Water Quality Control Boards (RWQCBs) (see further related discussions under "Porter-Cologne Water Quality Control Act" below). The APE would be under the jurisdiction of the Central Valley RWQCB.

  NPDES permits are required for projects that disturb one (1) acre or more of land. The NPDES permitting process requires the applicant to file a NOI to discharge stormwater and prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, and cement) that may contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

- Section 401: In 2020, California regulations protecting wetland and state waters were approved by the SWRCB and have updated defined procedures for discharges of dredge or fill material to waters of the State. The new procedures consist of four major elements: a wetland definition; framework for determining if a feature meets the wetland definition; delineation procedures; and procedures for the submittal, review and approval of applications for water quality certification and waste discharge requirements (WDRs). Discharges into waters of the State that are also waters of the United States require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a CWA Section 404 permit. Waters of the State also include wetlands Discharges into all waters of the State, even those that are not also Waters of the United States, may require WDRs, or waivers of WDRs, from the RWQCB.

Executive Order 13186 – Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), 16 United States Government Code 703–711, prohibits the take of any migratory bird or any part, nest, or eggs of any such bird.[5] Under the act, "take" is defined as the action of or attempt to "pursue, hunt, shoot, capture, collect, or kill". This act applies to all persons and agencies in the United States, including federal agencies.

Executive Order 13186 requires that any project with federal funding, permitting, or action must address the impacts of the project on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal funding, permitting, or action-taking agencies to work with the USFWS to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through:

- Avoiding and minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- Restoring and enhancing the habitat of migratory birds, as practicable; and
- Preventing or abating the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

Executive Order 13112: Invasive Species

EO 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential effects, and measures to prevent or eradicate them.

Executive Order 11990: Protection of Wetlands

Executive Order 11990, signed May 24, 1977, directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately-owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands.

State

California Environmental Quality Act

CEQA is the regulatory framework by which California public agencies identify and mitigate significant environmental impacts. The CEQA statute is set forth in Public Resources Code Section 21000, et seq. and the Guidelines implementing the Act (State CEQA Guidelines) are set forth in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000, et seq. A project normally is considered to result in a significant environmental impact on biological resources if it substantially affects a rare or endangered species or the habitat of that species, substantially interferes with the movement of resident or migratory fish or wildlife, or substantially diminishes habitat for fish, wildlife, or plants.

California Endangered Species Act

California implemented California Endangered Species Act (CESA) in 1984. The act prohibits the take of endangered and threatened species; however, habitat destruction is not included in the States definition of take. Under CESA, "take" is defined as an activity that would directly or indirectly hunt, pursue, catch,

[5] Executive Order 13186, 2001. Responsibilities of Federal Agencies to Protect Migratory Birds. Federal Register. Vol. 66, No. 11. https://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/Req-EO13186migratorybirds.pdf Date Accessed: 11/6/2017.

capture, or kill an individual of a species. Section 2090 of CESA requires State agencies to comply with endangered-species protection and recovery and promote conservation of these species. CDFW administers the act and authorizes take through Section 2081 agreements (except for species designated as fully protected). Regarding rare plant species, CESA defers to the California Native Plant Protection Act of 1977, which preserves, protects, and enhances rare and endangered plant species and prohibits importing/exporting or the sale of rare and endangered plants. All State plants that have been designed as rare, threatened, endangered , or listed as a candidate or species of special concern are protected. In addition to federal and State protection the California Native Plant Society (CNPS) has a ranking system that places native plants into categories or ranks reflecting degrees of concern and which also needs to be addressed during CEQA review.

Porter-Cologne Water Quality Control Act

Water Code Section 13260 requires "any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements)". Under the Porter-Cologne definition, the term "waters of the State" (as distinguished from Waters of the United States) is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state". The SWANCC ruling and Rapanos decision, described above, have no bearing on the Porter-Cologne definition. Although all waters of the United States that are within the borders of California are also waters of the State, the converse is not true (i.e., in California, waters of the United States represent a subset of waters of the state). Thus, California retains authority to regulate discharges of waste into any waters of the state, regardless of whether the USACE has concurrent jurisdiction under CWA 404.

If the USACE determines a wetland is not subject to regulation under CWA 404, CWA 401 water quality certification is not required. However, the RWQCB may impose WDRs if fill material is placed into waters of the state.

California Fish and Game Code

- Section 1602: Under Fish and Game Code Section 1602, public agencies are required to notify CDFW before undertaking any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review occur generally during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable project changes to protect the resources. These modifications are formalized in a streambed-alteration agreement that becomes part of the plans, specifications, and bid documents for the project.

- Sections 3503 and 3503.5: Fish and Game Code Section 3503 prohibits the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests.

- Section 3511 (Fully Protected Birds): The Fish and Game Code provides protection from take for a variety of species of birds, referred to as fully protected species. Section 3511 lists fully protected birds and prohibits take of these species. The Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill". Except for take related to scientific research, all take of fully protected species of birds is prohibited.

California Oak Woodlands Conservation Act

The California Oak Woodlands Conservation Act was enacted in 2001 to protect oak woodland habitats that were being diminished due to development, firewood harvesting, and agricultural conversions.[6] The Oak Woodlands Conservation Program was established as a result of the act and is intended to provide project funding opportunities for private landowners, conservation organizations, and cities and counties to conserve and restore oak woodlands. The program authorizes the Wildlife Conservation Board to purchase oak woodland conservation easements and provide grants for land improvements and oak restoration efforts. The Planning Area contains a large stand of California Valley Oak Woodland and also contains scattered oak woodland stands that have been preserved throughout the City.

Local

City of Visalia General Plan Update

Objective OSC-O-7

> Preserve and enhance Planning Area waterways and adjacent corridors as valuable community resources which serve as plant and wildlife habitats, as groundwater recharge facilities, as flood control and irrigation components, and as connections between open space areas.

Policy OSC-P-8

> Protect, restore and enhance a continuous corridor of native riparian vegetation along Planning Area waterways, including the St. Johns River; Mill, Packwood, and Cameron Creeks; and segments of other creeks and ditches where feasible, in conformance with the Parks and Open Space diagram of this General Plan.

Objective OSC-O-10

> Protect and enhance natural vegetation throughout the Planning Area, especially types that are considered sensitive natural communities by the Department of Fish and Game.

Policy OSC-P-28

> Protect significant stands of Valley Oak woodlands from further development by designating them for Conservation, creating habitat management plans, where needed, and undertaking restoration activities as appropriate.

Policy OSC-P-31

> Protect and enhance habitat for special status species, designated under state and federal law. Require protection of sensitive habitat areas and special status species in new development in the following order: (1) avoidance; (2) onsite mitigation, and (3) offsite mitigation.

4.4.3 Visalia City Oak Tree Ordinance

The City of Visalia has an ordinance preventing the premature removal of native oak trees. The APE hosts 10 Valley oak trees. A table and map of the oak trees within the APE that are subject to this ordinance are available in Appendix B: Biological Evaluation. If oak trees are to be removed, it must comply with the ordinance identified below.

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[6] (California Wildlife Conservation Board 2023)

Chapter 12.24 of the Visalia Municipal Code, Oak Tree Preservation, provides requirements intended to discourage the premature removal of oak trees.

Section 12.24.020 Definitions.
"Oak Tree" means Valley Oak Tree (*Quercus lobata*), with a trunk diameter of eighteen (18) inches or greater at a point 4.5 feet above the root crown (Also referred to as "18 inches Diameter Breast Height (D.B.H.)"). "Oak tree" may also mean a "landmark tree." "Landmark tree" means any native or non-native tree recognized by city council resolution for its age, size, location outstanding habitat value, superior beauty, historical, and/or cultural significance.

Section 12.24.030 Oak Tree Removal Permit Required.

A. Any person desiring to destroy or remove an oak tree on private or public property must first apply for and obtain a removal permit. Such application shall be in writing to the city clerk, who shall forward such application to the city manager of the city. The application shall contain the number, size and location of the oak trees and a brief statement of the reason of the requested action. The city manager shall charge a fee for said permit, to be established by the city council's annual designation of city fees.

B. Within five calendar days of receipt of such application, the city manager shall post a notice on the subject tree, in a manner reasonably intended to inform the general public, stating that an application for removal of the tree has been filed and is pending with the city manager. Within fourteen calendar days of receipt of such application, the city manager shall inspect the premises whereon such oak trees are located, and shall issue an intended decision in writing as to whether or not the application will be approved, and if so, what mitigation shall be required as a condition to approval, consistent with Section 12.24.035 below; provided, however, that failure to render an intended decision within such period shall not be deemed approval.

C. The city manager shall not grant a removal permit unless one of three findings enumerated in Section 12.24.035 can be made based on substantial evidence and, where necessary, expert advice of a certified arborist. The applicant may submit his or her own supporting material, including a report of an independent certified arborist, for consideration by the city manager. However, the City manager shall retain the discretion for determining the weight and value to be given to such independent reports.

D. Upon determination that one of the three findings enumerated in Section 12.24.035 can be met and a removal permit may be granted, the city manager shall establish mitigation requirements in a manner consistent with the policy to be developed and implemented pursuant to Section 12.24.037. No mitigation shall be required for oak trees removed pursuant to subsections A. or C. of section 12.24.035, unless the city manager determines that the applicant's negligence or willful conduct contributed to the decline of the health of the oak tree. The mitigation requirements established by the city manager shall attach to the permit as conditions and shall be enforceable as a lien against the applicant's real property. In no event shall the availability of mitigation measures, or the willingness of the applicant to agree to such measures, be a factor in determining whether removal of the tree is warranted. (Ord. 2007-02 § 2 (part), 2007; Ord. 9907 § 2 (part), 1999)

12.24.037 Mitigation requirements.

In recognition and furtherance of the purposes of this Chapter, as enumerated in Section 12.24.010, it is the policy of the City of Visalia that property owners who are granted a permit to remove an oak tree pursuant to Subparagraph B. of section 12.24.035 offset the loss of the oak tree by either replacing the oak tree removed with new oak trees on the same property (in-kind mitigation) or by paying mitigation fees intended to be used for the establishment of new oak trees on other property or on public property for the benefit of the general public (in-lieu mitigation). In furtherance of this policy, the city manager shall develop an Oak Tree Mitigation Policy establishing in-kind and in-lieu mitigation measures to be required for oak tree removals. The Oak Tree Mitigation Policy, and any subsequent amendment thereto, shall be submitted to the city council for approval by resolution. (Ord. 2007-02 § 2 (part), 2007)

4.4.4 Impact Analysis

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 APE contains suitable nesting and/or foraging habitat for a variety of avian species. Swainson's Hawk was identified as the only special status species likely to occur within the APE.

Implementation of the following measures **BIO-1** through **BIO-3** will reduce potential impacts to nesting raptors, migratory birds, and special status birds to a less than significant level under CEQA and ensure compliance with State and federal laws protecting these avian species.

Pallid bat was identified as the only special status bat species possible to occur within the APE. Roosting habitat becomes especially sensitive to bat populations during the maternity season (March 1 to September 30) while pups are maturing.

A pre-construction focused survey for bats would be required to identify if Project activities would impact existing bat habitat, presence of high-quality roosting habitat, and/or foraging areas within the APE. Existing oak and agricultural trees within the APE may contain hollowed out tree cavities that could potentially be used as roosting habitat for bat species.

Implementation of mitigation measures **BIO-4** through **BIO-8** outlined below will reduce potential impacts to roosting and foraging bats to a less than significant level under CEQA and ensure compliance with State and federal laws protecting these bat species.

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 U.S. Fish and Wildlife Service?

No Impact. The CDFW and USFWS often designates areas of "Critical Habitat" when it lists species as threatened or endangered. Critical Habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species and would require special management or protection. There are no CNDDB-designated "natural communities of special concern" recorded within the APE or surrounding lands. Therefore, there would be no impact.

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. Typical wetlands, and vernal pools communities were not observed onsite at the time of the biological survey. Cameron Creek which runs along the eastern and southern portion of the APE will not be impacted by the Project. The TID Canal which runs along the western portion of the APE would have a bridge constructed across the Canal to connect the APE to the adjacent property. The bridge would be approximately 7 feet across by up to 60 feet wide and would be located near Lot 31. Since the TID canal connects to the Kaweah River and Cameron Creek which are jurisdictional waters, it may be considered jurisdictional by regulatory agencies. If the agencies determine the canal to be jurisdictional, an aquatic resource delineation would be performed, and all required permits would be obtained before bridge work begins.

Since construction will involve ground disturbance over an area greater than one acre, the Project will also be required to obtain a Construction General Permit under the Construction Storm Water Program administered by the RWQCB. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) to ensure construction activities do not adversely affect water quality. Impacts would be less than significant.

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

No Impact. 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, ridgelines, and rivers and creeks supporting riparian vegetation.

The APE does not contain features that would be likely to function as wildlife movement corridors. Further, a portion of the APE located in the median is disturbed by ongoing traffic and the remainder of the APE is completely surrounded by a fence, which would discourage dispersal and migration. There would be no impacts.

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

Less Than Significant Impact. Ten Valley Oak trees were identified within the APE. The City of Visalia Oak Tree Ordinance states (12.24.025):

"It is unlawful for any person to willingly remove, destroy, damage, mutilate, poison, or attempt to kill an oak tree in the city, except as may be allowed pursuant to a removal permit as provided for in Section 12.24.020 of this Chapter, or as designated in a notice to prune an oak tree that satisfies Article 3 of this chapter."[7]

The ordinance goes on to define "oak tree" as (12.24.020):

[7] (American Legal Publishing 2023)

"Oak tree" means Valley Oak Tree *(Quercus lobata*), with a trunk diameter of eighteen (18) inches or greater at a point 4.5 feet above the root crown (Also referred to as "18 inches Diameter Breast Height (DBH)")."

A removal permit must be obtained to remove or destroy them. As the Project will require compliance with the removal permit, impacts will be less than significant.

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

No Impact. The Project is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.

4.4.5 Mitigation

Nesting Raptors, Migratory Birds, and Special Status Birds

BIO-1 **(Avoidance):** The Project's construction activities will occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.

BIO-2 **(Pre-construction Surveys):** If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist would conduct pre-construction surveys for Swainson's hawk nests onsite and within a 0.5-mile radius. This survey would be conducted in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee, 2000) or current guidance. The pre-construction survey would also provide a presence/absence survey for all other nesting birds within the APE and an additional 50 feet, no more than 7 days prior to the start of construction. All raptor nests would be considered "active" upon the nest-building stage.

BIO-3 **(Establish Buffers):** On discovery of any active nests or breeding colonies near work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and are no longer dependent on the nest.

Bats

BIO-4 **(Avoidance):** The Project's construction activities will occur, if feasible, between November 1 and February 28 (outside of bat maternity season) in an effort to avoid impacts to maternity roosts.

BIO-5 **(Pre-Construction Survey):** A pre-construction focused survey for bats will be performed if construction activities fall between March 1 and September 30 (bat maternity season) and include tree removal. The survey will be focused on trees to be removed during construction and be conducted by a qualified biologist within (7) seven days prior to tree removal.

BIO-6 **(Establish Buffers):** On discovery of any bat roosts near work areas, a qualified biologist should determine appropriate construction setback distances (buffer zones) based on applicable CDFW and/or USFWS guidelines, if appropriate. Construction buffers will be identified with flagging, fencing, or other easily visible means, and should be maintained until the biologist has determined that the roost will no longer be impacted by construction.

BIO-7 **(Operational Hours):** Construction activities will be limited to daylight hours to reduce potential impacts to special status bats that could be foraging onsite.

Northern California legless lizard

BIO-8 **(*Avoidance*):** The Project's construction activities will occur, if feasible, where discing or ground disturbance has previously occurred and avoid areas that contain loose soil and leaf litter.

BIO-9 **(*Pre-construction Surveys*):** If activities must occur in areas that contain loose soil and leaf litter a qualified biologist will conduct pre-construction surveys within 48 hours prior to beginning ground disturbing activities. Any loose substrate in which lizards could bury themselves will be gently raked with a hand tool (e.g., a garden rake) to a depth of two inches to locate any lizards that could be under the surface.

Figure 4-2: Oak Trees within the Project Site

4.5 CULTURAL RESOURCES

Table 4-13: Cultural Resources Impacts

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

4.5.1 Baseline Conditions

As the oldest Central Valley city south of Stockton, Visalia hosts an impressive collection of historic sites and structures, including four that are listed on the National Register of Historic Places. Numerous distinctive architectural styles are present in Visalia, concentrated in the city's historic core; particularly notable examples are recorded in the city's local registry.[8]

Visalia was settled in 1852 and incorporated as a city in 1874. In its early years the City was a supply center for nearby gold mining operations, and had an agricultural economy based on livestock. The construction of the Southern Pacific Railroad through the Valley in 1872 triggered a shift in the agricultural economy from cattle toward field crops. The next major economic change was brought about by the availability of irrigation water, resulting in the conversion of large grain fields to small farms, where citrus, grapes, olives, and deciduous fruits were raised. These crops are a mainstay of the region's economy today. [9]

Class III Inventory/Phase I Survey

A Phase I Survey of the Project APE was conducted by ASM Associates in July 2022. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources and the BLM 8100 Manual, using DPR 523 forms. (See Appendix C: Cultural Resources Study)

The survey fieldwork conducted in June 2022, used parallel transects spaced at 15-meter intervals walked across the Project APE, totaling approximately 68-acres. One linear resource (P-54-004877, Cameron Creek) had been recorded as intersecting the study area; however, this was due to inaccuracies in the plotted location and Cameron Creek is actually located entirely outside of the study area. An additional five

[8] (City of Visalia 2014) General Plan Chapter 3 Historic Preservation
[9] Ibid.

previous studies had been completed within 0.5-mi of the study area, resulting in the recordation of six resources within that outer radius. (See Appendix C: Cultural Resources Study)

Records Search

A records search from the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), located at California State University, Bakersfield was conducted in May 2022. The SSJVIC records search includes a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest, the California Historical Landmarks, the California Register of Historical Resources, the National Register of Historic Places (NRHP), and the California State Built Environment Resources Directory listings were reviewed for the above referenced APE and an additional 0.5-mile radius. Due to the sensitive nature of cultural resources, archaeological site locations are not released. Additional sources included the State Office of Historic Preservation Historic Properties Directory, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. (See Appendix C: Cultural Resources Study)

Native American Outreach

The Native American Heritage Commission (NAHC) in Sacramento was contacted in May 2022. NAHC was provided with a brief description of the Project and a map showing its location with a request that the NAHC perform a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate APE. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provide a current list of Native American Tribal contacts to notify of the project. The thirteen tribal representatives representing eight tribes identified by NAHC were contacted in either writing via United States Postal Service in a letter mailed June 13, 2022, or by email on July 18, 2022, informing each Tribe of the Project.

1. Big Sandy Rancheria of Western Mono Indians, Elizabeth D. Kipp, Chairperson
2. Dunlap Band of Mono Indians, Benjamin Charley Jr., Tribal Chair
3. Dunlap Band of Mono Indians, Dirk Charley, Tribal Secretary
4. Kern Valley Indian Community, Julie Turner, Secretary
5. Kern Valley Indian Community, Brandy Kendricks
6. Kern Valley Indian Community, Robert Robinson, Chairperson
7. North Fork Mono Tribe, Ron Goode, Chairperson
8. Santa Rosa Rancheria Tachi Yokut Tribe, Leo Sisco, Chairperson
9. Tubatulabals of Kern County, Robert Gomez, Chairperson
10. Tule River Indian Tribe, Neil Peyron, Chairperson
11. Tule River Indian Tribe, Kerri Vera, Environmental
12. Tule River Indian Tribe, Joey Garfield, Tribal Archaeologist
13. Wuksache Indian Tribe/Eshom Valley Band, Kenneth Woodrow, Chairperson

4.5.2 Applicable Regulations

Federal

National Register of Historic Places

The NHPA authorizes the Secretary of the Interior to establish a NRHP, an inventory of districts, sites, buildings, structures, and objects significant on a national, state, or local level in American history, architecture, archeology, engineering, and culture. The National Register is maintained by the National Park Service, the Advisory Council on Historic Preservation, SHPO, and grants-in-aid programs.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) strives to ensure that all Indian human remains, and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums. It also states the intent for states to provide mechanisms for aiding Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

State

Office of Historic Preservation

The mission of the OHP and the State Historical Resources Commission is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, recreational, aesthetic, economic, social, and environmental benefits will be maintained and enriched for present and future generations. Public Resources Code (PRC) Section 5024 requires consultation with the SHPO when a project may impact historical resources located on State-owned land.

California Register of Historic Resources

The SHPO maintains the CRHR. Historic properties listed, or formally designated for eligibility to be listed, on the National Register are automatically listed on the CRHR (PRC Section 5024.1). State Landmarks and Points of Interest are also automatically listed. The California Register can also include properties designated under local preservation ordinances or identified through local historic resource surveys.

For a historic resource to be eligible for listing on the California Register, it must be significant at the local, state, or national level under one or more of the following four criteria:

- It is associated with events that have made a significant contribution to the broad patterns of local and regional history, or the cultural heritage of California or the United States;
- It is associated with the lives of persons important to local, California, or national history;
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (California Public Resources Code).

California Environmental Quality Act

PRC Section 21083.2 Archaeological Resources: CEQA directs the lead agency to include in its environmental assessment for the project a determination of the project effects on unique archeological resources; defines unique archeological resource; enables a lead agency to require an applicant to make a reasonable effort to preserve or mitigate impacts to any affected unique archeological resource; sets requirements for the applicant to provide payment to cover costs of mitigation; and restricts excavation as a mitigation measure.

PRC Section 21084.1 Historic Resources: CEQA establishes that adverse effects on a historic resource qualifies as a significant effect on the environment; and defines historical resource.

CEQA Guidelines Section 15064.5: This section defines three ways that a property can qualify as a significant historical resource for the purposes of CEQA review:

- If the resource is listed in or determined eligible for listing in the California Register of Historical Resources;
- If the resource is included in a local register of historical resources, as defined in PRC Section 5020.1(k), or is identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g) unless a preponderance of evidence demonstrates that it is not historically or culturally significant; or
- If the lead agency determines the resource to be significant as supported by substantial evidence (CEQA Guidelines Section 15064.5)

In addition to determining the significance under CEQA and eligibility of any identified historical resource for the California Register, historic properties must be evaluated under the criteria for the National Register should federal funding or permitting become involved in any undertaking subject to this document.

CEQA Guidelines on Mitigation of Cultural Resources Impacts

CEQA Guidelines Section 15126.4 states that “public agencies should, whenever feasible, seek to avoid damaging effects on any historical resources of an archeological nature.” The Guidelines further state that preservation-in-place is the preferred approach to mitigate impacts on archaeological resources. However, according to Section 15126.4, if data recovery through excavation is “the only feasible mitigation,” then a “data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resources, shall be prepared and adopted prior to any excavation being undertaken.” Data recovery is not required for a resource of an archaeological nature if “the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource.” The section further states that its provisions apply to those archaeological resources that also qualify as historic resources.

Native American Heritage Act

Also relevant to the evaluation and mitigation of impacts to cultural resources is the Native American Heritage Act of 1976 which established the NAHC and protects Native American religious values on state property (see PRC Section 5097.9).

Public Notice to California Native American Indian Tribes

GC Section 65092 includes California Native American tribes that are on the contact list maintained by the NAHC in the definition of “person” to whom notice of public hearings shall be sent by local governments.

Disposition of Human Remains (Health and Safety Code Section 7050.5)

When an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native American groups or individuals as identified by the NAHC as provided in PRC Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials. Furthermore, HSC Section 7050.5 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 NAHC.

California Native American Graves Protection and Repatriation Act of 2001

HSC Sections 8010-8011 establish a State repatriation policy intent that is consistent with and facilitates implementation of NAGPRA. The Act strives to ensure that all California Indian human remains, and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also states the intent for the state to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

Local

City of Visalia General Plan Update

- Policy OSC-P-39: Establish requirements to avoid potential impacts to sites suspected of being archaeologically, paleontologically, or historically significant or of concern, by:
    - Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;
    - Determining the potential effects of development and construction on archaeological or paleontological resources (as required by CEQA);
    - Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historical and archaeological sensitivity; and
    - Implementing appropriate measures to avoid the identified impacts, as conditions of project approval.

4.5.3 Impact Analysis

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

See section below.

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

a and b) Less than Significant Impact with Mitigation Incorporated. A CHRIS records search, from the SSJVIC, was conducted by ASM in June 2022 and confirmed there have been no previous cultural resource studies conducted within the Project area. There have been five previous cultural resource studies conducted within the one-half mile radius, TU-01167, 01383, 01690, 01764, 01770. The search also confirmed that there are seven recorded resources within one-half mile radius of the Project site. It is unlikely that the Project has the potential to result in significant impacts or adverse effects to any known unknown cultural or historical resources, such as archaeological remains, artifacts or historic properties or structures. However, in the improbable event that cultural resources are encountered during Project construction, implementation of mitigation measure **CUL-1** outlined below, would reduce impacts to any historical or archaeological resource to less than significant.

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

Less than Significant Impact with Mitigation Incorporated. There is no evidence in the record that indicates the Project has the potential to be an unknown burial site or the site of buried human remains. In the unlikely event of such a discovery, mitigation shall be implemented. With incorporation of mitigation measure **CUL-2** outlined below, impacts resulting from the discovery of remains interred on the Project site would be less than significant.

4.5.4 Mitigation

CUL-1 Should archaeological remains or artifacts be unearthed during any stage of project activities, work in the area of discovery shall cease until the area is evaluated by a qualified archaeologist. If mitigation is warranted, the project proponent shall abide by recommendations of the archaeologist.

CUL-2 In the event that any human remains are discovered on the Project site, the Tulare County Coroner must be notified of the discovery (California Health and Safety Code, Section 7050.5) and all activities in the immediate area of the find or in any nearby area reasonably suspected to overlie adjacent human remains must cease until appropriate and lawful measures have been implemented. If the Coroner determines that the remains are not recent, but rather of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours to permit the NAHC to determine the Most Likely Descendent of the deceased Native American.

4.6 ENERGY

Table 4-14: Energy Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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?	☐	☐	☒	☐

4.6.1 Baseline Conditions

The subject property is composed of an orchard spanning approximately 67 acres. Typical current cultivation operations include traversing the site with all-terrain vehicles and pickup trucks, removal and replanting of orchards, and the picking of fruit.

4.6.2 Applicable Regulations

Federal

Energy Independence and Security Act of 2007

The Energy Independence and Security Act, enacted by Congress in 2007, is designed to improve vehicle fuel economy and help reduce the United States' dependence on foreign oil. It expands the production of renewable fuels, reducing dependence on oil and confronting climate change. Specifically, it does the following:

- Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Reduces United States demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020, an increase in fuel economy standards of 40 percent as compared to 2007 levels.

The Energy Independence and Security Act of 2007 also set energy efficiency standards for lighting (specifically light bulbs) and appliances. Development would also be required to install photosensors and energy-efficient lighting fixtures consistent with the requirements of 42 United States Code Section 17001 et seq.

Energy Policy and Conservation Act

Enacted in 1975, this legislation established fuel economy standards for new light-duty vehicles sold in the United States. The law placed responsibility on the National Highway Traffic and Safety Administration (NHTSA) for establishing and regularly updating vehicle standards. The United States Environmental Protection Agency (U.S. EPA) administers the Corporate Average Fuel Economy program, which determines vehicle manufacturers' compliance with existing fuel economy standards. Since the inception of the

Corporate Average Fuel Economy program, the average fuel economy for new light-duty vehicles steadily increased from 13.1 miles per gallon for the 1975 model year to 30.7 miles per gallon for the 2014 model year and is proposed to increase to 54.5 by 2025. Light-duty vehicles include autos, pickups, vans, and sport-utility vehicles.

Energy Star Program

Energy Star is a voluntary labeling program introduced by U.S. EPA to identify and promote energy-efficient products to reduce GHG emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs, and heating and cooling systems. Under this program, appliances that meet specifications for maximum energy use established under the program are certified to display the Energy Star label. In 1996, the U.S. EPA joined with the Energy Department to expand the program, which now also includes certifying commercial and industrial buildings as well as homes.

Construction Equipment Fuel Efficiency Standard

The U.S. EPA sets emission standards for construction equipment. The current iteration of emissions standards for construction equipment are the Tier 4 efficiency requirements contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068. Emissions requirements for new off-road Tier 4 vehicles were completely phased in by the end of 2015.

State

Senate Bill 350

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires a doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

California Renewable Portfolio Standard and Senate Bill 100

Approved by former Governor Brown on September 10, 2018, SB 100 accelerates the state's Renewable Portfolio Standard program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Title 24, California Code of Regulations

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-residential Buildings. The CEC established Title 24 in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new efficient technologies and methods. In 2022, the CEC updated Title 24 standards with more stringent requirements effective January 1, 2023. All buildings for which an application for a building permit is submitted on or after January 1, 2023, must follow the 2022 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

California Green Building Standards Code (2019), California Code of Regulations Title 24, Part 11

California's Green Building Code, referred to as CalGreen, was developed to provide a consistent approach to green building in the State. Having taken effect in January 2023, the most recent version of CalGreen lays out the minimum requirements for newly constructed residential and nonresidential buildings to reduce GHG emissions through improved energy efficiency and process improvements. It also includes voluntary tiers to further encourage building practices that improve public health, safety, and general welfare by promoting a more sustainable design.

2017 Climate Change Scoping Plan

On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the State's 2030 GHG emissions reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation. The 2017 Scoping Plan includes a wide variety of goals related to energy efficiency and renewable energy that are intended to help meet the State's 2030 target, including goals specifically targeted at the water sector.

Local

Visalia General Plan

The City of Visalia implements the following policies that are applicable to the Project related to energy consumption:

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.

4.6.3 Impact Analysis

a) Would the project 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 Project would comply with Building Energy Efficiency Standards included in Title 24 of the California Code of Regulations, which requires new residential development to incorporate energy efficiency standards into Project designs. In addition, the Project would implement the aforementioned General Plan policy. The Project proposes the construction of residence that will comply with the energy conservation requirements of the California Building Code and will be adjacent to an existing bicycle route.

Natural gas for the Project and the surrounding area are serviced by SoCalGas. The Project site does not currently have a demand for natural gas usage and the Project would represent an increase in natural gas usage. However, SoCalGas has indicated it can meet the increased demand for natural gas with its existing facilities and through engaging in Energy Efficiency (EE) programs.

Current regulations for construction equipment, heavy-duty equipment, and earthmoving equipment used in construction contributes to reductions in energy as well as reduction in pollutant emissions. California implemented its In-Use Off-Road Diesel Fueled Fleets regulations (off-road regulation) which applies to all self-propelled off-road diesel vehicles 25 horsepower or greater and most two-engine vehicles. The Small Off-Road Engines program was implemented by California to apply to categories of outdoor powered equipment and specialty vehicles often used in construction.

Through compliance with energy reduction standards and regulations aimed at reducing consumption of transportation related energy consumption, as well as the energy provider's energy reduction programs, the Project will have less than significant impacts related to energy usage during Project operations and construction and its impacts related to wasteful, inefficient, or unnecessary energy consumption overall, would be less than significant.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant Impact. The Project would not conflict with any of the applicable plans including Title 24, AB 32, SB 32, SB 350, and SB 100, therefore the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency and would be less than significant.

4.7 GEOLOGY AND SOILS

Table 4-15: Geology and Soils Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
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 or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☒	☐	☐

4.7.1 Baseline Conditions

Geology and Soils

Surface soils exhibit various characteristics dependent on location, slope, parent rock, climate, and drainage. The Project site currently contains Grangeville Sandy Loam, 0 to 2 percent slope and Nord Fine Sandy Loam, 0 to 2 percent slope.[10]

[10] (United States Department of Agriculture, Natural Resources Conservation Service 2019)

Faults and Seismicity

The Project is not located within an Alquist-Priolo Earthquake Fault Zone and there are no known active faults within the City of Visalia. The nearest major faults are the Owens Valley and San Andreas Fault, located approximately 58 miles east and 72 miles southwest of the Project site, respectively. The San Andreas fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. The Kern Canyon Fault is located approximately 42 miles east and the Poso Fault is located approximately 50 miles south of the Project site.

Liquefaction

The potential for liquefaction, which is the loss of soil strength due to seismic forces, is dependent on soil types and density, the groundwater table, and the duration and intensity of ground shaking. Although no specific liquefaction hazard areas have been identified in Tulare County or the City of Visalia, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. Soil types along the Valley floor are not generally conducive to liquefaction because they are generally too coarse. Furthermore, according to the California Department of Water Resources Live Groundwater Levels map, the groundwater levels measured at a location approximately one mile to the east of the Project site was approximately 131.7 feet below ground surface as of March 17, 2021; this further reduces potential for liquefaction.

Soil Subsidence

Subsidence occurs when a large land area settles due to over-saturation or extensive withdrawal of groundwater, oil, or natural gas. These areas are typically composed of open-textured soils, high in silt or clay content, that become saturated. Although some areas in Tulare County have experienced subsidence due to groundwater overdraft, the City of Visalia's elevation has remained relatively unchanged.

Soils of the Project site consist of Grangeville Sandy Loam and Nord Fine Sandy Loam, which are coarse-textured, low in clay content, and have a low shrink-swell potential. Therefore, soils onsite represent a low risk of subsidence.

Dam and Levee Failure

The nearest dam with a high likelihood of breaching is the Bravo Lake Reservoir Dam, located approximately 10.5 miles to the northeast.[11]

4.7.2 Applicable Regulations

State

Alquist-Priolo Earthquake Fault Zoning Act (1972)

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act) requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazard of fault rupture; however, surface fault rupture is not necessarily restricted to the area within the Alquist-Priolo Zone. The Alquist-Priolo Act prohibits the location of most structures for human occupancy across active fault traces. Within these zones, cities and counties must regulate certain development, which includes withholding permits

[11] (California Department of Water Resources 2022)

until geologic investigations demonstrate that development sites are not threatened by future surface displacement. There are no designated Alquist-Priolo zones in the Project area. The risk of surface fault rupture is not necessarily restricted to the area within a Fault Rupture Hazard Zone, as designated under the Alquist-Priolo Act.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. Before a development permit is granted for a site within a Seismic Hazard Zone, a geotechnical investigation of the site must be conducted, and appropriate mitigation measures incorporated into the project design. Geotechnical investigations conducted within Seismic Hazard Zones must incorporate standards specified by CGS Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards.[12] The purpose of the Seismic Hazard Mapping Act is to identify where special provisions, beyond those contained in the California Building Code (CBC), are necessary to ensure public safety. This need has not been recognized for the hazard of ground shaking.

Design provisions contained in the CBC are believed to be representative of current knowledge and capability in earthquake-resistant design.[13] No portion of County has been mapped under the Seismic Hazards Zoning Program.

California Building Standards Code

The CBC, codified in Title 24 Part 2 of the California Code of Regulations (CCR), is administered by the California Building Standards Commission which by law is responsible for coordinating all building standards. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The current version took effect January 1, 2020, and contains necessary California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion into building codes. The provisions apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

California Department of Transportation

Caltrans jurisdiction includes State and interstate routes within California. Any work within the right-of-way of a federal or State transportation corridor is subject to Caltrans regulations governing allowable actions and modifications to the right-of-way. Caltrans standards incorporate the CBC and contain numerous rules

[12] (California Geological Survey 2008)
[13] (ICC Digital Codes 2020)

and regulations to protect the public from seismic hazards such as surface fault rupture and ground shaking. In addition, Caltrans standards require that projects be constructed to minimize potential hazards associated with cut and fill operations, grading, slope instability, and expansive or corrosive soils, as described in the Caltrans Highway Design Manual (HDM). The southern portion of the Project site abuts SR 198, and Houston Avenue (SR 216) abuts the northern portion of the site; any work that is done within Caltrans right-of-way would be coordinated with Caltrans.

Local

City of Visalia General Plan

- Objective S-O-1: Minimize risks of property damage and personal injury posed by geologic and seismic hazards.
- Policy OCS-P-25: Require new development to implement measures, as appropriate, to minimize soil erosion related to grading, site preparation, landscaping and construction.

City of Visalia General Plan Seismic Safety Element

The Visalia General Plan incorporates the Seismic Safety Element completed in 1974 by the Five-County Seismic Safety Committee, with participation from the Tulare Council of Governments. The Safety Element determines that ground shaking is the main potential hazard in the southern Central Valley, and the risk of ground shaking in the Visalia area is low. The Element includes a number of policies, calling for the creation of a public relations and education program to build awareness; development of an Earthquake Disaster Plan; consideration of seismic hazards in the environmental impact assessment process; and adoption and enforcement of the Uniform Building Code (since replaced by the CBC), among others.

City of Visalia Building Code

The City has adopted the 2022 CBC as the City's building code and ordinance (Title 15: Buildings and Construction).

Tulare County Multi-Jurisdictional Hazard Mitigation Plan

A hazard mitigation plan is a formal document that outlays the plans to reduce or eliminate the long-term risk to human life and property from natural or manmade hazards. Visalia participates in the preparation of the Multi-Jurisdictional Local Hazard Mitigation Plan (MJ-LHMP) which covers the County and eleven participating cities. The latest adopted MJ-LHMP was prepared in 2018. The plan has been designed to meet four goals; (1) significantly reduce life loss and injuries, (2) minimize damage to structures and property, as well as disruption of essential services and human activities, (3) protect the environment, and (4) promote hazard mitigation as an integrated public policy.

4.7.3 Impact Analysis

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.

See section below.

ii. Seismic-related ground failure, including liquefaction?

i and ii) Less than Significant Impact. The Project site is located in an area traditionally characterized by relatively low seismic activity. The site is not located in an Alquist-Priolo Earthquake Fault Zone as established by the Alquist-Priolo Fault Zoning Act (Section 2622 of Chapter 7.5, Division 2 of the California Public Resources Code). The nearest major faults are the Owens Valley and San Andreas Fault, located approximately 58 miles east and 72 miles southwest of the Project site, respectively. The San Andreas fault is the dominant active tectonic feature of the Coast Ranges and represents the boundary of the North American and Pacific plates. The Kern Canyon Fault is located approximately 42 miles east and the Poso Fault is located approximately 50 miles south of the Project site.

Although there are no known earthquake faults within the vicinity of the Project and strong ground shaking is unlikely, construction of the proposed residential structures would comply with the most recent seismic standards as set forth in the California Building Standards Code. Compliance with these standards would ensure potential impacts related to strong seismic ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Liquefaction occurs when loose, water-saturated sediments lose strength and fail during strong ground shaking. Although no specific liquefaction hazard areas have been identified in Tulare County and the City of Visalia, this potential is recognized throughout the San Joaquin Valley where unconsolidated sediments and a high-water table coincide. Using the United States Department of Agriculture (USDA) NRCS soil survey, an analysis of the soils onsite was performed. Soils in the area consists of Grangeville Sandy Loam and Nord Fine Sandy Loam, which are well-drained and coarse-textured, representing a low risk for liquefaction or seismic-related ground failure. In addition, using California Department of Water Resources Live Groundwater Levels map, the groundwater levels measured at a location approximately one mile to the southwest of the Project site was approximately 131.7 feet below ground surface as of March 17, 2022; this further reduces potential for liquefaction. [14] Furthermore, as mentioned above in Impact Assessments 4.7.3 a) i-ii, strong seismic ground shaking is unlikely to occur. Any impacts related to seismic-related ground failure, including liquefaction, would be less than significant.

iv. Landslides?

No Impact. Landslides usually occur in locations with steep slopes and unstable soils. The Project is located on the Valley floor where no major geologic landforms exist, and the topography is essentially flat and level. The nearest foothills are approximately 9 miles east of the Project site. Therefore, the Project site has minimal-to-no landslide susceptibility, and there would be no impact.

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

Less than Significant Impact. Earthmoving activities associated with the Project would include excavation, trenching, grading, and construction over an area of approximately 67.7 acres. These activities could expose soils to erosion processes and the extent of erosion would vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions. Dischargers whose projects disturb one (1) or more acres of soil or whose projects disturb less than one acre but are

[14] (California Department of Water Resources 2022)

part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Since the Project site has relatively flat terrain with a low potential for soil erosion and would comply with the State Water Resource Board requirements, impacts 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?

See section below.

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?

c and d) Less than Significant Impact. Soils of the Project site consist of Grangeville Sandy Loam and Nord Fine Sandy Loam, which are coarse-textured, low in clay content, and well-drained. These soils have a low shrink-swell potential and a low plasticity index, and therefore, are not considered expansive soils. Furthermore, the aforementioned physical properties of these soils make subsidence, liquefaction, lateral spreading, or other ground failure unlikely. Any impacts would be considered less than significant.

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. Septic installation or alternative wastewater disposal systems are not necessary for the Project. The Project would be required to connect to the City of Visalia's wastewater system. There would be no impact.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Less than Significant Impact with Mitigation Incorporated. No known paleontological resources have been identified at the Project site. However, if a paleontological resource is found then the construction impacts can make a significant impact unless mitigated properly. The Project would be less than significant with **GEO-1** incorporated.

4.7.4 Mitigation

GEO-1 Should paleontological resources be encountered on the Project site, all ground disturbing activities in the area shall stop. A qualified paleontologist shall be contacted to assess the discovery. Mitigation may include monitoring, recording the fossil locality, data recovery and analysis, a final report. Public educational outreach may also be appropriate. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City of Visalia for review, and (if paleontological materials are recovered) a paleontological repository, such as the University of California Museum of Paleontology.

4.8 GREENHOUSE GAS EMISSIONS

Table 4-16: Greenhouse Gas Emissions Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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?	☐	☐	☒	☐

4.8.1 Baseline Conditions

The subject property is composed of an orchard spanning approximately 67 acres. Typical current cultivation operations include traversing the site with all-terrain vehicles and pickup trucks, removal and replanting of orchards, and the picking of fruit.

4.8.2 Applicable Regulations

Federal

Section 202 GHG Regulation of Cars and Light Duty Trucks

This rule was proposed jointly by USEPA and the National Highway Traffic Safety Administration to create a national program of GHG emission standards and Corporate Average Fuel Economy standards. The standards apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards are designed to achieve a national vehicle fleet whose emissions and fuel economy performance improves year after year. The goal is to reduce CO_2 emissions by 960 million metric tons and save 1.8 billion barrels of oil over the lifetime of vehicles sold in model years 2012 through 2016.[15] The final rule was signed on April 1, 2010, and became effective 60 days after its publication in the Federal Register.

Greenhouse Gas Findings (2009)

In the United States Supreme Court case Massachusetts v. USEPA (2007), 12 states, three cities, and 13 environmental groups filed suit that the USEPA should be required to regulate carbon dioxide and other GHG as pollutants under the Federal Clean Air Act. In April 2007, the United States Supreme Court found that the USEPA has a statutory authority to formulate standards and regulations to address GHG, which it historically has not done. On December 7, 2009, the Environmental Protection Agency Administrator finalized two findings to be effective January 14, 2010. The findings are related to GHG under section 202(a) of the Clean Air Act. These findings do not themselves impose any requirements on industry or other entities.

[15] USEPA, 2010.

- **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)—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed GHG from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.[16]

Executive Order 13154 Federal Leadership in Environmental, Energy, and Economic Performance

On October 5, 2009, President Obama issued Executive Order 13154, which instructs federal agencies to set or achieve various emissions reduction and energy and environmental benchmarks by 2015, 2020, and 2030. The order requires agencies to set GHG emissions reduction targets for 2020 within 90 days and requires Office of Management and Budget (OMB) to set a federal government target for 2020 within 120 days. The order also sets out required reductions in vehicle fleet petroleum use and requires increases in water and energy efficiency and in recycling and waste diversion rates. The order also mandates adoption of certain contract and procurement practices designed to promote energy and water efficiency and environmentally preferable products.

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act (EPCA) of 1975 declared it to be United States policy to establish a reserve of up to 1 billion barrels of petroleum and established nationwide fuel economy standards in order to conserve oil. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the DOT is responsible for revising existing fuel economy standards and establishing new vehicle fuel economy standards.

The Corporate Average Fuel Economy program was established to determine vehicle manufacturer compliance with the government's fuel economy standards. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The USEPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the USEPA city and highway fuel economy test results. Based on information generated under the CAFE program, the DOT is authorized to assess penalties for noncompliance.

CAFE rules require the average fuel economy of all vehicles of a given class that a manufacturer sells in each model year to be equal or greater than the standard. CAFE standards apply to passenger cars and light trucks (gross vehicle weight of 8,500 pounds or less). Heavy-duty vehicles (i.e. gross vehicle weight over 8,500 pounds) are not currently subject to fuel economy standards. The EPCA was reauthorized in 2000 (49 CFR 533). The Energy Independence and Security Act of 2007 revised CAFE standards for the first time in 30 years, followed quickly by Section 202 GHG Regulation of Cars and Light Duty Trucks, which calls for further revision of the CAFE standards. Both of those regulations are described above.

Energy Policy Acts of 1992, 2005, etc. (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable

[16] USEPA, 2009.

of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions would be allowed for businesses and individuals to cover the incremental cost of AFVs. The Act also requires states to consider a variety of incentive programs to help promote AFVs. The Energy Policy Act of 2005 includes updated provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Global Change Research Act (1990)

The purpose of the legislation was: "…to require the establishment of a United States Global Change Research Program aimed at understanding and responding to global change, including the cumulative effects of human activities and natural processes on the environment, to promote discussions towards international protocols in global change research, and for other purposes." To that end, the Global Change Research Information Office was established in 1991 (it began formal operation in 1993) to serve as a clearinghouse of information. The Act requires a report to Congress every four years on the environmental, economic, health and safety consequences of climate change; however, the first and only one of these reports to-date, the National Assessment on Climate Change, was not published until 2000. In February 2004, operational responsibility for Global Change Research Program shifted to the U.S. Climate Change Science Program.

State

There are a variety of statewide rules and regulations which have been implemented or are in development in California which mandate the quantification or reduction of GHGs. Under CEQA, an analysis and mitigation of emissions of GHGs and climate change in relation to a Project is required where it has been determined that a project would result in a significant addition of GHGs. Certain APCDs have proposed their own levels of significance. The SJVAPCD, which has regulatory authority over the air emissions from this project, has not established a significance threshold.

California Air Resources Board

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing its own air quality legislation, the CCAA, adopted in 1988. CARB was created in 1967 from the merging of the California Motor Vehicle Pollution Control Board and the Bureau of Air Sanitation and its Laboratory.

The CARB has primary responsibility in California to develop and implement air pollution control plans designed to achieve and maintain the NAAQS established by the USEPA. Whereas the CARB has primary responsibility and produces a major part of the SIP for pollution sources that are statewide in scope, it relies on the local air districts to provide additional strategies for sources under their jurisdiction. The CARB combines its data with all local district data and submits the completed SIP to the USEPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by the CARB, and attainment plans adopted by APCDs and AQMDs and approved by CARB.

States may establish their own standards, provided the state standards are at least as stringent as the NAAQS. California has established the CAAQS pursuant to HSC Section 39606(b) and its predecessor statutes.

HSC Section 39608 requires that CARB "identify" and "classify" each air basin in the state on a pollutant-by-pollutant basis. Subsequently, CARB designated areas in California as nonattainment based on violations of the CAAQSs. Designations and classifications specific to the SJVAB can be found in the next section of this document. Areas in the state were also classified based on severity of air pollution problems. For each nonattainment class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five percent-per-year reduction in nonattainment air pollutants or their precursors, averaged every consecutive three-year period, unless an approved alternative measure of progress is developed. In addition, air districts in violation of CAAQS are required to prepare an Air Quality Attainment Plan that lays out a program to attain and maintain the CCAA mandates.

Other duties of CARB include monitoring air quality, which has established and maintains, in conjunction with local APCDs and AQMDs, and SLAMS network, which monitor the present pollutant levels in the ambient air.

California Attorney General

The Attorney General has a special role in protecting the environment and public health in California. By law, the Attorney General has independent authority, acting directly in the name of the People, "to act to protect the natural resources of the State of California from pollution, impairment, or destruction." The Attorney General plays a leading role in the oversight and enforcement of CEQA and the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). The Attorney General also prosecutes civil and criminal violations of environmental laws in the name of the People of the State of California and on behalf of client agencies.

CEQA Guidelines Appendix F: Energy Conservation

Appendix F of the CEQA Guidelines describes the types of information and analyses related to energy conservation that are to be included in the EIR process. Energy conservation is described in terms of decreasing per capita energy consumption; decreasing reliance on fossil fuels such as coal, natural gas, and oil; and increasing reliance on renewable energy sources. To assure that energy implications are considered in project decisions, EIRs must include a discussion of the potentially significant energy impacts of Projects (to the extent relevant and applicable to the Project), with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

Executive Order S-3-05: Executive Order S-3-05 was established by Governor Arnold Schwarzenegger in June 2006.

Executive Order S-3-05 establishes statewide emission reduction targets through the year 2050:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels; and
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

This Executive Order does not include any specific requirements that pertain to the Project. However, actions taken by the State to implement these goals may affect the Project, depending on the specific implementation measures that are developed.

Senate Bill 1368: Senate Bill 1368 (SB 1368) was enacted in 2006 and required the California Public Utilities Commission (CPUC) to establish a CO_2 emissions standard for base load generation owned by or under long-term contract with publicly owned utilities. The CPUC established a GHG Emissions Performance

Standard (EPS) of 1,100 pounds of CO_2 per megawatt-hour. SB 1368 also requires the posting of notices of public deliberations by publicly owned companies on the CPUC website and establishes a process to determine compliance with the EPS. The Project, as a renewable energy generation facility, is determined by rule to comply with the GHG Emission Performance Standard requirements of SB 1368.

Assembly Bill 32: California passed the California Global Warming Solutions Act of 2006 (AB 32, codified at HSC Sections 38500-38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction would be accomplished by enforcing a statewide cap on GHG emissions that would be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB was required to adopt regulations by January 1, 2011, to achieve reductions in GHGs to meet the 1990 emission cap by 2020. In 2019, CARB disclosed that emissions in 2017 were 7 million metric tons of CO_2 equivalent (MMT CO_2e) below the State 2020 limit.

Senate Bill 375: SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable community strategy (SCS) or alternative planning strategy (APS) that would prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, would provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets would be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPOs SCS or APS for consistency with its assigned targets.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

Office of Planning and Research Technical Advisory: Consistent with SB 97, on June 19, 2008, Office of Planning and Research (OPR) released its *Technical Advisory on CEQA and Climate Change*, which was developed in cooperation with the Resources Agency, the California Environmental Protection Agency (CalEPA), and CARB. The *Technical Advisory* offers the informal interim guidance regarding the steps lead agencies should take to address climate change in their CEQA documents, until CEQA guidelines are developed pursuant to SB 97 on how state and local agencies should analyze, and when necessary, mitigate GHG.

According to OPR, lead agencies should determine whether GHG may be generated by a Project, and if so, quantify or estimate the GHG emissions by type and source. Second, the lead agency must assess whether those emissions are individually or cumulatively significant. When assessing whether a project's effects on climate change are "cumulatively significant" even though project specific GHG contribution may be individually limited, the lead agency must consider the impact of the project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the GHG emissions from the project as proposed are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.

On April 13, 2009, OPR sent proposed amendments of the CEQA Guidelines to the Secretary of the Resources Agency for promulgation. The proposed amendments contain Model Policies for GHGs in General Plan. OPR recommended changes to fourteen sections of the existing guidelines, including: the determination of significance as well as thresholds; statements of overriding consideration; mitigation; cumulative impacts; and specific streamlining approaches. The proposed Guidelines also include an explicit requirement that EIRs analyze GHG emissions resulting from a project when the incremental contribution of those emissions may be significant. OPR adopted new amendments in 2018; however, these amendments to the CEQA Guidelines apply prospectively only.

California Energy Code: Title 24, Part 6 of the California Code of Regulations, called the California Energy Code, includes standards mandating energy efficiency measures in new construction, as well as retrofitting existing buildings. Since its establishment in 1977, the building efficiency standards (along with standards for energy efficiency in appliances), which regulate energy consumed in buildings for heating, cooling, ventilation, water heating, and lighting, have contributed to a reduction in electricity and natural gas consumption in California. The standards are updated every three years to allow new energy efficiency technologies to be considered. The latest update to Title 24 standards became effective January 1, 2020.

California Green Code: CalGreen, the nation's first Green Building Standards Code, became effective in August 2009 for voluntary compliance and local adoption, and became effective for mandatory compliance on January 1, 2011. This Code establishes minimum standards for new construction that are intended to help the State achieve the AB 32 goal of reducing GHG emissions to 1990 levels by 2020. In addition to energy efficiency standards, CalGreen includes mandatory measures for water conservation, storm water drainage and retention, material conservation, and construction waste reduction. The requirements for nonresidential construction also include parking, landscaping, and other standards. Local jurisdictions have the option of adopting procedures by ordinance to improve the level of construction beyond the CalGreen minimum standard.

Local

City of Visalia General Plan

- Objective AQ-O-3: Reduce emissions of greenhouse gases that contribute to global climate change in accord with federal and State law.

- Policy 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.

  A VERA is a voluntary mitigation measure where a project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emissions reduction projects, with the District serving a role of administrator of emissions reduction programs and verifier of successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project-specific emissions by providing funds for the District's Strategies and Incentives Program. The funds are disbursed in the form of grants for projects that achieve emission reductions.

Visalia Climate Action Plan (CAP)

The City's CAP includes a baseline GHG emissions inventory of municipal and community emissions, identification and analysis of existing and proposed GHG reduction measures, and reduction targets to help Visalia work toward the States goal of an 80 percent reduction below baseline emissions by 2050. The plan sets 2020 and 2030 reduction targets, and includes reduction actions for energy, transportation, and waste and resource conservation. The CAP includes targets and action steps for the municipal and community sectors. The CAP has been prepared concurrently with the proposed General Plan (GP), is evaluated in this EIR together with the proposed GP and includes objectives and specific policies from the proposed GP to address long-term emissions reduction efforts by the City.

Visalia's Climate Change Initiatives

In January 2007, Visalia's mayor signed the "Cool Cities" pledge, part of the U.S. Mayors Climate Protection Agreement. By entering into this agreement, the City originally adopted the goal of reducing citywide GHG emissions to 7% below 1990 levels by 2012. As detailed in the CAP, this goal was subsequently expanded in response to CARBs recommended reduction target of 15% below the 2005 baseline, and the City added a 2030 mitigation target to correlate with the 2030 GP Update and the goal of achieving an 80% reduction by 2050.

In 2008, the City also became a partner with the San Joaquin Valley Clean Energy Organization (SJVCEO), which is a non-profit serving the eight-county region. This partnership led to the development of the Valley Innovative Energy Watch, which is a partnership with SCE, Southern California Gas Company (SoCalGas), Pacific Gas & Electric, SJVCEO, and other public jurisdictions in Tulare and Kings Counties. One major task in this initiative was assisting each of the local government partners to develop comprehensive clean energy/GHG reduction plans, including the identification of baseline GHG emissions and energy use.

4.8.3 Impact Analysis

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. The Project would generate 5,325 $MTCO_2e$/yr using an operational year of 2005, which includes area, energy, mobile, waste, and water sources. "Business as usual" (BAU) is referenced in CARBs AB 32 Scoping Plan as emissions projected to occur in 2020 if the average baseline emissions during the 2002-2004 period grew to 2020 levels, without control or BPS offsets. As a result, an estimate of the Projects operational emissions in 2005 were compared to operational emissions in 2024 in order to determine if the Project meets the 29% emission reduction. The SJVAPCD has reviewed relevant scientific information related to GHG emissions and has determined that they are not able to determine a specific quantitative level of GHG emissions increase, above which a project would have a significant impact on the environment, and below which would have an insignificant impact. As a result, the SJVAPCD has determined that projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG. Results of the analysis show GHG emissions in the year 2020 as 3,435 $MTCO_2e$/yr. This represents an achievement of 35% GHG emission reduction on the basis of BAU, which does meet the 29% GHG emission reduction target. Based on the assessment above, the Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, any impacts would be 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. To assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHG on global climate change, the SJVAPCD has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance-based standards, otherwise known as BPS, to assess significance of project-specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from BAU, is required to determine that a project would have a less than cumulatively significant impact.

The Project incorporates a recreational park that will encourage biking, jogging, and walking and provide neighboring residential neighborhoods with direct access to its facilities. The types of facilities incorporated into the Project coincide with the pedestrian infrastructure-based mitigation measures included in the SJVAPCDs Mitigation Measures document. Those measures include providing pedestrian enhancing infrastructure that includes sidewalks and pedestrian paths and direct pedestrian connections.

The City’s CAP was created as one of the first key steps to guiding the development and enhancement of actions designed to reduce Visalia’s GHG emissions. The CAP represents the results of a GHG emissions inventory effort which serves as a starting point for the development of a comprehensive municipal and community strategy for addressing GHG emission reduction goals. The CAP identifies existing and proposed community measures designed to reduce GHG emissions. The Project incorporates the following identified existing and proposed community measures assisting the City achieve its 2020 15% and 2030 30% reduction goals:

Expansion of bicycle paths, lanes, and trails: As part of the Project and pursuant to the General Plan and the Waterways and Trails Master Plan, the Project would dedicate the subject property’s portion of the Segment 4 Preferred Trail Alignment, which would run adjacent to Cameron Creek within the Project area. This trail would be a Class I Bike Trail and would maintain views of Cameron Creek. Based on the assessment above, the Project would further the achievement of the City’s greenhouse gas reduction goals and would not conflict with applicable plans, policies or regulations adopted for the purpose of reducing the emissions of GHG. Therefore, any impacts would be less than significant.

4.9 HAZARDS AND HAZARDOUS MATERIALS

Table 4-17: Hazards and Hazardous Materials Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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 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 a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

4.9.1 Baseline Conditions

Hazardous Materials

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code (GC) Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's EnviroStor database provides DTSC's component of Cortese

List data (DTSC, 2010). In addition to the EnviroStor database, the State Water Resources Control Board (SWRCB) Geotracker database provides information on regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups sites, Department of Defense sites, and Land Disposal program. A search of the DTSC EnviroStor[17] database and the SWRCB Geotracker[18] performed on March 29, 2022 determined that there are no known active hazardous waste generators or hazardous material spill sites within the Project site or immediate surrounding vicinity.

Airports

The Project site would be located approximately 9.8 miles west of the Visalia Municipal Airport. The Project would not be located within an adopted Airport Land Use Compatibility Plan (ALUCP).

Emergency Response Plan

The City of Visalia has an Emergency Operations Plan that was adopted in 2011. The plan lays out the planned procedures that the City would follow in the event of an emergency.

Sensitive Receptors

Sensitive Receptors are groups that would be more affected by air, noise, and light pollution, pesticides, and other toxic chemicals than others. This includes infants, children under 16, elderly over 65, athletes, and people with cardiovascular and respiratory diseases. High concentrations of these groups would include, daycares, residential areas, hospitals, elder care facilities, schools and parks. The nearest sensitive receptors include the single-family residences at the northwest corner of the Project site.

4.9.2 Applicable Regulations

Federal

Occupational Health and Safety Administration

The Occupational Health and Safety Administration published standard 1910.120, addressing dangers that hazardous materials pose in the workplace. The standard requires that employers evaluate the potential health hazard that hazardous materials pose in the workplace and communicate information concerning hazards and appropriate protective measures to employees.

State

Department of Toxic Substances Control

The USEPA has delegated much of its regulatory authority to the individual states. The DTSC of CalEPA enforces hazardous materials and waste regulations in California in conjunction with the USEPA. The DTSC is responsible for regulating the management of hazardous substances, including remediation of sites contaminated by hazardous substances. California hazardous materials laws incorporate federal standards but are often more strict than federal laws.

Porter-Cologne Water Quality Control Act

The RWQCB is authorized by the SWRCB to enforce provisions of the Porter-Cologne Water Quality Control Act of 1969. This act gives the RWQCB authority to require groundwater investigations when the quality of groundwater or surface waters of the state are threatened and to remediate the site, if necessary.

[17] (California Department of Toxic Substances Control 2022)

[18] (State of California 2022)

State Underground Storage Tank Program

State laws also regulate Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs) containing hazardous substances. These laws are primarily found in the Health and Safety Code, and, combined with CCR Title 23, establish the requirements of the State UST program. The laws contain requirements for UST permitting, construction, installation, leak detection monitoring, repairs and corrective actions and closures. In accordance with State laws, the County Department of Health Services Environmental Health Division implements UST and AST regulations in County.

Hazardous Materials Worker Safety Requirements

The Federal Occupational Safety and Health Administration (OSHA) and the California Occupational Safety and Health Administration (Cal/OSHA) are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. The federal regulations pertaining to worker safety are contained in the Code of Federal Regulations, Title 29 (29 CFR) as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. In California, Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations; Cal/OSHA standards are generally more stringent than federal regulations.

The State regulations concerning the use of hazardous materials in the workplace are included in Title 8 of the CCR, and contain requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA also enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information relating to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites.

Local

Tulare County Environmental Health Division

In Visalia, the Tulare County Environmental Health Services Division (TCEHSD) is the local agency responsible for the implementation of the State-mandated Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (MJLHMP). County has prepared a Hazardous Materials Business Plan and the aforementioned MJLHMP, which serves as the County's emergency response plan for hazardous materials emergency incidents. In addition, the TCEHSD acts as lead agency to ensure proper remediation of leaking underground petroleum storage tank sites and certain other contaminated sites. TCEHSD provides three permanent Household Hazardous Waste drop-off facilities in the County including one in Visalia and operates mobile collection events throughout the year. These services are available free of charge to any County resident.

City of Visalia and Tulare County Fire Departments

The Visalia Fire Department (VFD) provides fire and life safety services for residents located within the city limits while the County Fire Department provides additional services for unincorporated areas of County. VFD staffs five paramedic engine companies, one truck company and a Battalion Chief daily, from six fire station locations. The engines and truck companies are staffed with three personnel, giving the VFD a daily minimum staffing of 19.[19] All stations are staffed with a paramedic at all times. The City requires all new development and subdivisions to meet or exceed California Fire Code provisions, and the City's Fire Department reviews development applications during the plan check process.

[19] (CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers 2014)

The VFD also provides oversight of hazardous materials. The VFD is responsible for conducting inspections for code compliance and fire-safe practices, and for scene management and investigation of fire and hazardous materials incidents. According to Chapter 8.32 (Hazardous Materials) of the Visalia Municipal Code, an emergency situation created by a hazardous material release which poses an imminent risk to the life, health or safety of persons, property, or to the environment shall be mitigated in the manner prescribed and pursuant to the direction of the VFD. The VFD regulates explosive and hazardous materials under the California Fire Code, and permits the handling, storage and use of any explosive or other hazardous material. The City hosts "Dump-On-Us" events four times a year for city residents to drop off residential hazardous waste. Accepted items include small appliances, cell phones, fencing material, air conditioning/ heating units, tires, scrap metal, mattresses, yard waste, and other types of waste.

Waste Disposal Regulations

The disposal of contaminated soil is regulated by the RWQCB, in this case the Central Valley Region, and is regulated based on the concentrations of chemical constituents that are present. Soils having concentrations of contaminants higher than certain acceptable levels must be handled and disposed as hazardous waste when excavated. CCR Title 22, Section 66261.20-24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste.

4.9.3 Impact Analysis

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

See section below.

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?

a and b) Less than Significant Impact. The Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Potential impacts during construction of the Project could occur from potential spillage of fuels and lubricants associated with construction equipment. These potential impacts would be temporary in nature and would be reduced to less than significant levels through compliance with applicable local, state, and federal regulations, as well as the use of Best Management Practices (BMPs). Project operations would consist of consumer grade pesticides, fertilizers, and petroleum-based fuels. However, these potentially hazardous materials would not be of a type or occur in sufficient quantities to pose a significant hazard to public health and safety or the environment. Compliance with applicable laws and regulations would minimize hazards associated with the routine transport, use, or disposal of hazardous materials to the maximum extent practicable. In addition, compliance with applicable laws and regulations would lower any potential impacts from foreseeable upset and accident conditions involving the release of hazardous materials into the environment to a less than significant level. Therefore, 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. The Project would not handle construction related hazardous materials in the form of fuels and solvents during construction of the Project within a quarter mile a school. Therefore, 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 on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, according to the Envirostor and Geotracker databases mentioned above in Section 4.9.1. As a result, the Project would not create a significant hazard to the public or environment due to the Project being located on an existing hazardous material site. Therefore, there would be no impact.

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

No Impact. The Project site is not located within an ALUCP, nor is it located within two miles of a public airport or public use airport. Therefore, there would be no impact.

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

Less than Significant Impact. The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. While construction would result in truck deliveries, hauling of materials, and construction crews, improvement plans and any work completed in existing roadways would be required to be approved by the City Engineer before they could occur. Streets within the subdivision have been designed to City specifications and have adequate site access for emergency vehicles. The Project does not generate an amount of traffic that warrants analysis of congestion. Therefore, impacts would be less than significant.

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

No Impact. The Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. As discussed more thoroughly in Section 4.20, the Project site is not located in an area that has been designated as being a State Responsibility Area (SRA) or as being a very high fire hazard severity zone. The Project site would be annexed to the City of Visalia as a part of the Project and is substantially surrounded by urban uses. Therefore, there would be no impact.

4.10 HYDROLOGY AND WATER QUALITY

Table 4-18: Hydrology and Water Quality Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially 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 off-site;	☐	☐	☒	☐
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 release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

4.10.1 Baseline Conditions

According to the website, "Best Places", the climate in Tulare County can be classified as Mediterranean with average rainfall rates of 14.9 inches annually, occurring primarily between November and March.[20] Hydrology in the Project area is associated with the Tulare Lake Hydrologic Region, containing three main subbasins. The Tulare Lake subbasin is in the northern alluvial fan and basin subarea characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey water from the Sierra Nevada to the west toward the Tulare Lake Bed. The southern portion of the basin is internally drained by

[20] (Best Places 2022)

the Kings, Kaweah, Tule, and Kern Rivers.[21] The Tulare Lake Basin comprises the drainage area of the San Joaquin Valley south of the San Joaquin River and is essentially a closed basin because surface water drains north into the San Joaquin River only in years of extreme rainfall. The Project site consists of irrigated farmland served by groundwater. The Project site is bordered by both a Tulare Irrigation District irrigation ditch and Cameron Creek.

The approximately 67.7-acre Project site is currently utilized for agricultural production. According to the 2017 Census of Agriculture, crops in California has been surveyed to use an average of 2.9 acre-feet per acre,[22] or a total of 196.33 acre-feet annually on the Project site, specifically.

The City of Visalia's water is managed by the California Water Service Visalia District. Groundwater is the sole source of water supply for the Visalia District. Groundwater used by Visalia is extracted from the underlying Kaweah and Tule Subbasins. The Project site itself is located within the Greater Kaweah Groundwater Sustainability Agency's boundary.[23]

4.10.2 Applicable Regulations

Federal

Federal Clean Water Act

The CWA, described in more detail in Appendix B: Biological Evaluation, requires the USEPA to develop, publish, and periodically update ambient water quality criteria for the protection of human health. In 1980, the USEPA published water quality criteria for 64 pollutants and pollutant classes and considered non-cancer, cancer, and taste and odor effects. Over the years, these criteria have evolved and have included additional pollutants and pollutant classes.

During the last decade, policy has shifted from a program-by-program, source-by-source, pollutant-by-pollutant approach to more watershed-based strategies. Ultimately, these criteria are used by states for establishing water quality standards under Section 303 (c) of the CWA and provide a basis for controlling discharges or releases of pollutants.

Section 401 – Water Quality Certification

CWA Section 401 requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant obtain a water quality certification (or waiver). Water quality certifications are issued by RWQCBs in California. Under CWA, the state (as implemented by the relevant board) must issue or waive CWA 401 water quality certification for the Project to be permitted under CWA 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or the placement of fill materials into waters of the United States. Construction of individual projects within the City would require CWA 401 certification for the Project if CWA 404 were triggered.

National Pollutant Discharge Elimination System Waste Discharge Regulations

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (CWA 402), as discussed in Section 4.4. The 1987 amendments to CWA created a new section of CWA devoted to stormwater permitting (CWA 402[p]). The USEPA has granted California primacy in administering and enforcing the provisions of CWA and the NPDES permit program, which is the primary federal program that regulates point-source and nonpoint-source

[21] (California Department of Water Resources. Natural Resources Agency 2015)

[22] (United States Department of Agriculture 2019)

[23] (California Department of Water Resources 2018)

discharges to waters of the United States. SWRCB issues both general and individual permits for certain activities. Relevant general and individual NPDES permits are discussed below.

Phase II MS4 Permit

The SWRCB, in response to the USEPA, issued Water Quality Order No. 2013-001-DWQ NPDES General Permit No. CAS000004, Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Systems (MS4s) in February 2013 which went into effect July 2013. The MS4 Permit requires urban municipalities with predetermined inclusion reequipments to file an application and comply with prescriptive tasks over the 5-year permit term. The prescriptive tasks include, but are not limited to, public outreach and involvement, illicit discharge detection and elimination (IDDE), construction site runoff control, post-construction storm water management, municipality facility and operation good housekeeping, water quality monitoring, and municipality assessment and reporting.

Construction Stormwater NPDES Permit

A Construction NPDES General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit (CGP), Water Quality Order No. 2009-0009-DWQ) is required for dischargers or projects who disturb one acre or more of soil or whose project disturbs less than one acre, but which is part of a larger common plan of development that in total disturbs one acre or more. This CGP was adopted in September 2009 and went into effect July 2010.

The CGP requires the development of Permit Registration Documents (PRDs) which include the development and implementation of a SWPPP. The SWPPP must contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list/describe BMPs the discharger would use to prevent polluted stormwater runoff and show the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for “non-visible” pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Attachment B of the CGP describes the elements that must be contained in a SWPPP. Additional PRD requirements are described in Attachments C-E in the CGP.

General Dewatering Permit

Small amounts of construction-related dewatering are covered under the CGP. Large amounts of dewatering, particularly over lengthy periods of time would be required to comply with the General Dewatering Permit. Project-related dewatering is likely to be limited in nature and scope and would likely be covered under the CGP. However, some projects may result in larger amounts of dewatering than covered under the CGP and a Low Threat Discharge and Dewatering Permit would need to be obtained from the Central Valley RWQCB.

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into Waters of the United States, which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents must obtain a permit from the USACE for all discharges of dredged or fill material into Waters of the United States, including wetlands, before proceeding with a proposed activity. Before any actions that may impact surface waters are carried out, a delineation of jurisdictional waters of the United States must be completed following USACE protocols (Environmental Laboratory 1987) to determine whether a particular project area encompasses wetlands or other waters of the United States that qualify for CWA protection. These include any or all of the following:

- Areas within the ordinary high-water mark of a stream, including nonperennial streams with a defined bed and bank, and any stream channel that conveys natural runoff, even if it has been realigned; or
- Seasonal and perennial wetlands, including coastal wetlands.

Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3; 40 CFR 230.3).

Under the CWA 404 permit program, general permits (known as nationwide permits) have been adopted, and coverage under nationwide permits is possible when the amount of fill is relatively small (usually less than 0.5 acre). Individual projects within the City that do not qualify for a nationwide permit must obtain an individual permit.

National Flood Insurance Program

Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains.

Federal Emergency Management Act (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues Flood Insurance Rate Maps (FIRM) for communities participating in the NFIP.

Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding to 1) avoid incompatible floodplain development; 2) be consistent with the standards and criteria of the NFIP; and 3) restore and preserve natural and beneficial floodplain values.

State

Porter-Cologne Water Quality Control Act of 1969

The Porter-Cologne Water Quality Control Act established the SWRCB and divided the state into nine regional basins, each with a RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the States surface and groundwater supplies, while the regional boards are responsible for developing and enforcing water quality objectives and implementation plans. The Project would be within the jurisdiction of Central Valley RWQCB.

The act authorizes the SWRCB to enact State policies regarding water quality in accordance with the CWA Section 303. In addition, the act authorizes the SWRCB to issue WDRs for projects that would discharge to state waters. The Porter-Cologne Water Quality Control Act requires that the SWRCB or the Central Valley RWQCB adopt water quality control plans (basin plans) for the protection of water quality. A basin plan must:

- Identify beneficial uses of water to be protected;
- Establish water quality objectives for the reasonable protection of the beneficial uses; and
- Establish a program of implementation for achieving the water quality objectives.

Basin plans also provide the technical basis for determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. Basin plans are updated and reviewed every 3 years in accordance with Article 3 of Porter-Cologne Water Quality Control Act and CWA 303(c) (Central Valley RWQCB 2004 with approved amendments).

California Regional Water Quality Control Board, Central Valley Region – Basin Plan

Water quality in streams and aquifers of the region is guided and regulated by the Central Valley RWQCB Tulare Lake Basin Plan.[24] State policy for water quality control is directed at achieving the highest water quality consistent with the maximum benefit to the people of the state. To develop water quality standards consistent with the uses of a water body, the Central Valley RWQCB classifies historical, present, and potential future beneficial uses as part of its basin plan. The Central Valley RWQCB Basin Plan identifies the beneficial uses of the Tulare Lake basin.

Although the Cameron Creek is not specifically listed on the Tulare Lake Basin Plan, the Valley Floor Creeks are listed for agriculture, industrial, process water, recreation, warm water habitat, wild habitat, rare species habitat, and groundwater recharge. A detailed discussion of beneficial uses and water quality objectives can be found in the Basin Plan.

The Central Valley RWQCB Basin Plan has also established the water quality objectives for dissolved oxygen in various habitats. The objective for warm water beneficial use habitats is 5mg/L minimum; and for cold water habitats is 7mg/L minimum.[25]

The Central Valley RWQCB Basin Plan also states that turbidity shall not be increased by more than 1 Nephelometric Turbidity Unit (NTU) when ambient turbidity is between 0 and 5 NTU. Turbidity shall not be increased by more than 20 percent when ambient turbidity is between 5 and 50 NTU. Finally, when ambient turbidity is greater than 100 NTU, turbidity shall not be increased by more than 10 percent.[26]

Sustainable Groundwater Management Act

In September 2014, the California Legislature enacted a three-bill law (AB 1739, SB 1168, and SB 1319), known as the Sustainable Groundwater Management Act (SGMA). SGMA was created to provide a framework for the sustainable management of groundwater supplies and intended to empower local agencies to adopt groundwater management plans that are tailored to the resources and needs of their communities, such that sustainable management would provide a buffer against drought and climate change, and ensure reliable water supplies regardless of weather patterns. SGMA is considered part of the statewide, comprehensive California Water Action Plan that includes water conservation, water recycling, expanded water storage, safe drinking water, and wetlands and watershed restoration. It protects existing surface water and groundwater rights and does not affect current drought response measures.[27]

SGMA requires that local agencies form a local groundwater sustainability agency within 2 years (i.e., by 2017). This process is not subject to LAFCo purview. Agencies located within high- or medium-priority basins must adopt groundwater sustainability plans within 5 to 7 years. The time frame for basins determined by DWR to be in a condition of "critical overdraft" is 5 years (i.e., by 2020). Local agencies would have 20 years to fully implement groundwater sustainability plans after the plans have been adopted. Intervention by the SWRCB would occur if a groundwater sustainability agency is not formed by the local agencies, and/or if a groundwater sustainability plan is not adopted or implemented. [28]

[24] (California Water Boards 2022)
[25] (California Regional Water Quality Control Board Central Valley Region 2018)
[26] Ibid.
[27] (California Department of Water Resources 2023)
[28] (California Department of Water Resources 2023)

Streambed Alteration Agreement

The CDFW regulates streambed alterations in accordance with the California Fish and Game Code 1601–1616: Lake or Streambed Alteration Agreements. Whenever a project proposes to alter a streambed, channel, or bank, an agreement with CDFW is required. The agreement is a legally binding document that describes measures agreed to by both parties to reduce risks to fish and wildlife in the stream system during the project. This is a separate process from CEQA approval but is usually coordinated with CEQA compliance. Agreements typically have fewer procedural and legal requirements than CEQA in order to work with small-scale projects that are important to fish. Timeframes for agreements are 30 days for CDFW to determine the completeness of an application and an additional 60 days to provide a draft agreement to the applicant.

Local

Phase II MS4 Permit

The Municipal Storm Water Permitting Program established under NPDES regulates storm water discharges from MS4s. In the first phase, the SWRCB issued permits to medium and large municipalities, typically grouped as co-permittees in a metropolitan region. In the second phase, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s. In 2013, SWRCB, in response to the USEPA, issued Water Quality Order No. 2013-001-DWQ NPDES General Permit No. CAS000004, Waste Discharge Requirements for Storm Water Discharges from Small MS4s in February 2013, which went into effect July 2013. The MS4 Permit requires urban municipalities with predetermined inclusion reequipments to file an application and comply with prescriptive tasks over the 5-year permit term. The prescriptive tasks include, but are not limited to, public outreach and involvement, IDDE, construction site runoff control, post-construction storm water management, municipality facility and operation good housekeeping, water quality monitoring, and municipality assessment and reporting.

The City applied with the SWRCB under the Phase II MS4 Permit in July 2013, covering the City itself, and the Storm Water Management Program for County, which covers all unincorporated parts of the County, including the Project site. The City, under previous permit issuances, developed and adopted Stormwater Management Plans in 2005 and 2008, respectively.

Visalia Urban Water Management Plan

California Water Service Company[29] Visalia District 2020 UWMP evaluates water demand and potential supply based on projected population and urban area growth. Water Code Section 10644(a) requires urban water suppliers to file UWMPs with the DWR, the California State Library, and any city or county within which the supplier provides water supplies. The UWMP describes the water system, system demands, system supplies, water supply reliability and water shortage contingency planning, and demand management measures.

City of Visalia General Plan

- Objective OSC-O-6: Protect water resources vital to the health of the community residents and important to the Planning Area's ecological and economic stability.

- Objective OSC-O-7: Preserve and enhance Planning Area waterways and adjacent corridors as valuable community resources which serve as plant and wildlife habitats, as groundwater recharge facilities, as flood control and irrigation components, and as connections between open space areas.

[29] California Water Service Company is an investor-owned corporate purveyor of water to the City of Visalia.

- Objective OSC-O-8: Continue to participate in a waterway program involving the Tulare Irrigation District, irrigation companies, private water companies and state agencies.

- Policy OSC-P-18: Establish a liability agreement between the City, Tulare Irrigation District, water conservation districts and ditch companies related to public access and trail use and riparian corridor enhancement programs.

City of Visalia Municipal Code: Flood Plain Management Ordinance Chapter 15.60

Chapter 15.60, "Flood Plain Management Ordinance," of the City of Visalia Municipal Code is intended to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- Protect human life and health;
- Minimize expenditure of public money for costly flood control projects;
- Minimize the need for rescue and relief efforts associated with flooding events and generally undertaken at the expense of the general public;
- Minimize prolonged business interruptions;
- Minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; and streets and bridges located in special flood hazard areas;
- Help maintain a stable tax base by providing for the sound use and development of special flood hazard areas so as to minimize future blighted areas caused by flood damage;
- Ensure that potential buyers are notified that property is located in a special flood hazard area; and
- Ensure that those who occupy properties located in special flood hazard areas assume responsibility for their actions.

Methods to reduce flood losses through this chapter involve regulations pertaining to the following:

- Restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards;
- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Control the alteration of natural floodplains, stream channels and natural protective barriers, which help accommodate or channel floodwaters;
- Control filling, grading, dredging, and other development which may increase flood damage; and
- Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

4.10.3 Impact Analysis

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. Surface runoff from the subdivision and the surrounding developments would be accommodated by the proposed ponding basin park on the eastern edge of the Project site. The basin is sized in accordance with lot coverage and runoff coefficients, and therefore, impacts would be less than significant. Runoff generated as a result of the increase permeability of the Project site would be accommodated by the proposed park basin. Connection to City facilities would not violate any waste discharge requirements. Water quality for domestic/potable use is controlled by the City itself pursuant to State water quality regulations. It is not anticipated that the Project would degrade either surface- or ground-water quality. In addition, the Project would be required to complete and comply with a SWPPP prior to and during construction of the subdivision. Thus, the Project would have a less than significant impact.

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

Less than Significant Impact. Cal Water delivers local groundwater and operates 59 wells across the Visalia service area, which would include the Project site once annexed into the City. According to the Visalia District 2020 Urban Water Management Plan (UWMP), in 2020, the total system demand was 30,152 af.[30]. In 2020, single family uses used 19,359 af, which accounted for 64 percent of the total water used.

The UWMP projected water demands for potable and non-potable water. Projected water demand from 2025 through 2045 are shown in Table 4-19.

Table 4-19: Use for Potable and Non-Potable Water – Projected

Use for Potable and Non-Potable Water – Projected						
Use Type	Additional Description (*as needed*)	Projected Water Use (AF)				
		2025	2030	2035	2040	2045
Single Family		20,815	22,593	24,604	26,513	28,705
Multi-Family		1,583	1,686	1,815	1,945	2,070
Commercial		5,634	6,009	6,448	6,891	7,364
Institutional/Governmental		2,854	3,152	3,483	3,819	4,164
Industrial		308	308	308	308	308
Other Potable		223	223	223	223	223
Landscape	(b)	0	0	0	0	0
Losses	(c)	1,102	1,304	1,429	1,559	1,695
	Total	**32,520**	**35,276**	**38,310**	**41,258**	**44,529**

NOTES:
(a) District's billing system does not track this use type separate from other use types
(b) Real and apparent losses

The Project consists of 273 dwelling units and the average household size in Visalia is 2.99; therefore, the Project would house approximately 816 people.[31] According to the UWMP, the amount of groundwater pumped during the year 2020 was 30,152-acre feet or 26.9 million gallons per day.

The proposed 273-lot subdivision would be expected to use approximately 178,704 gallons of water per day (816 people x 219 gallons/day) under normal operation, including domestic and landscape irrigation.

[30] (California Water Service 2021)
[31] (United States Census Bureau 2020)

This equates to approximately 200.17-acre feet per year. Therefore, given existing conditions, water consumption would increase by 4 acre-feet per year. Although the Project would utilize groundwater for domestic purposes, the amount of water used is not considered significant and would not significantly lower the groundwater table of the aquifer or interfere substantially with the recharge of the underground aquifer.

The Project would pay its fair share of installation of improvements and pay all development fees related to water service. Therefore, impacts would 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;

See section iv.

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

See section iv.

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

See section iv.

iv. impede or redirect flood flows?

c i-iv) Less than Significant Impact. The Project would result in some soil erosion and the loss of topsoil due to Project related construction activities. The drainage pattern of the new subdivision would be altered to flow to the proposed park basin that would be constructed as a part of the Project. Through the completion of a SWPPP and the implementation of the applicable best management practices, any potential impacts from the altering of drainage patterns would be limited to less than significant.

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

Less than Significant Impact. Cameron Creek and a Tulare Irrigation District ditch run along the easternmost and westernmost portions of the Project site, respectively. Furthermore, the eastern half of the Project is located in a 100-year floodplain (see

Figure 4-3), and thus the Project would be required to elevate the proposed structures to be located one foot above the flood elevation. In order to minimize erosion and run-off during construction activities, a SWPPP would be implemented, and the contractor would comply with all Cal/OSHA regulations regarding regular maintenance and inspection of equipment, spill prevention, and spill remediation in order to reduce the potential for incidental release of pollutants or hazardous substances onsite. While the Project would be located within a 100-year flood zone, the measures listed above would diminish any potential impacts to a less than significant level.

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 site is located within the Greater Kaweah Groundwater Sustainability Agency's boundary, whose Groundwater Sustainability Plan (GSP) was adopted in January 2020. As the Project would not result in a significant decrease in groundwater compared to baseline conditions, and would follow the policies of the GSP, the Project would not conflict with or obstruct implementation of the GSP. Impacts would be less than significant impact.

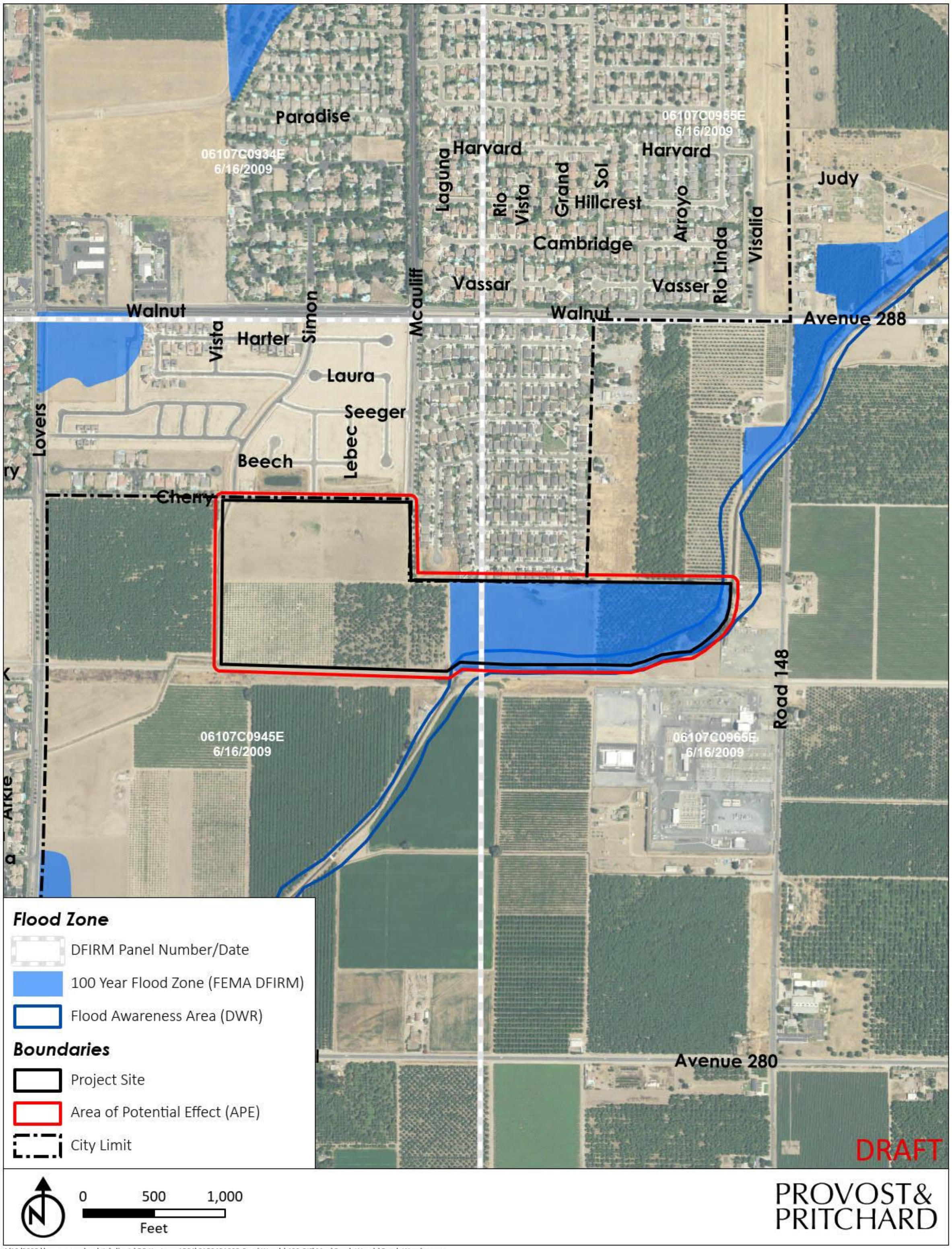

Figure 4-3: FEMA Flood Map

4.11 LAND USE AND PLANNING

Table 4-20: Land Use and Planning Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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?	☐	☐	☐	☒

4.11.1 Baseline Conditions

The Project site currently consists of orchards. The Project site is surrounded by a subdivision to the north, agricultural land to the west and east, and a Southern California Edison substation to the south. The City of Visalia General Plan Update land use diagram designates the Project site as Low Density Residential. The Project site is currently zoned AE-20 (Exclusive Agricultural, 20-acre minimum parcel size) by the County of Tulare and prezoned by the City as R-1-5. General Plan land use designations and Zone Districts of the

Project site and surrounding areas are illustrated in

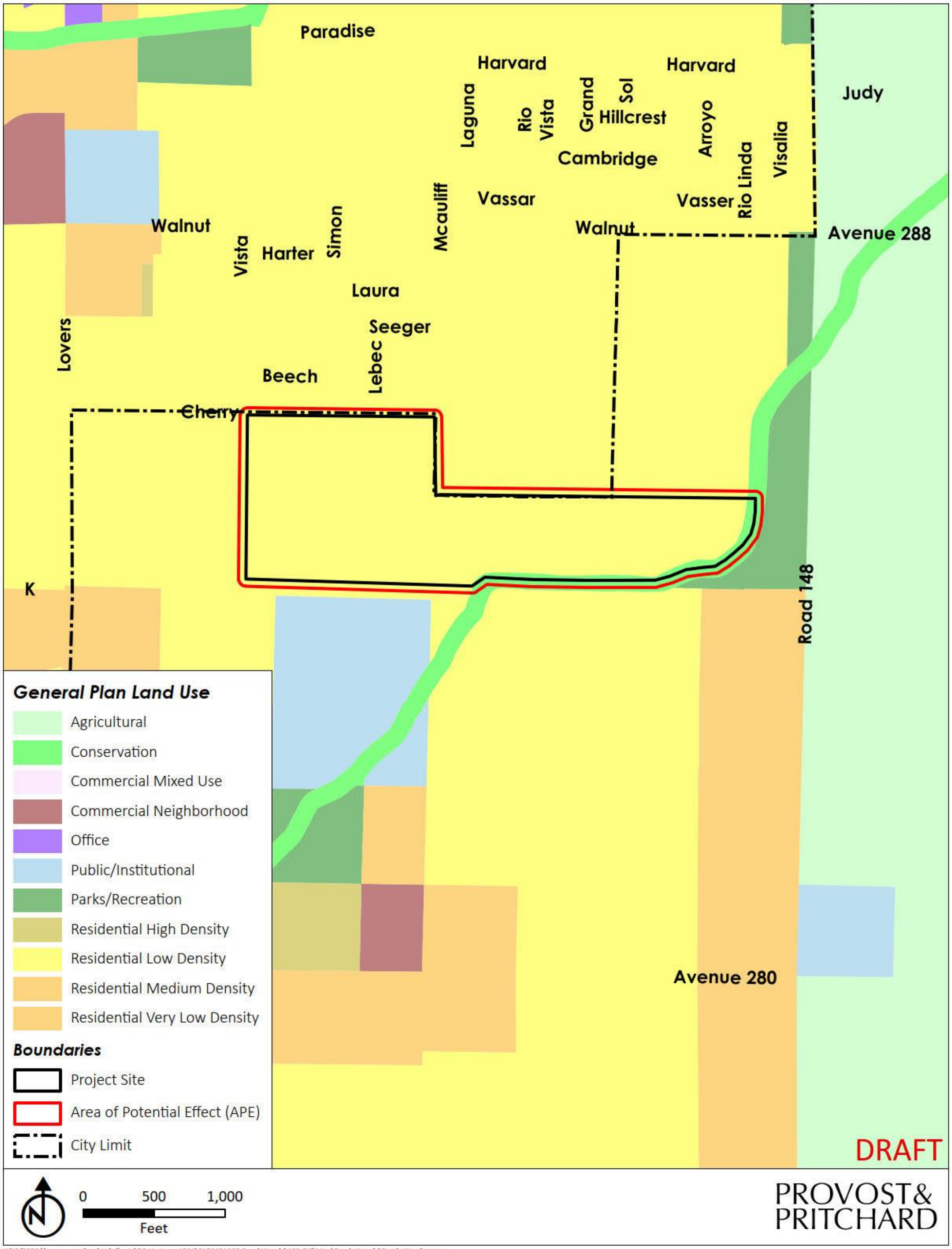

Figure 2-4 and

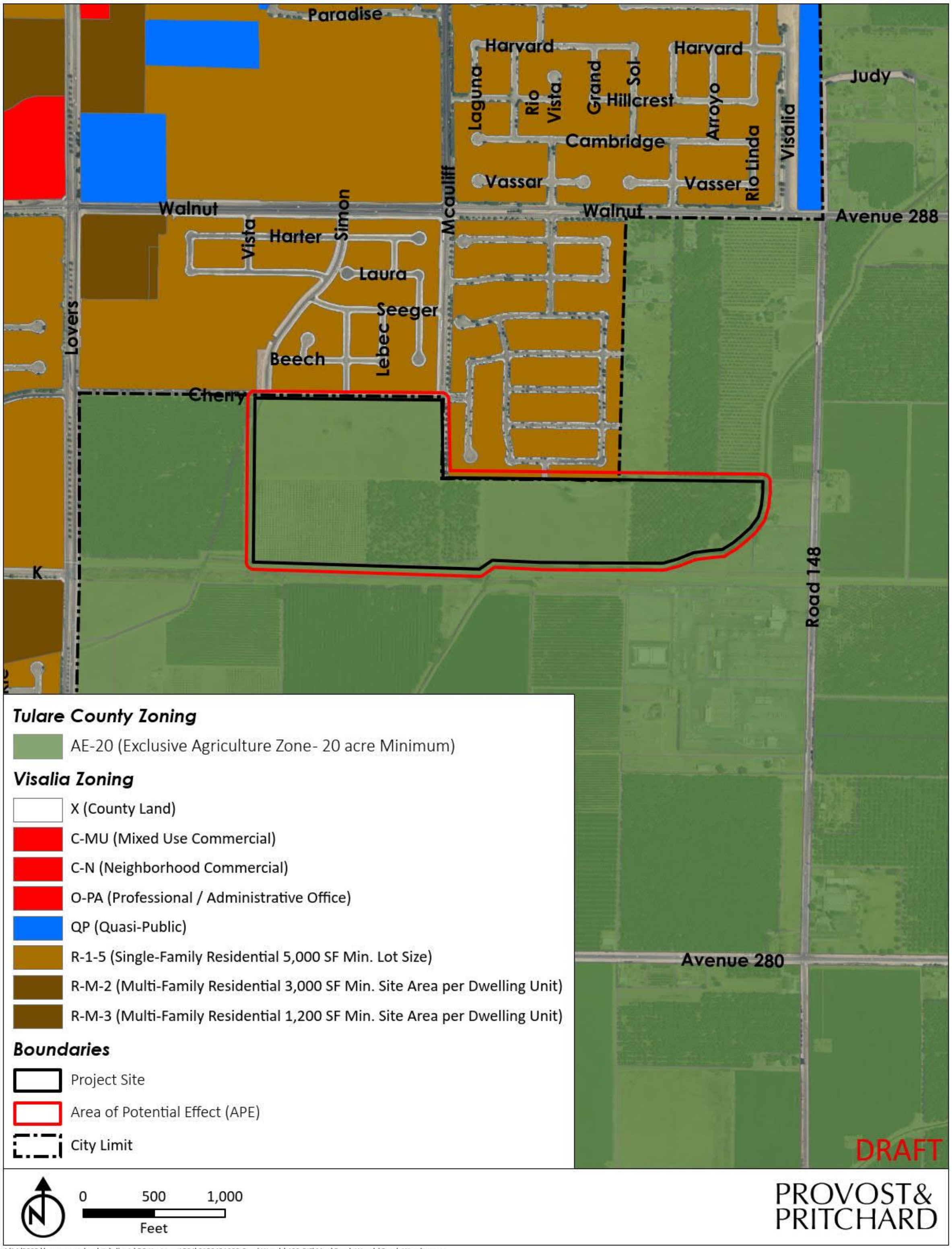

Figure 2-5.

4.11.2 Applicable Regulations

Federal

There are no federal regulations, plans, programs, or guidelines associated with land use that are applicable to the Project.

State

Regional Housing Needs Plan

California General Plan law requires each city and county to have land zoned to accommodate a fair share of the regional housing need. (Government Code section 65584, et seq.) The share is known as a regional housing needs assessment or RHNA and is based on a regional housing needs plan or RHNP developed by each council of government. The state-mandated RHNA process (Government Code Sections 65580 et seq.) requires Tulare COG to develop a methodology that determines how to divide and distribute an overall allocation that the region receives from the State. Currently there are no RHNA assignments associated with the Project site.

Local

City of Visalia General Plan

- Objective LU-O-7: Preserve and enhance qualities that make Visalia an ideal place to do business and promote a positive image of Visalia as a desirable place to live, visit, and do business.
- Objective LU-O-16: Create a safe, walkable and attractive urban environment for current and future generations of residents.
- Objective LU-O-23: Provide a range of housing types and prices within new neighborhoods to meet the needs of all segments of the community.
- Objective LU-O-25: Create an open space system that links neighborhoods, complements adjacent land uses and serves multiple needs.
- Policy LU-P-21: Allow annexation and development of residential […] land to occur within the Urban Development Boundary (Tier II) […] consistent with the City's Land Use Diagram, according to the following phasing thresholds:
    - "Tier II": Tier II supports a target buildout population of approximately 178,000. The expansion criteria for land in Tier II is that land would only become available for development when building permits have been issued in Tier I at the following levels, starting from April 1, 2010:
        - Residential: after permits for 5,850 housing units have been issued.
- Policy LU-P-29: Use regional and community parks and open space to enhance gateways to the City and as a buffer between adjacent communities.
- Policy LU-P-37: Adopt specific development standards for scenic entryways (gateways) and roadway corridors into the City, including special setback and landscape standards, open space and park development, and/or land use designations.
- Policy LU-P-41: Use Mill, Packwood and Cameron Creeks and other waterways as natural amenities and links between neighborhoods.

- Policy LU-P-43: Work with utilities and transportation companies to landscape power line and railroad right-of-ways throughout the community and to underground utilities where possible.
- Policy LU-P-44: Develop land use and site design measures for areas adjacent to high voltage power facilities. Measures will include landscape buffers and mandatory setbacks from substations and transmission towers and lines.
- Policy LU-P-48: Establish criteria and standards of pedestrian, bicycle and vehicle circulation networks within new subdivisions and non-residential development.
- Policy LU-P-51: Provide development standards to ensure residential development is not negatively affected by adjacent non-residential land uses.
- Objective OSC-O-7: Preserve and enhance Planning Area waterways and adjacent corridors as valuable community resources which serve as plant and wildlife habitats, as groundwater recharge facilities, as flood control and irrigation components, and as connections between open spaces.
- Policy OSC-P-8: Protect, restore, and enhance a continuous corridor of native riparian vegetation along Planning Area waterways, including the St. John's River; Mill, Packwood, and Cameron Creeks; and segments of other creeks and ditches where feasible, in conformance with the Parks and Open Space diagram of this General Plan.

  Waterway corridors provide irrigation water for agriculture, recreational opportunities, habitat, and storm drainage. They will provide new links between neighborhoods, parks, and Downtown, and provide a new way of experiencing the City and understanding its natural setting.

- Policy OSC-P-14: Establish design and development standards for new development in waterway corridors to preserve and enhance irrigation capabilities, if provided, and the natural riparian environment along these corridors. In certain locations or where conditions require it, alternative designs such as terraced seating or a planted wall system may be appropriate.

  As part of Plan implementation, examples of waterway bank treatments should be developed to facilitate adoption of these standards.

- Policy OSC-P-17: Require that new development along waterways maintain a visual orientation and active interface with waterways. Develop design guidelines to be used for review and approval of subdivision and development proposals to illustrate how this can be accomplished for different land uses in various geographic settings.
- Policy OSC-P-23: Where no urban development exists, maintain a minimum riparian habitat development setback from the discernible top of the bank – 50 feet for both sides of the Mill, Packwood and Cameron Creek corridors and 25 feet for both sides of Modoc, Persian and Mill Creek Ditches – provided that where riparian trees are located within 100 feet of the discernible top of the banks of the Creek corridors and 50 from the banks of the ditches, the setback shall be wide enough to include five feet outside the drip line of such trees. Restore and enhance the area within the setback with native vegetation.
  - Where existing development or land committed to development prohibits the 50 foot setback on Mill, Packwood and Cameron Creek corridors, provide the maximum amount of land available for a development setback.

- Where existing development or land committed to development prohibits the 25 foot setback along Modoc, Persian, and Mill Creek Ditches, provide the maximum amount of land available for a development setback.

  An exception to these setback requirements also may be allowed to permit piping of the ditch where necessary to meet City standards, and where no riparian trees will be lost.

City of Visalia Municipal Code

The intent of the QP zone is to allow for the location of institutional, academic, community service, governmental, and nonprofit uses. According to Municipal Code section 17.52.020, "Permitted uses in this zone include public uses of an administrative, recreational, public service or cultural type including city, county, state or federal administrative centers and courts, libraries, museums, art galleries, police and fire stations and other public building, structures and facilities; public playgrounds, parks and community centers."[32] The R-1-5 zone is to provide living area within the city where development is limited to low density concentrations of one-family dwellings where regulations are designed to accomplish the following: to promote and encourage a suitable environment for family life; to provide space for community facilities needed to compliment urban residential areas and for institutions that require a residential environment; to minimize traffic congestion and to avoid an overload of utilities designed to service only low density residential use. Permitted uses in this zone district include single-family dwellings.

Waterways and Trails Master Plan

The Waterways and Trails Master Plan, outlines goals, policies, design standards, and implementation strategies for the development of a multi-purpose trail system along Visalia's primary community waterways. The trail systems would link neighborhoods, parks, schools, Downtown, and other activity centers. The plan focuses on developing trails along three waterways: Packwood Creek, Mill Creek, and Cameron Creek. The Master Plan also identifies that the Class I trail that would run along Mill Creek and connect to the proposed Class I trail running north/south along the power line easement, west of the Project site.[33] These trails are designed to link with the City's existing trail system along the St. Johns River and the bike network. Mill Creek is proposed to be fully daylighted through Downtown. Ultimately, the completed system would form a "ring recreational trail" around the City's periphery, several cross-town routes along waterways and other primary corridors, and a major north/south route along Santa Fe Avenue. Along each waterway, a preferred trail alignment is identified, and recommendations and policies are made for landscaping improvements and habitat restoration within the waterway setback.[34]

4.11.3 Impact Analysis

a) Would the project physically divide an established community?

Less than Significant Impact. The Project involves the development of 273 single-family residential lots in southeast Visalia. The Project area is classified by the City's General Plan as Low Density Residential and as AE-20 by the County of Tulare's Zoning Ordinance. The Project site will be annexed into the City and zoned R-1-5 (Single family Residential, 5,000 square foot minimum). The Project will create a new residential subdivision which is consistent with the city's current General Plan land use designation. The site is currently an agricultural orchard located adjacent to an existing residential subdivision. Development of the site will reduce vehicular obstructions by creating new roads and sidewalks.

[32] (American Legal Publishing 2023)
[33] (RRM Design Group 2010)
[34] (CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers 2014)

Implementation of the Project would provide additional housing and an expansion of services. Therefore, the Project would not physically divide an established community and would have less than significant impact.

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

No Impact. The Project proposes to construct 273 single family low density units within the a 67.5-acre Project site. As illustrated in Figure 2-4 and Figure 2-5, the City of Visalia General Plan land use diagram designates the Project site as Low Density Residential, and the County of Tulare Zoning Ordinance designates the Project site as AE-20. The Project proposes to annex the site into the City and prezone the site into the R-1-5 (Single Family Low Density Residential) Zone District and QP for the public park and regional basin area. Therefore, the Project would not cause a significant environmental conflict with any land use plan, policy, or regulation since it would be consistent with land use designation standards. Therefore, there would be no impact.

4.12 MINERAL RESOURCES

Table 4-21: Mineral Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

4.12.1 Baseline Conditions

Visalia is part of the Central Valley region, one of several geomorphic provinces in California. The most economically significant mineral resources in Tulare County are sand, gravel, and crushed stone, used as sources for aggregate (road materials and other construction). The two major sources of aggregate are alluvial deposits (riverbeds, and floodplains), and hard rock quarries. Consequently, most Tulare County mines are located along rivers at the base of the Sierra foothills. Surface mining in California is regulated through the Surface Mining and Reclamation Act (SMARA), a State law adopted in 1975 to address the dual goals of protecting the state's need for a continuing supply of mineral resources, while protecting public and environmental health. SMARA requires that all cities incorporate into their general plans mapped mineral resource designations approved by the State Mining and Geology Board. The Visalia Planning Area contains three former sand and gravel mines, but no currently operating mines and no designated Mineral Resource Zones.[35]

4.12.2 Applicable Regulations

Federal

There are no federal regulations, plans, programs, and guidelines associated with mineral resources that are applicable to the Project.

State

California Surface Mining and Reclamation Act of 1975

Enacted by the State Legislature in 1975, the Surface Mining and Reclamation Act (SMARA), Public Resources Code Section 2710, et seq., ensures a continuing supply of mineral resources for California. The Act creates surface mining and reclamation policy to ensure that:

- Production and conservation of minerals is encouraged;
- Environmental effects are prevented or minimized;

[35] (CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers 2014)

- Consideration is given to recreational activities, watersheds, wildlife, range and forage, and aesthetic enjoyment;
- Mined lands are reclaimed to a useable condition once mining is completed; and
- Hazards to public safety both now and in the future are eliminated.

Areas in the State (i.e., a city or county) that do not have their own regulations for mining and reclamation activities rely on the Department of Conservation Division of Mine Reclamation to enforce this law. SMARA contains provisions for the inventory of mineral lands in the State of California. The State Geologist, in accordance with the SWRCB Guidelines for Classification and Designation of Mineral Lands, must classify Mineral Resource Zones as designated below:

- MRZ-1. Areas where available geologic information indicates that there is minimal likelihood of significant resources.
- MRZ-2. Areas underlain by mineral deposits where geologic data indicate that significant mineral deposits are located or likely to be located.
    - MRZ-2a. Areas containing mineral deposits that have geologic data to confirm that significant measured or indicated resources are present.
    - MRZ-2b. Areas containing mineral deposits where geologic information indicates that inferred resources are present.
- MRZ-3. Areas where mineral deposits are found but the significance of the deposits cannot be evaluated without further exploration.
    - MRZ-3a. Areas considered having a moderate potential for mineral deposits of economic value.
    - MRZ-3b. Areas that include inferred mineral deposits that could possibly qualify as mineral resources.
- MRZ-4. Areas where there is not enough information to assess the zone. These are areas that have unknown mineral resource significance.

SMARA only covers mining activities that impact or disturb the surface of the land. Deep mining (tunnel) or petroleum and gas production is not covered by SMARA.

Local

There are no local regulations, plans, programs, and guidelines associated with mineral resources that are applicable to the Project.

4.12.3 Impact Analysis

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. According to the City of Visalia General Plan Update Draft Environmental Impact Report, the City of Visalia Planning Area, including the Project site, does not contain land designated as mineral resource zone. Also, there are no active mining operations, therefore there would be 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 land use plan?

No Impact. As discussed above, there are no active mining operations or lands designated as a mineral resource zone in the City of Visalia's Planning Area, therefore the Project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. There would be no impact.

4.13 NOISE

Table 4-22: Noise Impacts

Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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 ground borne 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 a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

4.13.1 Baseline Conditions

The Project site is located in an area that has historically been used for agricultural purposes, substantially surrounded by agriculture uses almost all around with the exception of single family residences north of the project site. In addition, there are no schools within one mile radius of the project site, the closest school is Annie R. Mitchell (1.03 miles northwest) located nearby. The nearest major intersection to the Project site is South McAuliff Street and East Walnut Avenue. East Walnut Avenue and South McAuliff Street are designated Arterial and Collector by the City of Visalia General Plan Circulation Element, respectively. The San Joaquin Valley Railroad maintains a rail line immediately south of the Project site, which sees approximately two trains per day. The Project site is within proximity of two railroad crossings, and is not located in an FRA Quiet Zone.

4.13.2 Applicable Regulations

State

State of California General Plan Guidelines

The State of California General Plan Guidelines (OPR 2003) identify guidelines for the noise elements of local GPs, including a sound level/land use compatibility chart that categorizes, by land use, outdoor Ldn ranges in up to four categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable). For many land uses, the chart shows overlapping Ldn ranges for two or more compatibility categories. The noise element guideline chart identifies the normally acceptable range of Ldn values for low-density residential uses as less than 60 dB and the conditionally acceptable range as 55–70 dB. The normally acceptable range for high-density residential uses is identified as Ldn values below 65 dB, and the conditionally acceptable range is identified as 60–70 dB. For educational and medical facilities, Ldn values below 70 dB are considered normally acceptable, and Ldn values of 60–70 dB is considered conditionally acceptable. For office and commercial land uses, Ldn values below 70 dB are considered normally acceptable, and Ldn values of 67.5–77.5 are categorized as conditionally acceptable. When noise levels are in the conditionally acceptable range new construction should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation requirements are included in the design. These overlapping Ldn ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations.

Local

City of Visalia General Plan

The current Noise Element of the City's GP establishes goals and policies intended to limit community exposure to excessive noise levels. Visalia's current GP identifies noise sources such as roadways, rails, and airports within the city and includes land use compatibility guidelines.

Noise Ordinance

Chapter 8.36 of the City's Municipal Code contains the City's noise ordinance, which establishes exterior and interior noise level standards. Exterior and interior noise levels may not exceed any of the categorical noise level standards shown in Table 4-23:

Table 4-23: City of Visalia - Noise Level Standards

City of Visalia's Noise Level Standards			
Categories	Cumulative number of minutes in any one-hour time period	Evening and daytime (6:00 a.m. to 7:00 p.m.)	Nighttime (7:00 p.m. to 6:00 a.m.)
Exterior Levels			
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65
Interior Levels			
1	5	45	35
2	1	50	40
3	0	55	45

4.13.3 Impact Analysis

a) Would the project result in generation of a substantial temporary or permanent increase in ambient 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. The construction for the Project will create a temporary increase in ambient noise levels in the vicinity of the Project in excess of the standards established in the local general plan, noise ordinance, or applicable standards of other agencies for approximately 21 months. The construction required for the completion of this Project would temporarily increase noise levels above what is allowed by the City's Noise Ordinance (**Table 4-23**); however, construction related activities are allowed between 6 am – 7 pm during the week and between 9 am – 7 pm on the weekends. Construction related noise would be temporary and would cease upon completion of the Project. The Project site is currently has varying levels of noise due to historical agricultural equipment use and daily train noise. In addition, according to the inverse square law, noise diminishes from its source by six dBA with each doubling of distance from origin. As a result, any noise generated from the Project site would have a diminished effect when heard from people in the surrounding area. Therefore, impacts would be less than significant.

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

Less than Significant Impact. Construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. Construction and agricultural activities can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures, and soil type. The generation of vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Ground-borne vibration or ground-borne noise levels from construction would be temporary in nature. In addition, vibration levels subside with increased distance from the source, diminishing the effect the Project would have. Therefore, impacts would be less than significant.

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

No Impact. The Project is not located in the vicinity of a private airstrip or within an airport land use plan. The nearest airport or airstrip to the Project site Visalia Municipal Airport approximately 9.8 miles southwest of the Project site. Therefore, there would be no impact.

4.14 POPULATION AND HOUSING

Table 4-24: Population and Housing Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for Sample, by proposing 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?	☐	☐	☐	☒

4.14.1 Baseline Conditions

The Project site is located on approximately 67.7 acres of land to the southeast of the City of Visalia that would be annexed into the City as a part of the Project. Land being annexed into the City is currently zoned for agricultural use (AE-20). According to the United States Census Bureau, the City of Visalia had a population of 141,384 people in 2020. The Census Bureau estimated that in 2020 the City had a rate of 2.99 people per household. [36] The General Plan planned land use designation for the Project site is Low Density Residential, which permits residential land uses between two and ten dwelling units per acre. The area abutting Cameron Creek is designated as Conservation and is planned for a Class 1 trail.

4.14.2 Applicable Regulations

There are no federal, State, or local regulations, plans, programs, and guidelines associated with population or housing that are applicable to the Project.

4.14.3 Impact Analysis

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

Less than Significant Impact. The Project would not create a substantial increase in population in the area, either directly or indirectly. The Project would result in the construction of 273 houses within land that would be annexed into the City as a part of the Project. At 2.99 residents per household, the Project could potentially add 816 new people to the City's population. The portion of the Project site that would contain the new 273 homes is designated for Low Density Residential use by the City of Visalia General Plan. Cameron Creek runs through the Project parcel to the southeast. East of the proposed subdivision and north of Cameron Creek a new ponding basin and park would be constructed as a part of the Project.

[36] (United States Census Bureau 2022)

Land to the south and east of Cameron Creek would not be altered by the Project. While the Project will result in population growth through the construction of 273 homes, the new development is consistent with the City's General Plan Land Use designation of low density residential as the proposed density is 4.04 dwelling units per acre. 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 Impact. The Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. The Project would result in the construction of 273 homes on land that would be annexed into the City of Visalia. Land being annexed into the City as a part of the project has historically been used for agricultural and has not been previously developed. No existing housing exists or would be demolished to facilitate the Project. Therefore, there would be no impact.

4.15 PUBLIC SERVICES

Table 4-25: Public Services

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

4.15.1 Baseline Conditions

The Project site is located around the southwest corner of South McAuliff Street and East Cherry Avenue, in Visalia's southeast quadrant. It is approximately 67.5 acres of vacant property. The Project site is served by City of Visalia, Fire Station 56, Visalia Unified School District, and the City of Visalia Police Department.

Fire Protection: The City of Visalia, Fire Station 56, located 0.7 miles north of the Project site provides fire suppression and prevention, emergency and non-emergency medical services.

Police Protection: The City of Visalia Police Department, located 3.1 miles northwest of the Project site, provides 24-hour policing services within the city limits.

Schools: The Visalia Unified School District (VUSD) serves the project site. Annie R. Mitchell Elementary School is located approximately one mile west of the Project.

Parks: The City has 23 neighborhood parks located throughout the city. Kiwanis Park is the closest park to the Project site located one mile north of the Project. The park includes picnic tables, a playground, a basketball court, a skate element, and an open play area.

4.15.2 Applicable Regulations

State

State Open Space Standards

State planning law (Government Code Section 65560) provides a structure for the preservation of open space by requiring every city and county in the state to prepare, adopt, and submit to the Secretary of Resources Agency a "local open-space plan for the comprehensive and long-range preservation and conservation of open-space land within its jurisdiction." This is commonly achieved by incorporating an "Open Space" Element as part of the City and County long range GPs. The following open space categories are identified by the State for preservation:

- Open space for public health and safety, including, but not limited to, areas that require special management or regulation due to hazardous or special conditions.
- Open space for the preservation of natural resources, including, but not limited to, natural vegetation, fish and wildlife, and water resources.
- Open space for resource management and production, including, but not limited to, agricultural and mineral resources, forests, rangeland, and areas required for the recharge of groundwater basins.
- Open space for outdoor recreation, including, but not limited to, parks and recreational facilities, areas that serve as links between major recreation and open space reservations (such as trails, easements, and scenic roadways), and areas of outstanding scenic and cultural value.
- Open space for the protection of Native American sites, including, but not limited to, places, features, and objects of historical, cultural, or sacred significance such as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property (further defined in California Public Resources Code Sections 5097.9 and 5097.993).

Local

City of Visalia General Plan: Parks, Schools, Community Facilities, and Utilities

The Parks, Schools, Community Facilities, and Utilities Element of the City's GP was last comprehensively updated in 2014. Regarding parks and recreation, the element presents City's policies and programs for the development and maintenance of parks, schools, and other fundamental building blocks for new neighborhoods to be built over the next two decades. The Element objectives and goals pertaining to public services are as follows:

Fire:

- Policy S-O-4: Protect Visalia's residents and businesses from potential fire hazards.
- Policy S-P-22: Manage vegetation in areas within and adjacent to public rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas.
- Policy S-P-27: Implement a fuel modification program, which also includes residential maintenance requirements and enforcement, plan submittal and approval process, guidelines for planting, and a listing of undesirable plant species. Require builders and developers to submit their plans, complete with proposed fuel modification zones, to the Fire Department for review and approval prior to beginning construction.
- Policy S-P-29: Ensure availability of adequate water supplies to meet public health and safety needs, and for resource protection, by maintaining the following order of priority for water use:

  • Potable water supply, fire protection, and domestic use

  • Resource protection and preservation

  • Industrial, irrigation and commercial uses

• Water-oriented or water-enhanced recreation

• Air conditioning.

- Policy S-P-32: Continue to make available fire alarm systems, as referred in to in this Element, to be tied directly and automatically to the Visalia City Fire Chief's alarm-receiving center.

- Policy S-P-41: Periodically conduct joint training exercises with the County, State, and federal agencies and others to with the goal of developing the best possible coordinated action in fire suppression and crowd control.

Police:

- Objective S-O-5: Provide a comprehensive program of safety services including police, fire and medical response in all parts of the Visalia Planning Area.
- Policy S-P-30: Integrate the Tulare County Hazard Mitigation Plan, in particular the hazard analysis and mitigation strategy sections, into the development review process, the emergency operations plan, and capital improvement program, as appropriate.
- Policy PSCU-P-28: Investigate opportunities to locate emergency services substations (police, fire, etc.) adjacent to park sites.

Schools:

- Objective PSCU-O-8 Place elementary schools at the core of neighborhoods and co-locate schools with parks and neighborhood commercial areas.
- Objective PSCU-O-9: Coordinate the location of school sites in the community with the school district in an effort to assist the School District in providing school facilities at the optimum location and in a timely manner.
- Policy PSCU-P-34: Coordinate land use and development with school location and site design, working with the Visalia Unified School District and other districts to ensure that adequate facilities are available and integrated with neighborhoods.

Parks:

- Objective PSCU-O-1: Design parks and recreation facilities that will enhance community identity and serve the recreation and social needs of Visalians of all ages, economic situations and physical abilities.
- Objective PSCU-O-2: Continue to develop and expand special recreation amenities and programs for teens, senior citizens, and ethnic populations.
- Objective PSCU-O-3: Ensure that a wide variety of quality sports and aquatics opportunities, including Sports Tourism, are available to the community.
- Objective PSCU-O-4: Emphasize health and wellness programs in light of childhood obesity and Type II diabetes challenges in the City and County.
- Objective PSCU-O-5: Continue Visalia's strong volunteer program by expanding meaningful opportunities for community service in Parks and Recreation Department programs.
- Objective PSCU-O-6: Maximize opportunities for joint use of public land and facilities involving schools, stormwater ponding basins and other areas under public jurisdiction suitable for recreation.

- Policy PSCU-P-1: Prepare a Parks and Recreation Master Plan to implement Park policies in this General Plan. The Plan should include:
  - An assessment of existing and future recreational needs, including the needs of specific user groups and the needs of older areas of the community as well as those in new neighborhoods;
  - An assessment of opportunities for joint-use of City-owned stormwater detention basins on a year-round or seasonal basis, including priorities, access, improvement needs, security and cost-sharing arrangements;
  - Involvement of teens in design of teen programs and seniors in programs serving them;
  - A comprehensive program for providing facilities and recreational activities for identified needs, developed in consultation with VUSD and others involved in recreation programs, including joint-use opportunities with VUSD and other school districts and COS, and joint-use opportunities with City facilities, such as retention basins;
  - Proposals for coordinating affordable child care with the City's recreation programs;
  - Detailed design, construction and maintenance standards for parks and community centers and aquatic facilities emphasizing universal accessibility and barrier-free design, durability, low maintenance, and low water use;
  - A program for retrofitting existing facilities to remove barriers to handicapped users over time;
  - An action plan to define priorities, responsibilities and scheduling; and
  - A comprehensive financing strategy for park and recreation facilities, including but not limited to the Park Acquisition and Development Fee, Recreation Program Fee policies, including provisions for fee reductions, scholarships and sponsorships, and marketing, including recreation as part of the City's overall economic development plan.
- Policy PSCU-P-2: Strive to achieve and maintain a citywide standard of at least five acres of neighborhood and community parks per 1,000 residents.
- Policy PSCU-P-3: Reserve land and develop parks and public open spaces and recreation facilities consistent with designated Parks and Open Space land on the Land Use Diagram.
- Policy SCU-P-5: Create new community parks in the Northwest, Southwest, and Southeast quadrants, consistent with the Parks and Open Space diagram and the following planning guidelines:
  - Size: 5-12 acres or more; and
  - Facilities to be provided: large children's play area, reserved picnic facilities, open play fields, community building, bicycle parking, and off-street parking. They also may include tennis courts, outdoor concert areas or other special facilities based on neighborhood needs and community input.
- Policy PSCU-P-11: Develop a system of natural corridors and greenways, consistent with the Parks and Open Space diagram (Figure 5-1). These corridors will have biking and walking trails offering recreational opportunities and links between neighborhoods, parks, and Downtown. The system

of corridors will include waterway corridors as well as linear landscaped corridors to create natural gateways, parkways or buffer areas. More specifically, this system is envisioned to include:

- Greenway corridor along the St. Johns River, including broader areas to the northwest to accommodate open space areas, large group picnic facilities, a nature center, or other uses;
- Greenway corridors along Mill, Packwood and Cameron Creeks, and segments of other waterways, with sufficient width to protect riparian habitat and accommodate a multi-use trail;
- A landscaped corridor on both sides of Highway 198 providing a scenic gateway into Visalia from the west; and
- A landscaped buffer zone or parkway along Shirk Road separating industrial from residential areas, and a greenway along Road 148 marking the eastern edge of the City, both accommodating a multi-use trail.

- Policy PSCU-P-14: Design parks to enhance neighborhood character and minimize negative impacts.
  - Locate neighborhood parks with local or collector street frontages on at least three sides, and sidewalks and crossings designed for safe and easy pedestrian access.
  - Where a neighborhood park is part of a neighborhood node, it should be designed to promote visual connections and pedestrian movement between the park and adjacent uses such as schools and commercial uses.
- Policy PSCU-P-15: Provide lighted facilities for tennis, basketball or other recreational facilities and along pathways in order to extend usable hours. Lighting should be energy-efficient and designed to minimize light pollution.
- Policy PSCU-P-16: Provide at least one community center in each of the City's four neighborhood quadrants. Use existing and new com-munity center facilities to provide multicultural programs and teen recreation activities and provide space for meetings and classes. Community centers should be designed with community input, including guidance from a cross-section of user groups.
- Policy PSCU-P-20: Promote private-sector and joint public-private development of commercial recreation facilities for league softball, indoor swimming, and golf, and other recreation uses that are available to the public for a fee or on a limited basis. Commercial recreation facilities will not be counted toward the City's parkland acreage standard because they are not publicly accessible for all residents.
- Policy PSCU-P-24: Promote innovative park design that responds to neighborhood needs and user groups.
- Policy PSCU-P-25: Provide shade in parks by using arbors and other landscaping techniques.
- Policy PSCU-P-26: Encourage cooperative agreements with the City and the Kaweah Water Conservation District, levee districts, irrigation companies, school district, College of the Sequoias, Southern California Edison Company and other public agencies and utilities to explore innovative recreation open space facilities throughout the Visalia planning area.
- Policy PSCU-P-27: Develop standards for recreation use on dual purpose park/pond sites to ensure that slopes and pumping equipment do not preclude recreation use and maintenance.
- Policy PSCU-P-30: Incorporate barrier-free design in all new recreation and sports facilities, and renovate existing facilities to remove barriers to handicapped users.
- Policy PSCU-P-47: Adopt and implement a Water Efficient Landscaping Ordinance for new and/or refurbished development that exceeds mandated sizes, and ensure that all new City parks,

streetscapes, and landscaped areas conform to the Ordinance requirements. The Ordinance should include provisions to optimize outdoor water use by:

- Promoting appropriate use of plants and landscaping;
- Establishing limitations on use of turf including size of turf areas and use of cool-season turf such as Fescue grasses, with exceptions for specified uses (e.g., recreation playing fields, golf courses, and parks);
- Establishing water budgets and penalties for exceeding them;
- Requiring automatic irrigation systems and schedules, including controllers that incorporate weather-based or other self-adjusting technology;
- Promoting the use of recycled water; and
- Minimizing overspray and runoff.

Other Public Facilities:

- Objective PSCU-O-12: Provide high quality government facilities and services to the general public.
- Objective PSCU-O-16: Ensure that adequate wastewater collection, treatment, recycling and disposal facilities are provided in a timely fashion to serve existing and future needs.
- Policy PSCU-P-57: Update the Water Conservation Plant Master Plan, Sewer System Master Plan, and any other specific Master Plans related to infrastructure development to ensure that existing levels of service can be maintained for proposed land uses and development densities.
- Policy PSCU-P-60: Require new developments to incorporate flood water detention basins into project designs where consistent with the Stormwater Master Plan and the Groundwater Recharge Plan.
- Policy PSCU-P-61: Control urban and stormwater runoff, and point and non-point discharge of pollutants. As part of the City's Stormwater Management Program, adopt and implement a Stormwater Management Ordinance to minimize stormwater runoff rates and volumes, control water pollution, and maximize groundwater recharge. New development will be required to include Low Impact Development features that reduce impermeable surface areas and increase infiltration. Such features may include, but are not limited to:
  - Canopy trees or shrubs to absorb rainwater;
  - Grading that lengthens flow paths over permeable surfaces and increases runoff travel time to reduce the peak hour flow rate;
  - Partially removing curbs and gutters from parking areas where appropriate to allow stormwater sheet flow into vegetated areas;
  - Use of permeable paving in parking lots and other areas characterized by significant impervious surfaces;
  - On-site stormwater detention, use of bioswales and bioretention basins to facilitate infiltration; and
  - Integrated or subsurface water retention facilities to capture rainwater for use in landscape irrigation and other non-potable uses.

Waterways and Trails Master Plan

The Waterways and Trails Master Plan outlines goals, policies, design standards, and implementation strategies for the development of a multi-purpose trail system, often times along Visalia's primary community waterways. The trail system would link neighborhoods, parks, schools, Downtown, and other activity centers. The plan focuses on developing trails along three waterways: Packwood Creek, Mill Creek, and Cameron Creek. The Master Plan also identifies a Class I trail that runs along Cameron Creek.[37] These trails are designed to link with the City's existing bicycle network and the trail system along the St. John's River along the north edge of the City. Ultimately, the completed system would form a "ring recreational trail" around the City's periphery, several cross-town routes along waterways and other primary corridors, and a major north/south route along Santa Fe Avenue.

Along each waterway, a preferred trail alignment is identified, and recommendations and policies are made for landscaping improvements and habitat restoration within the waterway setback.

Tulare County Fire Department

Tulare County Fire Department provides fire and emergency medical services within the unincorporated areas of County. City and County have a mutual aid agreement that encompasses 59 square miles surrounding the City[38].

City of Visalia Fire Department Plan Check and Hydrant Ordinance

Visalia's requirements for new construction include provisions for the fire department to review building and site plans prior to the issuance of any permit. The fire department ensures that the Project would be adequately served by water and accessible to emergency vehicles. The Visalia Fire Department also enforces the City's Hydrant Ordinance, which states that subdividers are responsible for the installation of water mains and hydrants, and determines the minimum spacing for fire hydrants. Street dimensions are scrutinized to ensure that space would be preserved for ladder trucks to be stabilized and for emergency vehicles to turn around.

Master Mutual Aid Plan

The City actively participates in the California Master Mutual Aid Plan. Formal mutual aid agreements have been written between the City and surrounding jurisdictions. A broad automatic aid agreement encompassing 59 square miles surrounding Visalia exists between County and the City.

Multi-Jurisdictional Local Hazards Mitigation Plan

The MJ-LHMP is a formal document designed to significantly reduce loss of life and injuries resulting from a disaster; minimize damage to structures and property, as well as destruction of essential services and activities; protect the environment; and promote hazard mitigation as an integrated public policy. The most recent version of the MJ-LHMP was adopted in 2011 and updated in March, 2018.

[37] (RRM Design Group 2010)
[38] (Dyett & Bhatia Urban and Regional Planners 2014)

4.15.3 Impact Analysis

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

i. Fire Protection:

Less than Significant Impact. New construction is required to submit building and site plans for fire department review prior to the issuance of any permit. Fire Department review would also include requirements for new fire hydrants and provide specifications for required fire flows. The closest service station is 0.7 miles north of the Project. The Project will be required to pay development impact fees towards the construction and acquisition of equipment for fire suppression services. Subject to Fire Department review and with incorporation of the fire related conditions, the Project will have a less than significant impact on fire service facilities and will not warrant the need for new or physically altered fire facilities to maintain acceptable service ratios and meet performance objectives.

ii. Police Protection:

Less than Significant Impact. The closest service station is the City of Visalia Police Department, located at 204 N.W. Third Avenue, approximately 3.1 miles northwest of the Project site. The Visalia Police Department does not establish service standards either in terms of officers per thousand residents or in incident response time. While the Project may result in the need for additional police staff, the police facility is adequate in size to support additional officers, and within a distance that would allow the department to maintain acceptable response times. Furthermore, the Project will be required to pay development impact fees towards the construction and acquisition of equipment for police protection services. Therefore, the Project will have a less than significant impact on police facilities and will not warrant the need for new or physically altered police facilities to maintain acceptable service ratios and meet performance objectives.

iii. Schools:

Less than Significant Impact. The Project would be served by the Visalia Unified School District (VUSD). The Nearest Schools are:

School	Grades	Address	Distance from Project
Annie R Mitchell Elementary School	K-6	2121 E Laura Ave	1 mi NW
Divisadero Middle School	7-8	1200 S Divisadero St	3.3 mi NW
Mt. Whitney High School	9-12	900 S Conyer St	2.8 mi NW

The Project would generate approximately 160 students, distributed as follows:

Grades	Students per Dwelling Unit[39]	Students
K-6	0.31	85
7-8	0.09	25
9-12	0.18	50

[39] (Schoolworks, Inc. 2022)

Payment of fees to a school district is considered full mitigation for project impacts on school facilities (Government Code Section 65996(a)). Therefore, the project applicant would be required to pay the statutory fees to accommodate the impact of project-generated students, reducing impacts to a less than significant level. SB 50 deems payment of the fees “to provide full and complete school facilities mitigation.” As payment of these fees is required prior to issuance of building permits, impacts will be less than significant.

iv. Parks:

Less than Significant Impact. The Project site would be served by the City of Visalia Parks which offers 23 neighborhood parks located throughout the city. Kiwanis Park is the closest park to the Project site located approximately 0.87 miles north of the Project, and Cherry Meadow Park is one mile west of the Project site. Additionally, the Project proposes an 8.96-acre Neighborhood Park and Ponding Basin combination, with the park space approximately 7.8 acres in size. The city’s General Plan contains a policy to strive for a service ratio of 5 acres per 1,000 residents. The construction of the Project would maintain the current ratio. Therefore, impacts would be less than significant. Therefore, impacts would be less than significant.

v. Other public facilities:

Less than Significant Impact. Other public facilities include the Tulare County Superior Court-Visalia Courthouse, libraries, and hospitals. Though the Project may necessitate some increased maintenance for these public facilities, this potential increase can be paid for by property taxes generated by this development. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities. Impacts would be less than significant.

4.16 RECREATION

Table 4-26: Recreation Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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?	☐	☐	☒	☐

4.16.1 Baseline Conditions

Visalia classifies parks and public open space into five general categories. Facilities at each park type vary according to size. Most neighborhood parks have picnic tables, play equipment, and drinking fountains. Community and regional parks have these amenities as well as a combination of sports fields/courts, barbecue areas, parking, restrooms and facilities for other types of recreation. Parks are classified as follows:

- Pocket Park: A park typically between one-half acre and two acres in size intended to serve the needs of a specific neighborhood within a half-mile radius.
- Neighborhood Park: A park typically two to five acres in size that provides basic recreation activities for one or more neighborhoods. The service area ranges from a half-mile to a one-mile radius. These parks may include facilities such as children's playgrounds, picnic tables, benches, and walkways. Many neighborhood parks are planned adjacent to new schools, and actual neighborhood park sizes may be as large as 10 acres depending on neighborhood size and need.
- Community Park: A park typically ranging from 5 to 12 acres in size or larger, depending on the needs of the quadrant. Community parks are intended to serve the recreational needs of a larger area of the city, and particularly those residents living or working within a two-mile radius. These parks may include facilities such as sport fields, exercise courses, recreation buildings, and restrooms. Other facilities may include community centers, swimming pools, tennis courts, and concession stands.
- Large City Park: A park generally larger than 40 acres in size intended to serve the recreational needs of all city residents and to create opportunities for contact with the natural environment. These parks may include a concentration of sports fields, golf courses, and areas for picnicking and passive enjoyment of open space. The proposed Project would fall into this category.
- Natural Corridors and Greenways: A network of greenways of varying size intended to serve the recreational needs of city residents. These parks may include facilities such as bikeways, walkways, and riding trails, and are primarily developed along the city's waterways. Mill Creek and Packwood passing through the Project site fall into this category.

Currently, Visalia has 37 parks dispersed throughout the City. Four community parks (Fairview Village Park, Recreation Park, Seven Oaks Park, and Whitendale Park) provide a fuller range of community amenities or are co-located with community centers and range from approximately 9 to 14 acres. Three larger facilities, Mooney's Grove Park (County), Plaza Park and Riverway Sports Park, are located at the periphery. The St. John's Trail (St. John's Riverway) forms much of the northern edge of the City. Altogether, there are 678 acres of parkland within the City. Tulare County's Cutler Park provides another 50 acres just outside of the City; this acreage is not counted as park acreage for the City of Visalia.

The closest parks to the Project site are Kiwanis Park, Cherry Meadow Park, and Pinkham Park located approximately 0.87 miles, one mile, and 1.40 miles away, respectively.

4.16.2 Applicable Regulations

State

State Open Space Standards

State planning law (GC Section 65560) provides a structure for the preservation of open space by requiring every city and county in the state to prepare, adopt, and submit to the Secretary of the Resources Agency a "local open-space plan for the comprehensive and long-range preservation and conservation of open-space land within its jurisdiction." The following open space categories are identified for preservation:

- Open space for public health and safety, including, but not limited to, areas that require special management or regulation due to hazardous or special conditions.
- Open space for the preservation of natural resources, including, but not limited to, natural vegetation, fish and wildlife, and water resources.
- Open space for resource management and production, including, but not limited to, agricultural and mineral resources, forests, rangeland, and areas required for the recharge of groundwater basins.
- Open space for outdoor recreation, including, but not limited to, parks and recreational facilities, areas that serve as links between major recreation and open space reservations (such as trails, easements, and scenic roadways), and areas of outstanding scenic and cultural value.
- Open space for the protection of Native American sites, including, but not limited to, places, features, and objects of historical, cultural, or sacred significance such as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property (further defined in PRC Sections 5097.9 and 5097.993).

Quimby Act

The 1975 Quimby Act (GC Section 66477) authorizes cities and counties to pass ordinances requiring that developers set aside land, donate conservation easements, or pay fees for park improvements. The Act states that the dedication requirement of parkland can be a minimum of three acres per thousand residents or more and up to five acres per thousand residents if the existing ratio is greater than the minimum standard. Revenues generated through in-lieu fees collected and the Quimby Act cannot be used for the operation and maintenance of park facilities. In 1982, the Act was substantially amended. The amendments further defined acceptable uses of, or restrictions on Quimby funds, provided acreage/ population standards and formulas for determining the exaction, and indicated that the exactions must be closely tied (i.e. via nexus) to project impacts as identified through studies required by CEQA.

Local

City of Visalia General Plan

The Parks, Schools, Community Facilities, and Utilities Element of Visalia's GP was last comprehensively updated in 2014. Regarding parks and recreation, the element presents Visalia's policies and programs for the development and maintenance of parks, schools, and other fundamental building blocks for new neighborhoods to be built over the next two decades. The Element objectives and goals pertaining to recreation are as follows:

- Objective PSCU-O-1: Design parks and recreation facilities that will enhance community identify and serve the recreation and social needs of Visalians of all ages, economic situations and physical abilities.
- Objective PSCU-O-6: Maximize opportunities for joint use of public land and facilities involving schools, stormwater ponding basins and other areas under public jurisdiction suitable for recreation.
- Policy PSCU-O-2: Continue to develop and expand special recreation amenities and programs for teens, senior citizens, and ethnic populations.
- Policy PSCU-O-3: Ensure that a wide variety of quality sports and aquatics opportunities, including Sports Tourism, are available to the community.
- Policy PSCU-O-4: Emphasize health and wellness programs in light of childhood obesity and Type II diabetes challenges in the City and County.
- Policy PSCU-O-5: Continue Visalia's strong volunteer program by expanding meaningful opportunities for community service in Parks and Recreation Department programs.
- Policy PSCU-P-25: Encourage cooperative agreements with the City and the Kaweah Water Conservation District, levee districts, irrigation companies, school district, College of the Sequoias, Southern California Edison Company and other public agencies and utilities to explore innovative recreation open space facilities throughout the Visalia planning area.
- Policy PSCU-P-1: Prepare a Parks and Recreation Master Plan to implement Park policies in this GP. The Plan should include:
  - An assessment of existing and future recreational needs, including the needs of specific user groups and the needs of older areas of the community as well as those in new neighborhoods;
  - An assessment of opportunities for joint-use of City-owned stormwater detention basins on a year-round or seasonal basis, including priorities, access, improvement needs, security and cost-sharing arrangements;
  - Involvement of teens in design of teen programs and seniors in programs serving them;
  - A comprehensive program for providing facilities and recreational activities for identified needs, developed in consultation with VUSD and others involved in recreation programs, including joint-use opportunities with VUSD and other school districts and COS, and joint-use opportunities with City facilities, such as retention basins;
  - Proposals for coordinating affordable childcare with the City's recreation programs;
  - Detailed design, construction and maintenance standards for parks and community centers and aquatic facilities emphasizing universal accessibility and barrier-free design, durability, low maintenance, and low water use;

- A program for retrofitting existing facilities to remove barriers to handicapped users over time;
- An action plan to define priorities, responsibilities and scheduling; and
- A comprehensive financing strategy for park and recreation facilities, including but not limited to the Park Acquisition and Development Fee, Recreation Program Fee policies, including provisions for fee reductions, scholarships and sponsorships, and marketing, including recreation as part of the City's overall economic development plan.

- Policy PSCU-P-2: Strive to achieve and maintain a citywide standard of at least five acres of neighborhood and community parks per 1,000 residents.
- Policy PSCU-P-3: Reserve land and develop parks and public open spaces and recreation facilities consistent with designated Parks and Open Space land on the Land Use Diagram.
- Policy PSCU-P-4: Create one large new park at the City's eastern edge to enhance the City's eastern gateway along Highway 198, ensure separation between communities, and provide ample recreation space for the larger area.
- Policy SCU-P-5: Create new community parks in the Northwest, Southwest, and Southeast quadrants, consistent with the Parks and Open Space diagram and the following planning guidelines:
  - Size: 5-12 acres or more; and
  - Facilities to be provided: large children's play area, reserved picnic facilities, open play fields, community building, bicycle parking, and off-street parking. They also may include tennis courts, outdoor concert areas or other special facilities based on neighborhood needs and community input.

- Policy PSCU-P-11 Develop a system of natural corridors and greenways, consistent with the Parks and Open Space diagram (Figure 5-1). These corridors will have biking and walking trails offering recreational opportunities and links between neighborhoods, parks, and Downtown. The system of corridors will include waterway corridors as well as linear landscaped corridors to create natural gateways, parkways or buffer areas. More specifically, this system is envisioned to include:
  - Greenway corridor along the St. Johns River, including broader areas to the northwest to accommodate open space areas, large group picnic facilities, a nature center, or other uses;
  - Greenway corridors along Mill, Packwood and Cameron Creeks, and segments of other waterways, with sufficient width to protect riparian habitat and accommodate a multi-use trail;
  - A landscaped corridor on both sides of Highway 198 providing a scenic gateway into Visalia from the west; and
  - A landscaped buffer zone or parkway along Shirk Road separating industrial from residential areas, and a greenway along Road 148 marking the eastern edge of the City, both accommodating a multi-use trail.

- Policy PSCU-P-13: Design parks to enhance neighborhood character and minimize negative impacts.
  - Locate neighborhood parks with local or collector street frontages on at least three sides, and sidewalks and crossings designed for safe and easy pedestrian access.

- Where a neighborhood park is part of a neighborhood node, it should be designed to promote visual connections and pedestrian movement between the park and adjacent uses such as schools and commercial uses.

- Policy PSCU-P-14: Provide lighted facilities for tennis, basketball or other recreational facilities and along pathways in order to extend usable hours. Lighting should be energy-efficient and designed to minimize light pollution.
- Policy PSCU-P-15: Provide at least one community center in each of the City's four neighborhood quadrants. Use existing and new com-munity center facilities to provide multicultural programs and teen recreation activities and provide space for meetings and classes. Community centers should be designed with community input, including guidance from a cross-section of user groups.
- Policy PSCU-P-19: Promote private-sector and joint public-private development of commercial recreation facilities for league softball, indoor swimming, and golf, and other recreation uses that are available to the public for a fee or on a limited basis. Commercial recreation facilities will not be counted toward the City's parkland acreage standard because they are not publicly accessible for all residents.
- Policy PSCU-P-23: Promote innovative park design that responds to neighborhood needs and user groups.
- Policy PSCU-P-24: Provide shade in parks by using arbors and other landscaping techniques.
- Policy PSCU-P-25: Encourage cooperative agreements with the City and the Kaweah Water Conservation District, levee districts, irrigation companies, school district, College of the Sequoias, Southern California Edison Company and other public agencies and utilities to explore innovative recreation open space facilities throughout the Visalia planning area.
- Policy PSCU-P-26: Develop standards for recreation use on dual purpose park/pond sites to ensure that slopes and pumping equipment do not preclude recreation use and maintenance.
- Policy PSCU-P-28: Offer nature study programs to increase community awareness of open space opportunities and habitat enhancement in City parks and along community waterways.

- Policy PSCU-P-27: Develop standards for recreation use on dual purpose park/pond sites to ensure that slopes and pumping equipment do not preclude recreation use and maintenance.

- Policy PSCU-P-29: Incorporate barrier-free design in all new recreation and sports facilities and renovate existing facilities to remove barriers to handicapped users.
- Policy PSCU-P-46: Adopt and implement a Water Efficient Landscaping Ordinance for new and/or refurbished development that exceeds mandated sizes, and ensure that all new City parks, streetscapes, and landscaped areas conform to the Ordinance requirements. The Ordinance should include provisions to optimize outdoor water use by:

  - Promoting appropriate use of plants and landscaping;

  - Establishing limitations on use of turf including size of turf areas and use of cool-season turf such as Fescue grasses, with exceptions for specified uses (e.g., recreation playing fields, golf courses, and parks);

  - Establishing water budgets and penalties for exceeding them;

  - Requiring automatic irrigation systems and schedules, including controllers that incorporate weather-based or other self-adjusting technology;

  - Promoting the use of recycled water; and

- Minimizing overspray and runoff.

- Policy PSCU-P-47: Implement a program of irrigation water use analyses, irrigation surveys, irrigation audits or similar techniques using available technology to evaluate water use in existing City parks and landscape areas and undertake improvements to reduce water use to a level that does not exceed the Maximum Applied Water Allowance as calculated under the Water Efficient Landscaping Ordinance under Policy CO-P-3.
- Policy PSCU-P-48: Establish a program to reduce water use in municipal buildings and allow use of recycled water (treated wastewater) in buildings and irrigation, as feasible and appropriate.

Waterways and Trails Master Plan

As previously discussed in Section 4.15.2, the Waterways and Trails Master Plan, outlines goals, policies, design standards, and implementation strategies for the development of a multi-purpose trail system along Visalia's primary community waterways.

4.16.3 Impact Analysis

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 potential population growth associated with the Project's proposed 273 new single-family residential homes is not considered significant when compared to the City's population, and it should not increase the demand for recreational facilities, nor would it impose a strain on the existing recreational facilities such that substantial physical deterioration of existing recreational facilities would occur or be accelerated. Additionally, the Project proposes the construction of an 8.96-acre neighborhood park. Existing nearby residents, in addition to future residents within the proposed subdivision, could utilize the proposed park space. In addition, the Project would pay park impact development fees in effect at the time of the building permits to off-set potential impacts to park and recreation facilities. Therefore, impact would be 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 Project site currently consists of irrigated farmland. The Project would include the development and dedication of public open spaces in the form of a neighborhood park, which is proposed to be constructed as part of the development. As the Project includes the construction of a neighborhood park, the Project would comply with mitigation measures included in Sections 4.4.5, 4.5.4, 4.7.4, and 4.18.4. No off-site park space is required to be constructed. Impacts related to the construction of the Neighborhood Park is included in the physical impacts evaluated as part of the Project as a whole. In addition to construction of park facilities, the Project may also be responsible for the payment of in-lieu fees for park land dedication/reservation. Therefore, impacts related to the construction or expansion of recreational facilities would be less than significant.

4.17 TRANSPORTATION

Table 4-27: Transportation Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	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 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?	☐	☐	☒	☐

4.17.1 Baseline Conditions

The Project site would be located on an approximately 67.7-acre orchard along North McAuliff Street, intersected by Cherry Street. North McAuliff Street is an existing collector as designated by the City of Visalia General Plan Circulation Element. Arterial streets in Visalia are designed to transition traffic from freeways and expressways to smaller collector streets, and vice versa. State Routes (SR) in and within the immediate vicinity of the City of Visalia include SR 63, 99, 198, and 216. The Project's McAuliff Street frontage contains a bicycle route.

4.17.2 Applicable Regulations

Local

City of Visalia VMT Thresholds and Implementation Guidelines

Senate Bill (SB) 743, signed in 2013, changes the way transportation studies are conducted in California CEQA documents. Vehicle miles traveled (VMT) replaces motorist delay and level of service (LOS) as the metric for impact determination. As a result of the final rulemaking surrounding SB 743 and the implementation deadline of July 1, 2020, the City of Visalia has adopted VMT thresholds and guidelines (City of Visalia VMT Thresholds and Implementation Guidelines, LSA, Adopted March 15, 2021) to address the shift from delay-based LOS CEQA traffic analyses to VMT CEQA traffic analyses.

4.17.3 Thresholds

The City of Visalia guidelines provide details on appropriate "screening thresholds" that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed VMT analysis. Screening thresholds include:

1. Residential and office projects within a Transit Priority Area
2. Locally serving retail projects up to 50,000 square feet

3. Residential, office, or mixed-use projects within low-VMT generating areas
4. 100 percent affordable housing projects
5. Projects that are consistent with the City's General Plan and generating fewer than 1,000 daily trips

A land use project need only meet one of the above screening thresholds to result in a less than significant impact.

4.17.4 Impact Analysis

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

Less than Significant Impact. The Project proposes a maximum of 257 new peak hour vehicle trips. In accordance with the policies of the City of Visalia, a Traffic Impact Study (TIS) was prepared to evaluate Project impacts, as well as cumulative impacts, and to make recommendations for mitigation where appropriate. Thus, through compliance with the applicable policies, the Project is consistent with the plans, ordinances, and policies that address the complete circulation system.

For land use projects, such as the Project, the criteria for consistency with adopted plans, policies and ordinances, would be to determine if a project would exceed an established threshold of significance. The threshold of significance established for projects located within the area is LOS "D". The TIS prepared for the Project considered the following traffic scenarios: 1) Existing Conditions; 2) Opening Year (Extrapolated Existing + Project); 3) Future Year Obtained from Tulare County Association of Governments (Five-year + Project). The intersections studied included the following:

- McAuliff Street at Cherry Avenue
- McAuliff Street at Walnut Avenue
- Lovers Lane at Cherry Avenue
- Lovers Lane at Walnut Avenue
- Lovers Lane at K Avenue
- Cherry Avenue at 2nd Street (Proposed)
- McAuliff Street at A Street (Proposed)
- McAuliff Street at B Street (Proposed)
- McAuliff Street at C Street (Proposed)

The TIS concluded that all studied intersections comply with the Level of Service (LOS) standards for all three scenarios, with the exception of Walnut Avenue and Lovers Lane. The intersection of Walnut Avenue and Lovers Lane is currently below the established LOS standard. The City has committed to completing the intersection improvements and the Transportation Impact Fees required by City standards in association with the Project covers the necessary improvements to bring this intersection LOS to a sufficient level.[40]

In general, the City's requirements for all development projects include: 1) the provision of a minimum two points of vehicular access for any phase of development; 2) major and local street dedications; 3) street improvements, including but not limited to construction of concrete curbs, gutters, pavement, underground street lighting systems; 4) payment of applicable impact fees. The required payment of Transportation Impact Fees will ensure that the Project's contribution to this cumulative impact would

[40] (City of Visalia 2015)

be less than significant. The Project would therefore not conflict with plans, ordinances, or policies addressing the circulation system.

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

Less than Significant Impact. The Project would result in the addition of 273 new homes to the City of Visalia, resulting in an increase of population for the City. A rise in population for the area would result in an increased amount of VMT being produced from a rise in population. The City of Visalia has identified the area as being located within a Low VMT-generating area as illustrated in Appendix D: Traffic Impact Study. As a result, the Project meets one of the five screening thresholds identified in Section 4.17.3 above. These screening thresholds limit the Project's impacts relating to VMT generation to a less than significant level. Therefore, impacts would be 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 Project would not increase hazards due to a geometric design feature or incompatible use. The Project would result in one point of access along Cherry Street, Rio Vista Street, and three access points off McAuliff Street. Future connection points would be afforded to the properties to the west and northeast. Roadway design and width would be required to be approved by the City Engineer before construction could commence. Compliance with all applicable safety standards would be required and confirmed during the review of improvement plans. Therefore, impacts would be less than significant.

d) Would the project result in inadequate emergency access?

Less than Significant Impact. The Project would not result in inadequate emergency access as it proposes several points of access and provides for future connectivity to the property to the west and northeast. While the construction for the Project would result in truck deliveries, hauling of materials, and construction crews, improvement plans, and any work completed in existing roadways would be required to be approved by the City Engineer before they could occur. Therefore, impacts would be less than significant.

4.18 TRIBAL CULTURAL RESOURCES

Table 4-28: Tribal Cultural Resources Impacts

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

4.18.1 Baseline Conditions

Public Resources Code Section 21080.3.1, et seq. (codification of AB 52, 2013-14)

Public Resources Code Section 21080.3.1, et seq. (codification of AB 52, 2013-14) requires that a lead agency, within 14 days of determining that it would undertake a project, must notify in writing any California Native American Tribe traditionally and culturally affiliated with the geographic area of the project if that Tribe has previously requested notification about projects in that geographic area. The notice must briefly describe the project and inquire whether the Tribe wishes to initiate request formal consultation. Tribes have 30 days from receipt of notification to request formal consultation. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an agreement regarding necessary mitigation or agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith, but no agreement would be made.

The City of Visalia, as the public lead agency, received a letter from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to PRC § 21080.3.1 (AB 52) officially requesting notification of Projects within the Santa Rosa Rancheria's geographic area of traditional and cultural affiliation.

Records Search

A records search from the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System (CHRIS), located at California State University, Bakersfield was conducted in May 2022. The SSJVIC records search includes a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest, the California Historical Landmarks, the California Register of Historical Resources, the National Register of Historic Places, and the California State Built Environment Resources Directory listings were reviewed for the above referenced APE and an additional ½ mile radius. Due to the sensitive nature of cultural resources, archaeological site locations are not released. (Appendix C: Cultural Resources Study).

Additional sources included the State Office of Historic Preservation Historic Properties Directory, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources.

Native American Outreach

The Native American Heritage Commission (NAHC) in Sacramento was also contacted in May 2022. They were provided with a brief description of the Project and a map showing its location and requested that the NAHC perform a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate APE. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties.

4.18.2 Applicable Regulations

Federal

National Register of Historic Places

The NHPA authorizes the Secretary of the Interior to establish a NRHP, an inventory of districts, sites, buildings, structures, and objects significant on a national, state, or local level in American history, architecture, archeology, engineering, and culture. The National Register is maintained by the National Park Service, the Advisory Council on Historic Preservation, SHPO, and grants-in-aid programs.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) strives to ensure that all Indian human remains, and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums. It also states the intent for states to provide mechanisms for aiding Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

State

Office of Historic Preservation

The mission of the OHP and the State Historical Resources Commission is to preserve and enhance California's irreplaceable historic heritage as a matter of public interest so that its vital legacy of cultural, educational, recreational, aesthetic, economic, social, and environmental benefits will be maintained and enriched for present and future generations. Public Resources Code (PRC) Section 5024 requires consultation with the SHPO when a project may impact historical resources located on State-owned land.

California Register of Historic Resources

The SHPO maintains the CRHR. Historic properties listed, or formally designated for eligibility to be listed, on the National Register are automatically listed on the CRHR (PRC Section 5024.1). State Landmarks and Points of Interest are also automatically listed. The California Register can also include properties designated under local preservation ordinances or identified through local historic resource surveys.

For a historic resource to be eligible for listing on the California Register, it must be significant at the local, state, or national level under one or more of the following four criteria:

- It is associated with events that have made a significant contribution to the broad patterns of local and regional history, or the cultural heritage of California or the United States;
- It is associated with the lives of persons important to local, California, or national history;
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (California Public Resources Code).

California Environmental Quality Act

PRC Section 21083.2 Archaeological Resources: CEQA directs the lead agency to include in its environmental assessment for the project a determination of the project effects on unique archeological resources; defines unique archeological resource; enables a lead agency to require an applicant to make a reasonable effort to preserve or mitigate impacts to any affected unique archeological resource; sets requirements for the applicant to provide payment to cover costs of mitigation; and restricts excavation as a mitigation measure.

PRC Section 21084.1 Historic Resources: CEQA establishes that adverse effects on a historic resource qualifies as a significant effect on the environment; and defines historical resource.

CEQA Guidelines Section 15064.5: This section defines three ways that a property can qualify as a significant historical resource for the purposes of CEQA review:

- If the resource is listed in or determined eligible for listing in the California Register of Historical Resources;
- If the resource is included in a local register of historical resources, as defined in PRC Section 5020.1(k), or is identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g) unless a preponderance of evidence demonstrates that it is not historically or culturally significant; or
- If the lead agency determines the resource to be significant as supported by substantial evidence (CEQA Guidelines Section 15064.5)

In addition to determining the significance under CEQA and eligibility of any identified historical resource for the California Register, historic properties must be evaluated under the criteria for the National Register should federal funding or permitting become involved in any undertaking subject to this document.

CEQA Guidelines on Mitigation of Cultural Resources Impacts

CEQA Guidelines Section 15126.4 states that "public agencies should, whenever feasible, seek to avoid damaging effects on any historical resources of an archeological nature." The Guidelines further state that preservation-in-place is the preferred approach to mitigate impacts on archaeological resources. However, according to Section 15126.4, if data recovery through excavation is "the only feasible mitigation," then a "data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resources, shall be prepared and adopted prior to any excavation being undertaken." Data recovery is not required for a resource of an archaeological nature if "the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource." The section further states that its provisions apply to those archaeological resources that also qualify as historic resources.

Native American Heritage Act

Also relevant to the evaluation and mitigation of impacts to cultural resources is the Native American Heritage Act of 1976 which established the NAHC and protects Native American religious values on state property (see PRC Section 5097.9).

Public Notice to California Native American Indian Tribes

GC Section 65092 includes California Native American tribes that are on the contact list maintained by the NAHC in the definition of "person" to whom notice of public hearings shall be sent by local governments.

Disposition of Human Remains (Health and Safety Code Section 7050.5)

When an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native American groups or individuals as identified by the NAHC as provided in PRC Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials. Furthermore, HSC Section 7050.5 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 NAHC.

California Native American Graves Protection and Repatriation Act of 2001

HSC Sections 8010-8011 establish a State repatriation policy intent that is consistent with and facilitates implementation of NAGPRA. The Act strives to ensure that all California Indian human remains, and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also states the intent for the state to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

Local

City of Visalia General Plan Update

- Policy OSC-P-39: Establish requirements to avoid potential impacts to sites suspected of being archaeologically, paleontologically, or historically significant or of concern, by:

- Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;
- Determining the potential effects of development and construction on archaeological or paleontological resources (as required by CEQA);
- Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historical and archaeological sensitivity; and
- Implementing appropriate measures to avoid the identified impacts, as conditions of project approval.

4.18.3 Impact Assessment

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 the local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Less than Significant Impact. The City of Visalia, as the public lead agency, received a letter from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to PRC § 21080.3.1 (AB 52) officially requesting notification of Projects within the Santa Rosa Rancheria's geographic area of traditional and cultural affiliation. A record search of the NAHC Sacred Lands File was completed for the Project area and the results were negative for the presence of Native American tribal cultural resources. In addition, a records search from CHRIS at SSJVIC also confirmed that there are no recorded cultural or historical resources within the Project area. Despite no recorded resources were found, accidental discovery could occur. Mitigation Measures **CUL-1** and **CUL-2**, described above in Section 4.5.4 as well as **TCR-1**, **TCR-2 and TCR-3** are recommended in the event tribal cultural materials or human remains are unearthed during excavation or construction.

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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant Impact. The City of Visalia, as the public lead agency, received a letter from the Santa Rosa Rancheria Tachi Yokut Tribe pursuant to PRC § 21080.3.1 (AB 52) officially requesting notification of Projects within the Santa Rosa Rancheria's geographic area of traditional and cultural affiliation. In May 2022, the City sent the Santa Rosa Rancheria Tribe a formal letter including a Project description and a map of the Project APE. In accordance with the law, the letter provided 30 days from receipt of the letter to request consultation in writing. No response was received.

Although there is little chance the Project would cause a substantial adverse change to the significance of a tribal cultural resource as defined. Mitigation Measure **CUL-1 and CUL-2,** described in Section 4.5.4 is recommended in the event cultural materials or human remains are unearthed during excavation or construction.

4.18.4 Mitigation

See CUL-1 identified in Section 4.5

See CUL-2 identified in Section 4.5

TCR-1 (Tribal Cultural Resource Presentation): Due to Tribal history and knowledge of the project area, the Santa Rosa Rancheria Tachi Yokut Tribe has concerns and is requesting to be retained for a cultural sensitivity awareness presentation to all construction staff of the Project, prior to start of construction activities.

TCR-2 (Tribal Cultural Monitoring): An approved Tribal Monitor shall be retained to be on site to monitor during all project-related ground-disturbing construction activities within the Cultural APE (i.e., grading, excavation, etc.).

TCR-3 (Curation of Archaeological Collections): A curation agreement shall be entered into with the Santa Rosa Rancheria Tachi Yokut Tribe, materials and documents would be professionally curated as outlined in agreement and made available to other archaeologists or researchers for further study. The collections and associated records shall be transferred, to an appropriate curation facility as outlined in agreement with Santa Rosa Rancheria Tachi Yokut Tribe, to be accompanied by payment.

4.19 UTILITIES AND SERVICE SYSTEMS

Table 4-29: Utilities and Service Systems Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
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?	☐	☐	☒	☐

4.19.1 Baseline Conditions

The Project site is located on the southwest corner of McAuliff Street and Cherry Avenue in the City of Visalia.

Wastewater

The City of Visalia's existing sanitary sewer system consists of over 468 miles of gravity-flow sanitary sewer pipe ranging in size from four to 48 inches, with 12 SCADA-connected lift stations. The system currently serves most developed areas of the city limits. The Visalia Department of Public Works develops and maintains the sewer systems. The City of Visalia typically utilizes a wastewater generation factor of 100 to 125 gallons per day per capita. The nearest sewer main is located in Cherry Avenue and McAuliff Street frontages.

Solid Waste

Solid waste disposal is provided to the City by the Tulare County Resource Management Agency, which operates the Visalia Landfill approximately 5.4 miles northwest of the Project. The facility is located at 8614 Avenue 328 in Visalia and serves the cities of Visalia, Farmersville, Dinuba, Exeter, Tulare, Woodlake, Fresno, and unincorporated areas of northern Tulare and southern Fresno Counties. The approximate amount of waste disposed at Visalia in 2003 was estimated to be 120,000 tons.[41] This landfill has a maximum permitted throughput of 2,000 tons per day, a maximum permitted capacity of 18,630,666 cubic yards, and a remaining capacity of 16,145,591 cubic yards. The Visalia Landfill is expected to cease operation in January of 2024.[42] Solid waste collection is provided by the City and recyclable material processing is provided to the City by Sunset Waste Systems.

Electricity

Power is provided to the City by Southern California Edison (SCE). SCE is a subsidiary of Edison International and provides electricity to over 15 million Californians. It is one of the largest electric utilities in the nation, and the nation's single largest purchaser of renewable power. The electrical facilities network includes both overhead and underground lines, with new development required to install underground service lines.

Natural Gas

Natural gas service in the City is provided by the SoCalGas.

Communications

There are three major companies that provide communications services in Visalia: AT&T, Sprint, and Verizon. Comcast is the primary cable television and internet provider.

Water Service Company

The California Water Service Company Visalia district (Cal Water) is the primary water purveyor in the City of Visalia. The nearest water main is located adjacent to Cherry Avenue and McAuliff Street frontages.

4.19.2 Applicable Regulations

Federal

Clean Water Act

The CWA was enacted by Congress in 1972 and has been amended several times since its adoption. It is the primary federal law regulating water quality in the U.S. and forms the basis for several state and local laws throughout the country. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. The CWA prescribes the basic federal laws for regulating discharges of pollutants and sets minimum water quality standards for all surface waters in the United States. At the federal level, the CWA is administered by the USEPA. The USEPA published final regulations regarding stormwater discharges on November 16, 1990. The regulations require that MS4 discharges to surface waters to be regulated by a NPDES permit. At the State and regional levels, the CWA is administered and enforced by the SWRCB and the RWQCBs.

[41] (ESA 2010)

[42] (Dyett & Bhatia Urban and Regional Planners 2014)

Municipal Urban (Area-wide) Storm-Water Discharges

A MS4 systems defined by the USEPA must obtain an NPDES permit by a certain date according to the population served by the system. Operators the stormwater system must submit an NPDES permit application and supporting information to the respective RWQCB. The CWA provides for delegating certain responsibilities for water-quality control and planning to the states. California has been authorized by the USEPA to administer and enforce portions of the CWA, including the NPDES program. Section 208 of the CWA is designated to provide a comprehensive planning framework for both point- and non-point-source water pollution. Specific planning requirements include, but are not limited, to the following:

- Identification of needed treatment works to meet anticipated requirements over a 20-year period;
- Identification of construction priorities for the region.

Procedures and methods to control non-point-source pollution emanating from agriculture, mining, and other sources. Most owners or operators of facilities that discharge waste into a municipal sanitary sewer system need to obtain an NPDES permit. The USEPA, the SWRCB, and the respective RWQCB or the local wastewater management agency might require some industries to treat industrial hazardous wastes before such wastes are discharged to a municipal sanitary sewer system. The local wastewater management agency advises industries of those requirements.

State

State Water Resources Control Board – Waste Discharge Requirements Program

State regulations pertaining to the treatment, storage, processing, or disposal of solid waste are found in Title 27, CCR, Section 20005 et seq. (hereafter Title 27). In general, the WDR Program (sometimes also referred to as the “Non Chapter 15 (Non 15) Program”) regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDR Program also includes the discharge of wastes classified as inert, pursuant to Section 20230 of Title 27[43]. Several programs are administered under the WDR Program, including the Sanitary Sewer Order and recycled water programs.

Department of Resources Recycling and Recovery (CalRecycle)

The Department of Resources Recycling and Recovery (CalRecycle) is the State agency designated to oversee, manage, and track wastes generated in California. In 2015, statewide disposal was 33.2 million tons of solid waste. CalRecycle develops laws and regulations to control and manage waste, for which enforcement authority is typically delegated to the local government. The board works jointly with local government to implement regulations and fund programs.

The Integrated Waste Management Act of 1989 (PRC 40000, et seq.) or AB 939, administered by CalRecycle, requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

[43] (California Water Boards 2023)

National Pollutant Discharge Elimination System Permit

As authorized by the CWA, the NPDES Permit Program controls water pollution by regulating point sources that discharge pollutants into water of the United States. In California, it is the responsibility of SWRCB and RWQCBs to preserve and enhance the quality of the States waters through the development of water quality control plans and the issuance of WDR. WDRs for discharges to surface waters also serve as NPDES permits.[44] NPDES permits also regulate the requirements of the MS4 discharges to surface waters.

Construction Stormwater NPDES Permit

A CGP for Discharges of Storm Water Associated with Construction Activity (CGP, Water Quality Order No. 2009-0009-DWQ) is required for dischargers or projects who disturb one acre or more of soil or whose project disturbs less than one acre, but which is part of a larger common plan of development that in total disturbs one acre or more. The SWRCB established the CGP program to reduce surface water impacts from construction activities. This CGP was adopted in September 2009 and went into effect July 2010.

The CGP requires the development of PRDs which include the development and implementation of a SWPPP. The SWPPP must contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list/describe BMPs the discharger would use to prevent polluted stormwater runoff and show the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for “non-visible” pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Attachment B of the CGP describes the elements that must be contained in a SWPPP. Additional PRD requirements are described in Attachments C-E in the CGP.

Central Valley Regional Water Quality Control Board

The primary responsibility for the protection of water quality in California rests with the SWRCB and nine RWQCB. The SWRCB sets statewide policy for the implementation of state and federal laws and regulations. The RWQCBs adopt and implement Water Quality Control Plans (Basin Plans) which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities.

The City is located within the jurisdiction of the Central Valley RWQCB in an area identified as the Tulare Lake Basin, which comprises the drainage area of the San Joaquin Valley south of the San Joaquin River. According to the Water Quality Control Plan for the Tulare Lake Basin, the basin consists of approximately 10.5 million acres, and includes the metropolitan areas of Bakersfield, Fresno, Porterville, Hanford, Tulare, and Visalia.[45] The Regional Board has set water quality objectives for both surface and ground water, which it achieves through an implementation plan. The RWQCB efforts emphasize the importance of controlling toxic discharges and address ground water salinity, which is identified as the greatest long-term problem facing the basin.[46]

The Regional Board identifies the elimination of groundwater overdraft as an important tool to use to combat the increasing salinity of the basin, as continued overdraft would deplete good quality water supplies and introduce salts from poorer quality aquifers. Groundwater recharge is recommended as a major mechanism to prevent further groundwater overdraft.[47]

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[44] (California Water Boards 2023)
[45] (California Regional Water Quality Control Board Central Valley Region 2018)
[46] Ibid.
[47] Ibid.

Local

City of Visalia General Plan

- Objective PSCU-O-14: Provide for long-range community water needs by adopting best management practices for water use, conservation, groundwater recharge and wastewater and stormwater management.
- Objective PSCU-O-15: Preserve groundwater resources.
- Policy PSCU-P-47: Adopt and implement a Water Efficient Landscaping Ordinance for new and/or refurbished development that exceeds mandated sizes, and ensure that all new City parks streetscapes, and landscaped areas conform to the Ordinance's requirements. The Ordinance should include provisions to optimize outdoor water use by:
  - Promoting appropriate use of plants and landscaping;
  - Establishing limitations on use of turf including size of turf areas and use of cool-season turf such as Fescue grasses, with exceptions for specified uses (e.g., recreation playing fields, golf courses, and parks);
  - Establishing water budgets and penalties for exceeding them;
  - Requiring automatic irrigation systems and schedules, including controllers that incorporate weather-based or other self-adjusting technology;
  - Promoting the use of recycled water; and
  - Minimizing overspray and runoff.

City of Visalia Municipal Code

- City of Visalia Water Conservation Ordinance
  The City's Water Conservation Ordinance was adopted in 1989 and can be found in Chapter 13.20 of the Municipal Code. The Ordinance sets regulations to minimize outdoor water use and reduce unnecessary consumption of potable water. It defines and places restriction on wasteful uses of water and establishes water conservation alert stages to be enacted during periods of water shortage.
- The Visalia Municipal Code contains regulations related to solid waste and recycling in Chapter 8.28. The City, in order to promote and protect the public and refuse worker health and safety and to reduce the danger and hazards of fires and conflagrations, reserves unto itself the exclusive right and power to collect, transport, and dispose of, or to authorize, regulate, permit and control said collections, transportation and disposition of all refuse and rubble produced or found within the corporate limits of said city.
- The Visalia Municipal Code contains regulations related to solid waste and recycling in Chapter 8.29. The purpose of this chapter is to increase the recycling and reuse of construction and demolition debris, consistent with the goals of the California Integrated Waste Management Act of 1989.

4.19.3 Impact Analysis

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

Less than Significant Impact. The Project is surrounded by urban and developed areas of the City. Therefore, the Project would connect to existing water, wastewater, and stormwater infrastructure within the City, located in the Project's Cherry Avenue and McAuliff Street frontages. CalWater has provided a Will Serve letter stating they would have adequate water supplies to serve the Project. Therefore, the Project would not require the relocation or construction of new or expanded water facilities. Additionally, the Project would be served by the existing wastewater treatment provider and would not require the construction of new or expanded wastewater facilities. The Project would connect to existing natural gas, and existing power lines in the project vicinity. Natural gas and electricity connections would be coordinated with SoCalGas. Therefore, the Project would not require the relocation or construction of new water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. Therefore, impacts would be less than significant.

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. The Project area is not located in an adjudicated subbasin, and the 2020 UWMP indicates that CalWater has no issue meeting demands of this project or future projects during normal, dry, and multiple dry years. Impacts would be 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. The Wastewater Treatment Facility (WWTF) provides municipal sewerage services to 96,000 residents in the city of Visalia. The WWTF has a design capacity of 22 million gallons per day (mgd) and currently treats a daily average flow of about 13 mgd[48]. On average, wastewater in Visalia generated at a rate of approximately 92 gallons per capita per day.[49] Therefore the Project would generate approximately 0.075 MGD.[50] The WWTF has adequate capacity to serve the Project in addition to its existing commitments, therefore the Project will have a less than significant impact on wastewater capacity.

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. The Visalia Landfill located approximately 12.5 miles northwest of the Project, is the primary landfill serving the area. The facility is located at 8614 Avenue 328 in Visalia and serves the cities of Visalia, Farmersville, Dinuba, Exeter, Tulare, Woodlake, Fresno, and unincorporated areas of northern Tulare and southern Fresno Counties. The approximate amount of waste disposed at Visalia in 2003 was estimated to be 120,000 tons. This landfill has a maximum permitted throughput of

[48] (CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers 2014); (City of Visalia 2023)

[49] (California Water Service 2021)

[50] 92 gallons per capita per day x 273 dwellings x 2.99 persons per dwelling.

2,000 tons per day, a maximum permitted capacity of 18,630,666 cubic yards, and a remaining capacity of 16,145,591 cubic yards. The Visalia Landfill is expected to cease operation in January of 2024. A typical residence disposes of approximately 10 pounds of solid waste each day. The 273 residences proposed by the Project would generate approximately 1,619 cubic yard of waste per year. Assuming the current maximum daily throughput of solid waste were committed to the landfill each day through its closure date, the Project's incremental contribution of solid waste would not result in the need for new or physically altered landfill facilities to meet service objectives, and thus there would be a less than significant impact.

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 be required to comply with all regulations applicable to solid waste generation for residential projects. In order for the Project to comply with local regulations, the residential subdivision Project would be provided with basic container service. Each property owner will receive a container for solid waste, green waste, and recyclable materials. Impacts will be less than significant.

4.20 WILDFIRE

Table 4-30: Wildfire Impacts

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 Incorporated	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 uncontrollable spread of 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?	☐	☐	☐	☒

4.20.1 Baseline Conditions

The Project site would be located in an area that is not designated as being a very high fire hazard severity zone.[51] The Project site is also not located in an area that has been designated as a State Responsibility Area (SRA) by the California Board of Forestry and Fire Protection's State Responsibility Area Viewer.[52] The nearest Very High Fire Hazard Severity Zone is located in Three Rivers, approximately 19 miles away. The nearest SRA is approximately 8 miles away. The site is considered a local responsibility area and is served by City of Visalia Fire Stations. The nearest fire stations to the Project site are the City of Visalia Fire Station 56, approximately 0.33 miles to the southeast. The Project site is relatively flat and is surrounded by residential development to the north and agricultural land to the south.

4.20.2 Applicable Regulations

Federal

Federal Emergency Management Act

The Federal Emergency Management Agency is an agency within the United States Department of Homeland Security, signed as Executive Order 12127 on April 1, 1979 by President Jimmy Carter. A second Executive Order 12148 signed on July 20, 1979 accorded the agency with the missions of emergency

[51] (California Department of Forestry and FIre Protection n.d.)
[52] (California Department of Forestry and Fire Protection n.d.)

management and civil defense. The state's governor must declare a state of emergency and formally request from the president that FEMA and the federal government respond to the disaster.

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance. There are two different levels of State disaster plans: "Standard;" and "Enhanced." States that develop an approved Enhanced State Plan, which includes California, can increase the amount of funding available through the Hazard Mitigation Grant Program. The Act has also established new requirements for local hazard mitigation plans.

National Fire Plan

The National Fire Plan was developed under Executive Order 11246 in August 2000, following a landmark wildland fire season. Its intent is to actively respond to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability.

State

California Fire Plan

The Strategic California Fire Plan is the State's road map for reducing the risk of wildfire. The plan was finalized in August 2018 and directs each CAL FIRE Unit to prepare a locally specific Fire Management Plan. These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties. The plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work in the fire hazard areas. The plans are required to be updated annually.

Wildland-Urban Interface Building Standards

On September 20, 2007, the Building Standards Commission approved the Office of the State Fire Marshal emergency regulations amending the California Code of Regulations, Title 24, Part 2, known as the California Building Code. These codes include provisions for ignition-resistant construction standards in the WUI.

California Office of Emergency Services

The California Office of Emergency Services (OES) prepares the State of California Multi-Hazard Mitigation Plan (SHMP). The SHMP identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy. The SHMP is required Federally under the Disaster Mitigation Act of 2000 in order for the State to receive Federal funding.

California Fire and Building Code

The 2022 Fire and Building Code establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure or any additions connected or attached to such building structures throughout the State of California.

Local

City of Visalia Fire Department Plan Check and Hydrant Ordinance

Visalia's requirements for new construction include provisions for the Fire Department to review building and site plans prior to the issuance of any permit. The Fire Department ensures that proposed projects will be adequately served by water, and accessible to emergency vehicles. The Department also enforces the City's Hydrant Ordinance, which states that subdividers are responsible for the installation of water mains and hydrants and determines the minimum spacing for fire hydrants. Street dimensions are scrutinized to ensure that space will be preserved for ladder trucks to be stabilized, and for emergency vehicles to turn around. Basic requirements in the City's subdivision ordinance include 52-foot minimum right-of-way widths and a 53-foot turning radius for cul-de-sacs.

Master Mutual Aid Plan

The City of Visalia actively participates in the California Master Mutual Aid Plan. Formal mutual aid agreements have been written between the City and surrounding jurisdictions. A broad automatic aid agreement encompassing 59 square miles surrounding Visalia exists between Tulare County and the City.

Multi-Jurisdictional Local Hazards Mitigation Plan

Visalia is one of 11 member jurisdictions of a Multi-Jurisdictional Local Hazards Mitigation Plan (MJ-LHMP) led by the Tulare County Office of Emergency Services. The MJ-LHMP is a formal document designed to significantly reduce loss of life and injuries resulting from a disaster; minimize damage to structures and property, as well as destruction of essential services and activities; protect the environment; and promote hazard mitigation as an integrated public policy. The most recent version of the MJ-LHP was adopted in 2011; updates to the plan are carried out every five years.

Visalia Emergency Operations Plan

The California Emergency Services Act (Government Code Section 8550-8668) requires each city to prepare and maintain an Emergency Plan for natural, manmade, or war-caused emergencies that result in conditions of disaster or in extreme peril to life. The Visalia Emergency Operations Plan was updated and adopted in 2011. The Plan includes planning and response scenarios for seismic hazards, extreme weather conditions, landslides, dam failure and other flooding, wildland fires, hazardous materials incidents, transportation emergencies, civil disturbance, and terrorist attacks. It is meant to work in conjunction with the Tulare County Emergency Operations Plan and the State Emergency Plan. The Emergency Council of the Tulare County Operational Area meets for regional coordination purposes at least four times per year. In addition, the Visalia Fire Department has specific procedures for hazardous materials emergency response.

4.20.3 Impact Analysis

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The Project would not be located within an area that has been designated as a very-high fire hazard severity zone, nor has it been designated as an SRA. Furthermore, the Project is not located near a very high hazard severity zone, nor an SRA. As identified previously, the nearest Very High Fire Hazard Severity Zone is located in Three Rivers, approximately 19 miles away and the nearest SRA is approximately eight miles away. Therefore, there would be no impact.

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. Due to the Project site's lack of proximity to lands being classified a Very High Fire Hazard Severity Zone or a SRA, there would be no impact.

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The Project site is not located near a very high hazard severity zone or an SRA, nor is it located in proximity to either one. Therefore, there would be no impact.

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The Project would not be located within an area that has been designated as a very-high fire hazard severity zone, nor has it been designated as an SRA. Furthermore, the Project is not located near a very high hazard severity zone, nor an SRA. Therefore, there would be no impact.

4.21 CEQA MANDATORY FINDINGS OF SIGNIFICANCE

Table 4-31: CEQA Mandatory Findings of Significance

Does the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) 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) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

4.21.1 Statement of Findings

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

Less than Significant Impact with Mitigated Incorporated. The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the Project, with incorporation of mitigation measures, will have a less than significant effect on the environment. The potential for impacts to agricultural resources, biological resources, cultural resources, geological and tribal cultural resources from the implementation of the proposed Project will be less than significant with the incorporation of the mitigation measures discussed in this analysis. Accordingly, the proposed Project will involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period 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)?

Less than Significant Impact. CEQA Guidelines Section 15064(i) 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. The proposed Project would include an annexation, pre-zone and subdivision for purposes of allowing the development of a new residential subdivisions and associated infrastructure to connect the subdivision to the City of Visalia. The Project site was anticipated for urbanization with the development of the City's General Plan. Therefore, implementation of the Project would not result in significant cumulative impacts and all potential impacts would be reduced to less than significant through the implementation of mitigation measures and basic regulatory requirements incorporated into Project design.

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 analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the Project would have a less than a substantial adverse effect on human beings, either directly or indirectly.

CHAPTER 5 MITIGATION, MONITORING, AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Project in the City of Visalia. The MMRP lists mitigation measures recommended in the IS/MND for the Project and identifies monitoring and reporting requirements.

Table 5-1: Mitigation, Monitoring, and Reporting Program presents the mitigation measures identified for the Project. Each mitigation measure is numbered with a symbol indicating the topical section to which it pertains, a hyphen, and the impact number. For example, AIR-2 would be the second mitigation measure identified in the Air Quality analysis of the IS/MND.

The first column of Table 5-1: Mitigation, Monitoring, and Reporting Program identifies the mitigation measure. The second column, entitled "When Monitoring is to Occur," identifies the time the mitigation measure should be initiated. The third column, "Frequency of Monitoring," identifies the frequency of the monitoring of the mitigation measure. The fourth column, "Agency Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented. The last columns will be used by the Lead and Responsible Agencies to ensure that individual mitigation measures have been complied with and monitored.

Table 5-1: Mitigation, Monitoring, and Reporting Program

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
Agricultural and Forestry Resources						
AGR-1	Prior to the issuance of grading or building permits, the Project proponent shall mitigate impacts for loss of Prime Farmland and Farmland of Statewide Importance on the Project site at a 1:1 ratio. The Project proponent shall implement one or more of the following measures to mitigate the loss: Payment of In-Lieu Fees, Mitigation Banks, Fee Title Acquisition, Conservation Easements, and/or Land Use Regulation on land(s)within the Southern San Joaquin Valley of California, specifically within Kern County, Tulare County, Kings County, Fresno County, or Madera County. The City shall require, at a minimum: evidence that the preserved land has adequate water supply, agricultural zoning, evidence of land encumbrance documentation, documentation that the easement/regulations are permanent and monitored, and documentation that the mitigation strategy is appropriately endowed. This mitigation shall be verified by the City prior to issuance of grading or building permits. Should the City of Visalia develop an Agricultural Mitigation Program before future construction within the Project begins, the Project proponent shall mitigate for the loss of agricultural land pursuant to the Program that is adopted by the City.	Prior to issuance of grading or building permits	Once	Applicant/Contractor		
Biological Resources						
Nesting Raptors, Migratory Birds, and Special Status Birds						
BIO-1	The Project's construction activities will occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.	Prior to construction	Once	Applicant/Contractor		
BIO-2	If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist would conduct pre-construction surveys for Swainson's hawk nests onsite	Prior to construction	Once	Applicant/Contractor		

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	and within a 0.5-mile radius. This survey would be conducted in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee, 2000) or current guidance. The pre-construction survey would also provide a presence/absence survey for all other nesting birds within the APE and an additional 50 feet, no more than 7 days prior to the start of construction. All raptor nests would be considered "active" upon the nest-building stage.					
BIO-3	On discovery of any active nests or breeding colonies near work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and are no longer dependent on the nest.	Upon discovery of active nests or colonies near work areas	Once	Applicant/Contractor		
Bats						
BIO-4	The Project's construction activities will occur, if feasible, between November 1 and February 28 (outside of bat maternity season) in an effort to avoid impacts to maternity roosts.	Prior to construction	Once	Applicant/Contractor		
BIO-5	A pre-construction focused survey for bats will be performed if construction activities fall between March 1 and September 30 (bat maternity season) and include tree removal. The survey will be focused on trees to be removed during construction and be conducted by a qualified biologist within (7) seven days prior to tree removal.	Prior to construction	Once	Applicant/Contractor		
BIO-6	On discovery of any bat roosts near work areas, a qualified biologist should determine appropriate construction setback distances (buffer zones) based on applicable CDFW	Upon discovery of active nests or colonies near work areas	Once	Applicant/Contractor		

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	and/or USFWS guidelines, if appropriate. Construction buffers will be identified with flagging, fencing, or other easily visible means, and should be maintained until the biologist has determined that the roost will no longer be impacted by construction.					
BIO-7	Construction activities will be limited to daylight hours to reduce potential impacts to special status bats that could be foraging onsite.	Prior to construction	Once	Applicant/Contractor		
Northern California legless lizard						
BIO-8	The Project's construction activities will occur, if feasible, where discing or ground disturbance has previously occurred and avoid areas that contain loose soil and leaf litter.	Prior to construction	Once	Applicant/Contractor		
BIO-9	If activities must occur in areas that contain loose soil and leaf litter a qualified biologist will conduct pre-construction surveys within 48 hours prior to beginning ground disturbing activities. Any loose substrate in which lizards could bury themselves will be gently raked with a hand tool (e.g., a garden rake) to a depth of two inches to locate any lizards that could be under the surface.	Prior to construction	Once	Applicant/Contractor		
Cultural Resources						
CUL-1	Should archaeological remains or artifacts be unearthed during any stage of project activities, work in the area of discovery shall cease until the area is evaluated by a qualified archaeologist. If mitigation is warranted, the project proponent shall abide by recommendations of the archaeologist.	During construction	Continuously	Applicant/Contractor		
CUL-2	In the event that any human remains are discovered on the Project site, the Tulare County Coroner must be notified of the discovery (California Health and Safety Code, Section 7050.5) and all activities in the immediate area of the find or in any nearby area reasonably suspected to overlie adjacent human remains must cease until appropriate and	Upon discovery of human remains	Continuously	Applicant/Contractor		

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	lawful measures have been implemented. If the Coroner determines that the remains are not recent, but rather of Native American origin, the Coroner shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours to permit the NAHC to determine the Most Likely Descendent of the deceased Native American.					
Geology and Soils						
GEO-1	Should paleontological resources be encountered on the Project site, all ground disturbing activities in the area shall stop. A qualified paleontologist shall be contacted to assess the discovery. Mitigation may include monitoring, recording the fossil locality, data recovery and analysis, a final report. Public educational outreach may also be appropriate. Upon completion of the assessment, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City of Visalia for review, and (if paleontological materials are recovered) a paleontological repository, such as the University of California Museum of Paleontology.	Upon discovery of paleontological resources	Continuously	Applicant/Contractor		
Tribal Cultural Resources						
TCR-1	(Tribal Cultural Resource Presentation): Due to Tribal history and knowledge of the project area, the Santa Rosa Rancheria Tachi Yokut Tribe has concerns and is requesting to be retained for a cultural presentation to all construction staff of the Project, prior to start of construction activities.	Prior to commencement of construction activities	Continuously	Applicant/Contractor		
TCR-2	(Tribal Cultural Monitoring): An approved Tribal Monitor shall be retained to be on site to monitor during all project-related ground-disturbing construction activities within the Cultural APE (i.e., grading, excavation, etc.).	Prior to commencement of construction activities	Continuously	Applicant/Contractor		

Mitigation, Monitoring, and Reporting Program						
Item	Mitigation Measure	When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
TCR-3	Curation of Archaeological Collections): A curation agreement shall be entered into with the Santa Rosa Rancheria Tachi Yokut Tribe, materials and documents would be professionally curated as outlined in agreement and made available to other archaeologists or researchers for further study. The collections and associated records shall be transferred, to an appropriate curation facility as outlined in agreement with Santa Rosa Rancheria Tachi Yokut Tribe, to be accompanied by payment.	Prior to commencement of construction activities	Continuously	Applicant/Contractor		
Table Notes						

CHAPTER 6 REFERENCES

n.d.

American Legal Publishing. 2023. *Chapter 12.24: City of Visalia Oak Tree Preservation.* https://codelibrary.amlegal.com/codes/visalia/latest/visalia_ca/0-0-0-28682.

—. 2023. *City of Visalia Municipal Code. Chapter 17.52: Quasi-Public Zone.* https://codelibrary.amlegal.com/codes/visalia/latest/visalia_ca/0-0-0-36280#JD_Chapter17.52.

Best Places. 2022. *Climate in Tulare County, California.* https://www.bestplaces.net/climate/county/california/tulare.

California Department of Forestry and Fire Protection. 2022. *California State Responsibility Areas.* https://www.arcgis.com/apps/mapviewer/index.html?layers=5ac1dae3cb2544629a845d9a19e83991.

—. 2022. *FHSZ Viewer.* https://egis.fire.ca.gov/FHSZ/.

California Department of Toxic Substances Control. 2022. *California Department of Toxic Substances Control EnviroStor.* https://www.envirostor.dtsc.ca.gov/public/.

California Department of Water Resources. 2022. *California's Groundwater Live: Groundwater Levels.* https://storymaps.arcgis.com/stories/b3886b33b49c4fa8adf2ae8bdd8f16c3.

—. 2022. *Dam Breach Inundation Map Web Publisher.* https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2.

—. 2023. *Groundwater Sustainability Plans.* https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management/Groundwater-Sustainability-Plans.

California Department of Water Resources. Natural Resources Agency. 2015. "California's Groundwater Update 2013." https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/California-Groundwater-Update-2013/California-Groundwater-Update-2013---Chapter-9---Tulare-Lake.pdf.

California Geological Survey. 2008. "Guidelines for Evaluating and Mitigating Seismic Hazards in California." https://www.conservation.ca.gov/smgb/Guidelines/Documents/SP117-091508.pdf.

California Regional Water Quality Control Board Central Valley Region. 2018. "Water Quality Control Plan for the Tulare Lake Basin, Third Edition." https://www.waterboards.ca.gov/rwqcb5/water_issues/basin_plans/tularelakebp_201805.pdf.

California Water Boards. 2022. *Basin Planning.* https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

—. 2023. *National Pollutant Discharge Elimination System (NPDES) - Wastewater.* https://www.waterboards.ca.gov/water_issues/programs/npdes/.

—. 2023. *Waste Discharge Requirements Program.* https://www.waterboards.ca.gov/water_issues/programs/waste_discharge_requirements/.

California Water Service. 2021. "2020 Urban Water Management Plan Visalia District." https://www.calwater.com/docs/uwmp2020/VIS_2020_UWMP_FINAL.pdf.

California Wildlife Conservation Board. 2023. *Oak Woodlands Conservation Program.* https://wcb.ca.gov/Programs/Oaks.

City of Visalia. 2007. *Oak Tree Mitigation Policy.* http://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=3800.

—. 2023. *Wastewater.* https://www.visalia.city/depts/public_works/wastewater/default.asp.

CIty of Visalia, Dyett & Bhatia, Urban and Regional Planners, ICF International, Provost and Pritchard Consulting Group, Omni-Means, Transportation Planners and Engineers. 2014. "City of Visalia General Plan Update Draft Environmental Impact Report." Visalia. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30497.

Dyett & Bhatia Urban and Regional Planners. 2014. "Visalia General Plan Update. Chapter 2: Land Use." Visalia. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30474.

Dyett & Bhatia Urban and Regional Planners. 2014. "Visalia General Plan Update: Parks, Schools, Community Facilities, and Utilities." https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30477.

Dyett & Bhatia Urban and Regional Planners. 2014. "Visalia General Plan Update: Safety and Noise." Visalia. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30480.

ESA. 2010. "Tulare County General Plan Recirculated Draft Environmental Impact Report." http://generalplan.co.tulare.ca.us/documents/GP/002Board%20of%20Supervisors%20Materials/001BOS%20Agenda%20Items%20-%20Public%20Hearing%20August,%2028%202012/002Attachment%20A.%20FEIR/001Exhibit%201.%20FEIR%20Exec%20Summary%20&%20Chap%201-6/Recirculated%20.

ICC Digital Codes. 2020. *2019 California Building Code, Title 24, Part 2: Chapter 16 Structural Design.* https://codes.iccsafe.org/content/CBC2019P2/chapter-16-structural-design#:~:text=About%20this%20chapter%3A%20Chapter%2016%20establishes%20minimum%20design,categories%20that%20are%20indicative%20of%20their%20intended%20use.

National Park Service. 2022. *Sequoia & Kings Canyon.* March 28. https://www.nps.gov/seki/index.htm.

RRM Design Group. 2010. "Waterways and Trails Master Plan." Visalia. https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=31825.

Schoolworks, Inc. 2022. "2022 Developer Fee Justification Study Visalia Unified School District." https://www.vusd.org/site/handlers/filedownload.ashx?moduleinstanceid=24&dataid=109027&FileName=VUSD%20Developer%20Fee%20Justification%20Study%202022.pdf.

State of California. 2022. *State Water Resources Control Board Geo Tracker.* https://geotracker.waterboards.ca.gov/.

United States Census Bureau. 2020. "Quick Facts. Visalia City, California." https://www.census.gov/quickfacts/visaliacitycalifornia.

United States Department of Agriculture. 2019. "2017 Census of Agriculture." https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/Farm_and_Ranch_Irrigation_Survey/fris.pdf.

United States Geological Survey. 2022. *California's Central Valley.* https://ca.water.usgs.gov/projects/central-valley/san-joaquin-basin.html.

Appendix A: CalEEMod Output Files

Pearl Woods

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	273.00	Dwelling Unit	53.67	491,400.00	781
City Park	8.96	Acre	8.96	390,297.60	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage to actual

Construction Phase -

Grading - Grading to be balanced

Architectural Coating - Rule 4601

Fleet Mix - Assumed 2024 SJVAPCD Residential Fleet Mix

Area Coating - Rule 4601

Land Use Change -

Construction Off-road Equipment Mitigation - Dust Control Plan Required

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Sequestration - 578 new trees

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Residential_Exterior	150.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	150.00	50.00
tblAreaCoating	Area_EF_Residential_Exterior	150	50
tblAreaCoating	Area_EF_Residential_Interior	150	50
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	PhaseEndDate	9/1/2028	5/26/2028
tblConstructionPhase	PhaseEndDate	2/4/2028	10/29/2027
tblConstructionPhase	PhaseEndDate	11/3/2023	7/28/2023
tblConstructionPhase	PhaseEndDate	5/19/2028	2/11/2028
tblConstructionPhase	PhaseEndDate	6/2/2023	2/24/2023
tblConstructionPhase	PhaseStartDate	5/20/2028	2/12/2028
tblConstructionPhase	PhaseStartDate	11/4/2023	7/29/2023
tblConstructionPhase	PhaseStartDate	6/3/2023	2/25/2023
tblConstructionPhase	PhaseStartDate	2/5/2028	10/30/2027
tblFleetMix	HHD	0.02	0.02
tblFleetMix	LDA	0.51	0.53
tblFleetMix	LDT1	0.05	0.21
tblFleetMix	LDT2	0.17	0.17
tblFleetMix	LHD1	0.03	9.0000e-004
tblFleetMix	LHD2	7.9960e-003	9.0000e-004
tblFleetMix	MCY	0.02	2.5000e-003
tblFleetMix	MDV	0.17	0.06
tblFleetMix	MH	3.5920e-003	2.0000e-003
tblFleetMix	MHD	0.01	8.0000e-003
tblFleetMix	OBUS	6.3600e-004	0.00
tblFleetMix	SBUS	1.4650e-003	2.0000e-004

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFleetMix	UBUS	4.7100e-004	4.3000e-003
tblLandUse	LotAcreage	88.64	53.67
tblSequestration	NumberOfNewTrees	0.00	578.00
tblWoodstoves	NumberCatalytic	53.67	0.00
tblWoodstoves	NumberNoncatalytic	53.67	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.3292	2.9580	2.9287	7.0000e-003	0.6636	0.1190	0.7825	0.2436	0.1103	0.3539	0.0000	626.2135	626.2135	0.1312	0.0181	634.8955
2024	0.3162	2.3838	3.1400	8.2500e-003	0.3539	0.0852	0.4392	0.0960	0.0802	0.1762	0.0000	750.9129	750.9129	0.0796	0.0415	765.2641
2025	0.2926	2.2369	3.0479	8.1000e-003	0.3526	0.0736	0.4262	0.0956	0.0693	0.1649	0.0000	738.8488	738.8488	0.0781	0.0402	752.7744
2026	0.2849	2.2261	2.9926	7.9800e-003	0.3526	0.0735	0.4261	0.0956	0.0692	0.1648	0.0000	729.3576	729.3576	0.0775	0.0391	742.9417
2027	0.2516	2.0277	2.7703	7.0500e-003	0.2945	0.0702	0.3647	0.0798	0.0659	0.1457	0.0000	643.1376	643.1376	0.0783	0.0315	654.4886
2028	1.5627	0.1747	0.3279	5.8000e-004	0.0173	8.2800e-003	0.0256	4.6100e-003	7.7700e-003	0.0124	0.0000	51.9582	51.9582	0.0105	3.1000e-004	52.3144
Maximum	**1.5627**	**2.9580**	**3.1400**	**8.2500e-003**	**0.6636**	**0.1190**	**0.7825**	**0.2436**	**0.1103**	**0.3539**	**0.0000**	**750.9129**	**750.9129**	**0.1312**	**0.0415**	**765.2641**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.3292	2.9580	2.9287	7.0000e-003	0.3852	0.1190	0.5041	0.1331	0.1103	0.2433	0.0000	626.2130	626.2130	0.1312	0.0181	634.8950
2024	0.3162	2.3838	3.1400	8.2500e-003	0.3539	0.0852	0.4392	0.0960	0.0802	0.1762	0.0000	750.9125	750.9125	0.0796	0.0415	765.2637
2025	0.2926	2.2369	3.0479	8.1000e-003	0.3526	0.0736	0.4262	0.0956	0.0693	0.1649	0.0000	738.8484	738.8484	0.0781	0.0402	752.7740
2026	0.2849	2.2261	2.9926	7.9800e-003	0.3526	0.0735	0.4261	0.0956	0.0692	0.1648	0.0000	729.3573	729.3573	0.0775	0.0391	742.9413
2027	0.2516	2.0277	2.7703	7.0500e-003	0.2945	0.0702	0.3647	0.0798	0.0659	0.1457	0.0000	643.1372	643.1372	0.0783	0.0315	654.4883
2028	1.5627	0.1747	0.3279	5.8000e-004	0.0173	8.2800e-003	0.0256	4.6100e-003	7.7700e-003	0.0124	0.0000	51.9581	51.9581	0.0105	3.1000e-004	52.3143
Maximum	**1.5627**	**2.9580**	**3.1400**	**8.2500e-003**	**0.3852**	**0.1190**	**0.5041**	**0.1331**	**0.1103**	**0.2433**	**0.0000**	**750.9125**	**750.9125**	**0.1312**	**0.0415**	**765.2637**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**13.68**	**0.00**	**11.30**	**17.97**	**0.00**	**10.86**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2023**	**3-31-2023**	0.4745	0.4745
2	**4-1-2023**	**6-30-2023**	1.2339	1.2339
3	**7-1-2023**	**9-30-2023**	0.8765	0.8765
4	**10-1-2023**	**12-31-2023**	0.7226	0.7226
5	**1-1-2024**	**3-31-2024**	0.6754	0.6754

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6	**4-1-2024**	**6-30-2024**	0.6672	0.6672
7	**7-1-2024**	**9-30-2024**	0.6746	0.6746
8	**10-1-2024**	**12-31-2024**	0.6829	0.6829
9	**1-1-2025**	**3-31-2025**	0.6283	0.6283
10	**4-1-2025**	**6-30-2025**	0.6271	0.6271
11	**7-1-2025**	**9-30-2025**	0.6340	0.6340
12	**10-1-2025**	**12-31-2025**	0.6423	0.6423
13	**1-1-2026**	**3-31-2026**	0.6236	0.6236
14	**4-1-2026**	**6-30-2026**	0.6224	0.6224
15	**7-1-2026**	**9-30-2026**	0.6292	0.6292
16	**10-1-2026**	**12-31-2026**	0.6374	0.6374
17	**1-1-2027**	**3-31-2027**	0.6193	0.6193
18	**4-1-2027**	**6-30-2027**	0.6180	0.6180
19	**7-1-2027**	**9-30-2027**	0.6248	0.6248
20	**10-1-2027**	**12-31-2027**	0.4147	0.4147
21	**1-1-2028**	**3-31-2028**	0.8874	0.8874
22	**4-1-2028**	**6-30-2028**	0.8505	0.8505
		Highest	1.2339	1.2339

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1495	0.1255	2.0697	7.6000e-004		0.0195	0.0195		0.0195	0.0195	0.0000	121.5769	121.5769	5.4400e-003	2.1700e-003	122.3592
Energy	0.0354	0.3024	0.1287	1.9300e-003		0.0245	0.0245		0.0245	0.0245	0.0000	736.2487	736.2487	0.0393	0.0104	740.3213
Mobile	0.8589	1.5455	9.4988	0.0252	2.6727	0.0191	2.6918	0.7127	0.0178	0.7305	0.0000	2,383.4798	2,383.4798	0.1363	0.1197	2,422.5410
Waste						0.0000	0.0000		0.0000	0.0000	57.2292	0.0000	57.2292	3.3822	0.0000	141.7830
Water						0.0000	0.0000		0.0000	0.0000	5.6430	30.6556	36.2986	0.5822	0.0140	55.0248
Total	**3.0437**	**1.9733**	**11.6972**	**0.0279**	**2.6727**	**0.0631**	**2.7357**	**0.7127**	**0.0618**	**0.7744**	**62.8723**	**3,271.9610**	**3,334.8333**	**4.1453**	**0.1462**	**3,482.0293**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1495	0.1255	2.0697	7.6000e-004		0.0195	0.0195		0.0195	0.0195	0.0000	121.5769	121.5769	5.4400e-003	2.1700e-003	122.3592
Energy	0.0354	0.3024	0.1287	1.9300e-003		0.0245	0.0245		0.0245	0.0245	0.0000	736.2487	736.2487	0.0393	0.0104	740.3213
Mobile	0.8558	1.5232	9.3584	0.0247	2.6192	0.0188	2.6380	0.6984	0.0175	0.7159	0.0000	2,337.3809	2,337.3809	0.1346	0.1178	2,375.8584
Waste						0.0000	0.0000		0.0000	0.0000	57.2292	0.0000	57.2292	3.3822	0.0000	141.7830
Water						0.0000	0.0000		0.0000	0.0000	5.6430	30.6556	36.2986	0.5822	0.0140	55.0248
Total	**3.0406**	**1.9511**	**11.5568**	**0.0274**	**2.6192**	**0.0627**	**2.6819**	**0.6984**	**0.0615**	**0.7598**	**62.8723**	**3,225.8621**	**3,288.7344**	**4.1437**	**0.1444**	**3,435.3467**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.10**	**1.13**	**1.20**	**1.72**	**2.00**	**0.54**	**1.97**	**2.00**	**0.52**	**1.88**	**0.00**	**1.41**	**1.38**	**0.04**	**1.25**	**1.34**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	409.2240
Vegetation Land Change	-388.3060
Total	**20.9180**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/8/2023	2/24/2023	5	40	
2	Grading	Grading	2/25/2023	7/28/2023	5	110	
3	Building Construction	Building Construction	7/29/2023	10/29/2027	5	1110	
4	Paving	Paving	10/30/2027	2/11/2028	5	75	
5	Architectural Coating	Architectural Coating	2/12/2028	5/26/2028	5	75	

Acres of Grading (Site Preparation Phase): 60

Acres of Grading (Grading Phase): 330

Acres of Paving: 0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Residential Indoor: 995,085; Residential Outdoor: 331,695; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	262.00	93.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Architectural Coating	1	52.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5062	0.0000	0.5062	0.2010	0.0000	0.2010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1827	1.8984	1.5428	3.4100e-003		0.0784	0.0784		0.0721	0.0721	0.0000	299.9437	299.9437	0.0970	0.0000	302.3688
Total	**0.1827**	**1.8984**	**1.5428**	**3.4100e-003**	**0.5062**	**0.0784**	**0.5846**	**0.2010**	**0.0721**	**0.2730**	**0.0000**	**299.9437**	**299.9437**	**0.0970**	**0.0000**	**302.3688**

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8400e-003	2.7000e-003	0.0300	8.0000e-005	8.7600e-003	5.0000e-005	8.8100e-003	2.3300e-003	4.0000e-005	2.3700e-003	0.0000	7.0461	7.0461	2.4000e-004	2.3000e-004	7.1192
Total	**3.8400e-003**	**2.7000e-003**	**0.0300**	**8.0000e-005**	**8.7600e-003**	**5.0000e-005**	**8.8100e-003**	**2.3300e-003**	**4.0000e-005**	**2.3700e-003**	**0.0000**	**7.0461**	**7.0461**	**2.4000e-004**	**2.3000e-004**	**7.1192**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2278	0.0000	0.2278	0.0904	0.0000	0.0904	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1827	1.8984	1.5428	3.4100e-003		0.0784	0.0784		0.0721	0.0721	0.0000	299.9433	299.9433	0.0970	0.0000	302.3685
Total	**0.1827**	**1.8984**	**1.5428**	**3.4100e-003**	**0.2278**	**0.0784**	**0.3061**	**0.0904**	**0.0721**	**0.1625**	**0.0000**	**299.9433**	**299.9433**	**0.0970**	**0.0000**	**302.3685**

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8400e-003	2.7000e-003	0.0300	8.0000e-005	8.7600e-003	5.0000e-005	8.8100e-003	2.3300e-003	4.0000e-005	2.3700e-003	0.0000	7.0461	7.0461	2.4000e-004	2.3000e-004	7.1192
Total	**3.8400e-003**	**2.7000e-003**	**0.0300**	**8.0000e-005**	**8.7600e-003**	**5.0000e-005**	**8.8100e-003**	**2.3300e-003**	**4.0000e-005**	**2.3700e-003**	**0.0000**	**7.0461**	**7.0461**	**2.4000e-004**	**2.3000e-004**	**7.1192**

3.4 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0865	0.7912	0.8934	1.4800e-003		0.0385	0.0385		0.0362	0.0362	0.0000	127.4926	127.4926	0.0303	0.0000	128.2508
Total	**0.0865**	**0.7912**	**0.8934**	**1.4800e-003**		**0.0385**	**0.0385**		**0.0362**	**0.0362**	**0.0000**	**127.4926**	**127.4926**	**0.0303**	**0.0000**	**128.2508**

3.4 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.7800e-003	0.2304	0.0695	1.0400e-003	0.0338	1.4700e-003	0.0353	9.7700e-003	1.4100e-003	0.0112	0.0000	99.4268	99.4268	4.6000e-004	0.0150	103.8945
Worker	0.0504	0.0354	0.3929	9.9000e-004	0.1148	6.0000e-004	0.1154	0.0305	5.5000e-004	0.0311	0.0000	92.3043	92.3043	3.1300e-003	2.9500e-003	93.2621
Total	**0.0561**	**0.2658**	**0.4624**	**2.0300e-003**	**0.1486**	**2.0700e-003**	**0.1507**	**0.0403**	**1.9600e-003**	**0.0423**	**0.0000**	**191.7311**	**191.7311**	**3.5900e-003**	**0.0179**	**197.1566**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0865	0.7912	0.8934	1.4800e-003		0.0385	0.0385		0.0362	0.0362	0.0000	127.4925	127.4925	0.0303	0.0000	128.2507
Total	**0.0865**	**0.7912**	**0.8934**	**1.4800e-003**		**0.0385**	**0.0385**		**0.0362**	**0.0362**	**0.0000**	**127.4925**	**127.4925**	**0.0303**	**0.0000**	**128.2507**

3.4 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.7800e-003	0.2304	0.0695	1.0400e-003	0.0338	1.4700e-003	0.0353	9.7700e-003	1.4100e-003	0.0112	0.0000	99.4268	99.4268	4.6000e-004	0.0150	103.8945
Worker	0.0504	0.0354	0.3929	9.9000e-004	0.1148	6.0000e-004	0.1154	0.0305	5.5000e-004	0.0311	0.0000	92.3043	92.3043	3.1300e-003	2.9500e-003	93.2621
Total	**0.0561**	**0.2658**	**0.4624**	**2.0300e-003**	**0.1486**	**2.0700e-003**	**0.1507**	**0.0403**	**1.9600e-003**	**0.0423**	**0.0000**	**191.7311**	**191.7311**	**3.5900e-003**	**0.0179**	**197.1566**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7223	303.7223	0.0718	0.0000	305.5179
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7223**	**303.7223**	**0.0718**	**0.0000**	**305.5179**

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0134	0.5488	0.1617	2.4300e-003	0.0806	3.5300e-003	0.0841	0.0233	3.3800e-003	0.0267	0.0000	233.1643	233.1643	1.0500e-003	0.0350	243.6290
Worker	0.1101	0.0739	0.8605	2.2900e-003	0.2734	1.3400e-003	0.2747	0.0727	1.2300e-003	0.0739	0.0000	214.0263	214.0263	6.6800e-003	6.4600e-003	216.1173
Total	**0.1234**	**0.6227**	**1.0221**	**4.7200e-003**	**0.3539**	**4.8700e-003**	**0.3588**	**0.0960**	**4.6100e-003**	**0.1006**	**0.0000**	**447.1906**	**447.1906**	**7.7300e-003**	**0.0415**	**459.7462**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1928	1.7611	2.1179	3.5300e-003		0.0803	0.0803		0.0756	0.0756	0.0000	303.7220	303.7220	0.0718	0.0000	305.5175
Total	**0.1928**	**1.7611**	**2.1179**	**3.5300e-003**		**0.0803**	**0.0803**		**0.0756**	**0.0756**	**0.0000**	**303.7220**	**303.7220**	**0.0718**	**0.0000**	**305.5175**

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0134	0.5488	0.1617	2.4300e-003	0.0806	3.5300e-003	0.0841	0.0233	3.3800e-003	0.0267	0.0000	233.1643	233.1643	1.0500e-003	0.0350	243.6290
Worker	0.1101	0.0739	0.8605	2.2900e-003	0.2734	1.3400e-003	0.2747	0.0727	1.2300e-003	0.0739	0.0000	214.0263	214.0263	6.6800e-003	6.4600e-003	216.1173
Total	**0.1234**	**0.6227**	**1.0221**	**4.7200e-003**	**0.3539**	**4.8700e-003**	**0.3588**	**0.0960**	**4.6100e-003**	**0.1006**	**0.0000**	**447.1906**	**447.1906**	**7.7300e-003**	**0.0415**	**459.7462**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0130	0.5444	0.1582	2.3800e-003	0.0802	3.5200e-003	0.0838	0.0232	3.3600e-003	0.0266	0.0000	228.1702	228.1702	1.0100e-003	0.0342	238.3953
Worker	0.1011	0.0652	0.7907	2.2000e-003	0.2723	1.2700e-003	0.2736	0.0724	1.1700e-003	0.0736	0.0000	208.0237	208.0237	5.9800e-003	5.9500e-003	209.9456
Total	**0.1142**	**0.6096**	**0.9489**	**4.5800e-003**	**0.3526**	**4.7900e-003**	**0.3574**	**0.0956**	**4.5300e-003**	**0.1001**	**0.0000**	**436.1939**	**436.1939**	**6.9900e-003**	**0.0402**	**448.3409**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0130	0.5444	0.1582	2.3800e-003	0.0802	3.5200e-003	0.0838	0.0232	3.3600e-003	0.0266	0.0000	228.1702	228.1702	1.0100e-003	0.0342	238.3953
Worker	0.1011	0.0652	0.7907	2.2000e-003	0.2723	1.2700e-003	0.2736	0.0724	1.1700e-003	0.0736	0.0000	208.0237	208.0237	5.9800e-003	5.9500e-003	209.9456
Total	**0.1142**	**0.6096**	**0.9489**	**4.5800e-003**	**0.3526**	**4.7900e-003**	**0.3574**	**0.0956**	**4.5300e-003**	**0.1001**	**0.0000**	**436.1939**	**436.1939**	**6.9900e-003**	**0.0402**	**448.3409**

3.4 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1785	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
Total	**0.1785**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6549**	**302.6549**	**0.0711**	**0.0000**	**304.4335**

3.4 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0127	0.5408	0.1556	2.3300e-003	0.0802	3.5000e-003	0.0837	0.0232	3.3400e-003	0.0265	0.0000	223.9639	223.9639	9.8000e-004	0.0336	233.9850
Worker	0.0938	0.0581	0.7380	2.1300e-003	0.2723	1.2000e-003	0.2735	0.0724	1.1000e-003	0.0735	0.0000	202.7388	202.7388	5.3900e-003	5.5400e-003	204.5232
Total	**0.1065**	**0.5988**	**0.8935**	**4.4600e-003**	**0.3526**	**4.7000e-003**	**0.3573**	**0.0956**	**4.4400e-003**	**0.1001**	**0.0000**	**426.7027**	**426.7027**	**6.3700e-003**	**0.0391**	**438.5082**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1784	1.6273	2.0991	3.5200e-003		0.0689	0.0689		0.0648	0.0648	0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
Total	**0.1784**	**1.6273**	**2.0991**	**3.5200e-003**		**0.0689**	**0.0689**		**0.0648**	**0.0648**	**0.0000**	**302.6545**	**302.6545**	**0.0711**	**0.0000**	**304.4331**

3.4 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0127	0.5408	0.1556	2.3300e-003	0.0802	3.5000e-003	0.0837	0.0232	3.3400e-003	0.0265	0.0000	223.9639	223.9639	9.8000e-004	0.0336	233.9850
Worker	0.0938	0.0581	0.7380	2.1300e-003	0.2723	1.2000e-003	0.2735	0.0724	1.1000e-003	0.0735	0.0000	202.7388	202.7388	5.3900e-003	5.5400e-003	204.5232
Total	**0.1065**	**0.5988**	**0.8935**	**4.4600e-003**	**0.3526**	**4.7000e-003**	**0.3573**	**0.0956**	**4.4400e-003**	**0.1001**	**0.0000**	**426.7027**	**426.7027**	**6.3700e-003**	**0.0391**	**438.5082**

3.4 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1477	1.3467	1.7371	2.9100e-003		0.0570	0.0570		0.0536	0.0536	0.0000	250.4730	250.4730	0.0589	0.0000	251.9450
Total	**0.1477**	**1.3467**	**1.7371**	**2.9100e-003**		**0.0570**	**0.0570**		**0.0536**	**0.0536**	**0.0000**	**250.4730**	**250.4730**	**0.0589**	**0.0000**	**251.9450**

3.4 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0103	0.4441	0.1270	1.8900e-003	0.0664	2.8700e-003	0.0693	0.0192	2.7500e-003	0.0219	0.0000	181.6121	181.6121	7.9000e-004	0.0272	189.7271
Worker	0.0721	0.0432	0.5713	1.7100e-003	0.2254	9.3000e-004	0.2263	0.0599	8.6000e-004	0.0608	0.0000	164.0524	164.0524	4.0500e-003	4.3000e-003	165.4357
Total	**0.0825**	**0.4873**	**0.6983**	**3.6000e-003**	**0.2918**	**3.8000e-003**	**0.2956**	**0.0791**	**3.6100e-003**	**0.0827**	**0.0000**	**345.6645**	**345.6645**	**4.8400e-003**	**0.0315**	**355.1629**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1477	1.3467	1.7371	2.9100e-003		0.0570	0.0570		0.0536	0.0536	0.0000	250.4727	250.4727	0.0589	0.0000	251.9447
Total	**0.1477**	**1.3467**	**1.7371**	**2.9100e-003**		**0.0570**	**0.0570**		**0.0536**	**0.0536**	**0.0000**	**250.4727**	**250.4727**	**0.0589**	**0.0000**	**251.9447**

3.4 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0103	0.4441	0.1270	1.8900e-003	0.0664	2.8700e-003	0.0693	0.0192	2.7500e-003	0.0219	0.0000	181.6121	181.6121	7.9000e-004	0.0272	189.7271
Worker	0.0721	0.0432	0.5713	1.7100e-003	0.2254	9.3000e-004	0.2263	0.0599	8.6000e-004	0.0608	0.0000	164.0524	164.0524	4.0500e-003	4.3000e-003	165.4357
Total	**0.0825**	**0.4873**	**0.6983**	**3.6000e-003**	**0.2918**	**3.8000e-003**	**0.2956**	**0.0791**	**3.6100e-003**	**0.0827**	**0.0000**	**345.6645**	**345.6645**	**4.8400e-003**	**0.0315**	**355.1629**

3.5 Paving - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0206	0.1931	0.3280	5.1000e-004		9.4200e-003	9.4200e-003		8.6600e-003	8.6600e-003	0.0000	45.0433	45.0433	0.0146	0.0000	45.4075
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0206**	**0.1931**	**0.3280**	**5.1000e-004**		**9.4200e-003**	**9.4200e-003**		**8.6600e-003**	**8.6600e-003**	**0.0000**	**45.0433**	**45.0433**	**0.0146**	**0.0000**	**45.4075**

3.5 Paving - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	5.2000e-004	6.8100e-003	2.0000e-005	2.6900e-003	1.0000e-005	2.7000e-003	7.1000e-004	1.0000e-005	7.2000e-004	0.0000	1.9567	1.9567	5.0000e-005	5.0000e-005	1.9732
Total	**8.6000e-004**	**5.2000e-004**	**6.8100e-003**	**2.0000e-005**	**2.6900e-003**	**1.0000e-005**	**2.7000e-003**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**1.9567**	**1.9567**	**5.0000e-005**	**5.0000e-005**	**1.9732**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0206	0.1931	0.3280	5.1000e-004		9.4200e-003	9.4200e-003		8.6600e-003	8.6600e-003	0.0000	45.0433	45.0433	0.0146	0.0000	45.4075
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0206**	**0.1931**	**0.3280**	**5.1000e-004**		**9.4200e-003**	**9.4200e-003**		**8.6600e-003**	**8.6600e-003**	**0.0000**	**45.0433**	**45.0433**	**0.0146**	**0.0000**	**45.4075**

3.5 Paving - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.6000e-004	5.2000e-004	6.8100e-003	2.0000e-005	2.6900e-003	1.0000e-005	2.7000e-003	7.1000e-004	1.0000e-005	7.2000e-004	0.0000	1.9567	1.9567	5.0000e-005	5.0000e-005	1.9732
Total	**8.6000e-004**	**5.2000e-004**	**6.8100e-003**	**2.0000e-005**	**2.6900e-003**	**1.0000e-005**	**2.7000e-003**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**1.9567**	**1.9567**	**5.0000e-005**	**5.0000e-005**	**1.9732**

3.5 Paving - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0137	0.1287	0.2187	3.4000e-004		6.2800e-003	6.2800e-003		5.7800e-003	5.7800e-003	0.0000	30.0289	30.0289	9.7100e-003	0.0000	30.2717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0137**	**0.1287**	**0.2187**	**3.4000e-004**		**6.2800e-003**	**6.2800e-003**		**5.7800e-003**	**5.7800e-003**	**0.0000**	**30.0289**	**30.0289**	**9.7100e-003**	**0.0000**	**30.2717**

3.5 Paving - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.1000e-004	4.2800e-003	1.0000e-005	1.7900e-003	1.0000e-005	1.8000e-003	4.8000e-004	1.0000e-005	4.8000e-004	0.0000	1.2781	1.2781	3.0000e-005	3.0000e-005	1.2884
Total	**5.3000e-004**	**3.1000e-004**	**4.2800e-003**	**1.0000e-005**	**1.7900e-003**	**1.0000e-005**	**1.8000e-003**	**4.8000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.2781**	**1.2781**	**3.0000e-005**	**3.0000e-005**	**1.2884**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0137	0.1287	0.2187	3.4000e-004		6.2800e-003	6.2800e-003		5.7800e-003	5.7800e-003	0.0000	30.0289	30.0289	9.7100e-003	0.0000	30.2717
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0137**	**0.1287**	**0.2187**	**3.4000e-004**		**6.2800e-003**	**6.2800e-003**		**5.7800e-003**	**5.7800e-003**	**0.0000**	**30.0289**	**30.0289**	**9.7100e-003**	**0.0000**	**30.2717**

3.5 Paving - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.3000e-004	3.1000e-004	4.2800e-003	1.0000e-005	1.7900e-003	1.0000e-005	1.8000e-003	4.8000e-004	1.0000e-005	4.8000e-004	0.0000	1.2781	1.2781	3.0000e-005	3.0000e-005	1.2884
Total	**5.3000e-004**	**3.1000e-004**	**4.2800e-003**	**1.0000e-005**	**1.7900e-003**	**1.0000e-005**	**1.8000e-003**	**4.8000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.2781**	**1.2781**	**3.0000e-005**	**3.0000e-005**	**1.2884**

3.6 Architectural Coating - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4100e-003	0.0430	0.0678	1.1000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	9.5747	9.5747	5.2000e-004	0.0000	9.5878
Total	**1.5438**	**0.0430**	**0.0678**	**1.1000e-004**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**9.5747**	**9.5747**	**5.2000e-004**	**0.0000**	**9.5878**

3.6 Architectural Coating - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6300e-003	2.7000e-003	0.0371	1.1000e-004	0.0155	6.0000e-005	0.0156	4.1300e-003	6.0000e-005	4.1800e-003	0.0000	11.0765	11.0765	2.5000e-004	2.8000e-004	11.1665
Total	**4.6300e-003**	**2.7000e-003**	**0.0371**	**1.1000e-004**	**0.0155**	**6.0000e-005**	**0.0156**	**4.1300e-003**	**6.0000e-005**	**4.1800e-003**	**0.0000**	**11.0765**	**11.0765**	**2.5000e-004**	**2.8000e-004**	**11.1665**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4100e-003	0.0430	0.0678	1.1000e-004		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	9.5747	9.5747	5.2000e-004	0.0000	9.5878
Total	**1.5438**	**0.0430**	**0.0678**	**1.1000e-004**		**1.9300e-003**	**1.9300e-003**		**1.9300e-003**	**1.9300e-003**	**0.0000**	**9.5747**	**9.5747**	**5.2000e-004**	**0.0000**	**9.5878**

3.6 Architectural Coating - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6300e-003	2.7000e-003	0.0371	1.1000e-004	0.0155	6.0000e-005	0.0156	4.1300e-003	6.0000e-005	4.1800e-003	0.0000	11.0765	11.0765	2.5000e-004	2.8000e-004	11.1665
Total	**4.6300e-003**	**2.7000e-003**	**0.0371**	**1.1000e-004**	**0.0155**	**6.0000e-005**	**0.0156**	**4.1300e-003**	**6.0000e-005**	**4.1800e-003**	**0.0000**	**11.0765**	**11.0765**	**2.5000e-004**	**2.8000e-004**	**11.1665**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8558	1.5232	9.3584	0.0247	2.6192	0.0188	2.6380	0.6984	0.0175	0.7159	0.0000	2,337.3809	2,337.3809	0.1346	0.1178	2,375.8584
Unmitigated	0.8589	1.5455	9.4988	0.0252	2.6727	0.0191	2.6918	0.7127	0.0178	0.7305	0.0000	2,383.4798	2,383.4798	0.1363	0.1197	2,422.5410

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	6.99	17.56	19.62	21,998	21,558
Single Family Housing	2,577.12	2,604.42	2334.15	7,177,371	7,033,823
Total	2,584.11	2,621.98	2,353.77	7,199,368	7,055,381

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	38.40	22.60	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.509869	0.051139	0.167106	0.174849	0.031609	0.007996	0.012006	0.015707	0.000636	0.000471	0.023554	0.001465	0.003592
Single Family Housing	0.527700	0.209000	0.167500	0.055600	0.000900	0.000900	0.008000	0.021400	0.000000	0.004300	0.002500	0.000200	0.002000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	386.0619	386.0619	0.0326	3.9500e-003	388.0536
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	386.0619	386.0619	0.0326	3.9500e-003	388.0536
NaturalGas Mitigated	0.0354	0.3024	0.1287	1.9300e-003		0.0245	0.0245		0.0245	0.0245	0.0000	350.1867	350.1867	6.7100e-003	6.4200e-003	352.2677
NaturalGas Unmitigated	0.0354	0.3024	0.1287	1.9300e-003		0.0245	0.0245		0.0245	0.0245	0.0000	350.1867	350.1867	6.7100e-003	6.4200e-003	352.2677

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6.56225e+006	0.0354	0.3024	0.1287	1.9300e-003		0.0245	0.0245		0.0245	0.0245	0.0000	350.1867	350.1867	6.7100e-003	6.4200e-003	352.2677
Total		**0.0354**	**0.3024**	**0.1287**	**1.9300e-003**		**0.0245**	**0.0245**		**0.0245**	**0.0245**	**0.0000**	**350.1867**	**350.1867**	**6.7100e-003**	**6.4200e-003**	**352.2677**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6.56225e+006	0.0354	0.3024	0.1287	1.9300e-003		0.0245	0.0245		0.0245	0.0245	0.0000	350.1867	350.1867	6.7100e-003	6.4200e-003	352.2677
Total		**0.0354**	**0.3024**	**0.1287**	**1.9300e-003**		**0.0245**	**0.0245**		**0.0245**	**0.0245**	**0.0000**	**350.1867**	**350.1867**	**6.7100e-003**	**6.4200e-003**	**352.2677**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.17689e +006	386.0619	0.0326	3.9500e-003	388.0536
Total		**386.0619**	**0.0326**	**3.9500e-003**	**388.0536**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.17689e +006	386.0619	0.0326	3.9500e-003	388.0536
Total		**386.0619**	**0.0326**	**3.9500e-003**	**388.0536**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1495	0.1255	2.0697	7.6000e-004		0.0195	0.0195		0.0195	0.0195	0.0000	121.5769	121.5769	5.4400e-003	2.1700e-003	122.3592
Unmitigated	2.1495	0.1255	2.0697	7.6000e-004		0.0195	0.0195		0.0195	0.0195	0.0000	121.5769	121.5769	5.4400e-003	2.1700e-003	122.3592

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1537					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9228					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0120	0.1021	0.0435	6.5000e-004		8.2600e-003	8.2600e-003		8.2600e-003	8.2600e-003	0.0000	118.2656	118.2656	2.2700e-003	2.1700e-003	118.9684
Landscaping	0.0609	0.0234	2.0263	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3113	3.3113	3.1800e-003	0.0000	3.3908
Total	**2.1495**	**0.1255**	**2.0698**	**7.6000e-004**		**0.0195**	**0.0195**		**0.0195**	**0.0195**	**0.0000**	**121.5769**	**121.5769**	**5.4500e-003**	**2.1700e-003**	**122.3592**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1537					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9228					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0120	0.1021	0.0435	6.5000e-004		8.2600e-003	8.2600e-003		8.2600e-003	8.2600e-003	0.0000	118.2656	118.2656	2.2700e-003	2.1700e-003	118.9684
Landscaping	0.0609	0.0234	2.0263	1.1000e-004		0.0112	0.0112		0.0112	0.0112	0.0000	3.3113	3.3113	3.1800e-003	0.0000	3.3908
Total	**2.1495**	**0.1255**	**2.0698**	**7.6000e-004**		**0.0195**	**0.0195**		**0.0195**	**0.0195**	**0.0000**	**121.5769**	**121.5769**	**5.4500e-003**	**2.1700e-003**	**122.3592**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	36.2986	0.5822	0.0140	55.0248
Unmitigated	36.2986	0.5822	0.0140	55.0248

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6757	6.6265	5.6000e-004	7.0000e-005	6.6607
Single Family Housing	17.787 / 11.2136	29.6721	0.5816	0.0139	48.3641
Total		**36.2986**	**0.5822**	**0.0140**	**55.0248**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6757	6.6265	5.6000e-004	7.0000e-005	6.6607
Single Family Housing	17.787 / 11.2136	29.6721	0.5816	0.0139	48.3641
Total		**36.2986**	**0.5822**	**0.0140**	**55.0248**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	57.2292	3.3822	0.0000	141.7830
Unmitigated	57.2292	3.3822	0.0000	141.7830

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77	0.1563	9.2400e-003	0.0000	0.3872
Single Family Housing	281.16	57.0729	3.3729	0.0000	141.3958
Total		**57.2292**	**3.3822**	**0.0000**	**141.7830**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77	0.1563	9.2400e-003	0.0000	0.3872
Single Family Housing	281.16	57.0729	3.3729	0.0000	141.3958
Total		**57.2292**	**3.3822**	**0.0000**	**141.7830**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	20.9180	0.0000	0.0000	20.9180

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	62.63 / 0	-388.3060	0.0000	0.0000	-388.3060
Total		**-388.3060**	**0.0000**	**0.0000**	**-388.3060**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	578	409.2240	0.0000	0.0000	409.2240
Total		**409.2240**	**0.0000**	**0.0000**	**409.2240**

Pearl Woods

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	8.96	Acre	8.96	390,297.60	0
Single Family Housing	273.00	Dwelling Unit	53.67	491,400.00	781

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2005
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - 2005 Emission Factors

Land Use - Lot acreage to actual

Construction Phase -

Grading - Grading to be balanced

Architectural Coating - Rule 4601

Area Coating - Rule 4601

Land Use Change -

Sequestration - 578 new trees

Construction Off-road Equipment Mitigation - Dust Control Plan Required

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601

Fleet Mix - Assumed 2024 SJVAPCD Residential Fleet Mix

Woodstoves - Assumes 2020 Rule 4901 did not take effect in 2005.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblFireplaces	NumberWood	0.00	150.15
tblLandUse	LotAcreage	88.64	53.67
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.029
tblProjectCharacteristics	CO2IntensityFactor	390.98	641.35
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.006
tblSequestration	NumberOfNewTrees	0.00	578.00
tblWoodstoves	NumberCatalytic	53.67	0.00
tblWoodstoves	NumberNoncatalytic	53.67	0.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2005																864.5329
2006																967.6207
2007																971.3423
2008																975.0639
2009																863.9249
2010																63.7228
Maximum																**975.0639**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2005																864.5322
2006																967.6203
2007																971.3419
2008																975.0635
2009																863.9245
2010																63.7227
Maximum																**975.0635**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area																488.2066
Energy																988.0317
Mobile																3,704.1232
Waste																141.7830
Water																74.6945
Total																**5,396.8390**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area																488.2066
Energy																988.0317
Mobile																3,632.4127
Waste																141.7830
Water																74.6945
Total																**5,325.1285**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.33**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	409.2240
Vegetation Land Change	-388.3060
Total	**20.9180**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	2/26/2005	7/29/2005	5	110	
2	Site Preparation	Site Preparation	1/1/2005	2/25/2005	5	40	
3	Building Construction	Building Construction	7/30/2005	10/30/2009	5	1110	
4	Paving	Paving	10/31/2009	2/12/2010	5	75	
5	Architectural Coating	Architectural Coating	2/13/2010	5/28/2010	5	75	

Acres of Grading (Site Preparation Phase): 60

Acres of Grading (Grading Phase): 330

Acres of Paving: 0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Residential Indoor: 995,085; Residential Outdoor: 331,695; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	262.00	93.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating	1	52.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading - 2005

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust																0.0000
Off-Road																361.2488
Total																**361.2488**

3.2 Grading - 2005

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																10.1837
Total																**10.1837**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust																0.0000
Off-Road																361.2484
Total																**361.2484**

3.2 Grading - 2005

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																10.1837
Total																**10.1837**

3.3 Site Preparation - 2005

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust																0.0000
Off-Road																80.3895
Total																**80.3895**

3.3 Site Preparation - 2005

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																3.3329
Total																**3.3329**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust																0.0000
Off-Road																80.3894
Total																**80.3894**

3.3 Site Preparation - 2005

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																3.3329
Total																**3.3329**

3.4 Building Construction - 2005

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																145.4170
Total																**145.4170**

3.4 Building Construction - 2005

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																130.5542
Worker																133.4069
Total																**263.9610**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																145.4168
Total																**145.4168**

3.4 Building Construction - 2005

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																130.5542
Worker																133.4069
Total																**263.9610**

3.4 Building Construction - 2006

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																343.7129
Total																**343.7129**

3.4 Building Construction - 2006

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																308.5825
Worker																315.3253
Total																**623.9078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																343.7124
Total																**343.7124**

3.4 Building Construction - 2006

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																308.5825
Worker																315.3253
Total																**623.9078**

3.4 Building Construction - 2007

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																345.0348
Total																**345.0348**

3.4 Building Construction - 2007

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																309.7694
Worker																316.5381
Total																**626.3075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																345.0344
Total																**345.0344**

3.4 Building Construction - 2007

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																309.7694
Worker																316.5381
Total																**626.3075**

3.4 Building Construction - 2008

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																346.3568
Total																**346.3568**

3.4 Building Construction - 2008

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																310.9563
Worker																317.7509
Total																**628.7071**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																346.3564
Total																**346.3564**

3.4 Building Construction - 2008

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																310.9563
Worker																317.7509
Total																**628.7071**

3.4 Building Construction - 2009

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																286.8680
Total																**286.8680**

3.4 Building Construction - 2009

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																257.5477
Worker																263.1753
Total																**520.7231**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																286.8677
Total																**286.8677**

3.4 Building Construction - 2009

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																257.5477
Worker																263.1753
Total																**520.7231**

3.5 Paving - 2009

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																53.2787
Paving																0.0000
Total																**53.2787**

3.5 Paving - 2009

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																3.0551
Total																**3.0551**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																53.2786
Paving																0.0000
Total																**53.2786**

3.5 Paving - 2009

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																3.0551
Total																**3.0551**

3.5 Paving - 2010

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																34.7704
Paving																0.0000
Total																**34.7704**

3.5 Paving - 2010

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																2.0594
Total																**2.0594**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road																34.7703
Paving																0.0000
Total																**34.7703**

3.5 Paving - 2010

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																2.0594
Total																**2.0594**

3.6 Architectural Coating - 2010

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating																0.0000
Off-Road																9.6206
Total																**9.6206**

3.6 Architectural Coating - 2010

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																17.2724
Total																**17.2724**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating																0.0000
Off-Road																9.6206
Total																**9.6206**

3.6 Architectural Coating - 2010

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling																0.0000
Vendor																0.0000
Worker																17.2724
Total																**17.2724**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated																3,632.412 7
Unmitigated																3,704.123 2

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	6.99	17.56	19.62	21,998	21,558
Single Family Housing	2,577.12	2,604.42	2334.15	7,177,371	7,033,823
Total	2,584.11	2,621.98	2,353.77	7,199,368	7,055,381

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Single Family Housing	10.80	7.30	7.50	38.40	22.60	39.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.445143	0.090887	0.165130	0.187970	0.045320	0.007055	0.014780	0.012618	0.000711	0.000220	0.019746	0.001150	0.009270
Single Family Housing	0.445143	0.090887	0.165130	0.187970	0.045320	0.007055	0.014780	0.012618	0.000711	0.000220	0.019746	0.001150	0.009270

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated																635.7640
Electricity Unmitigated																635.7640
NaturalGas Mitigated																352.2677
NaturalGas Unmitigated																352.2677

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0																0.0000
Single Family Housing	6.56225e+006																352.2677
Total																	**352.2677**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0																0.0000
Single Family Housing	6.56225e+006																352.2677
Total																	**352.2677**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0				0.0000
Single Family Housing	2.17689e +006				635.7640
Total					**635.7640**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0				0.0000
Single Family Housing	2.17689e +006				635.7640
Total					**635.7640**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated																488.2066
Unmitigated																488.2066

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000
Consumer Products																0.0000
Hearth																484.7627
Landscaping																3.4439
Total																**488.2066**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating																0.0000
Consumer Products																0.0000
Hearth																484.7627
Landscaping																3.4439
Total																**488.2066**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				74.6945
Unmitigated				74.6945

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6757				10.9125
Single Family Housing	17.787 / 11.2136				63.7820
Total					**74.6945**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 10.6757				10.9125
Single Family Housing	17.787 / 11.2136				63.7820
Total					**74.6945**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				141.7830
Unmitigated				141.7830

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77				0.3872
Single Family Housing	281.16				141.3958
Total					**141.7830**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.77				0.3872
Single Family Housing	281.16				141.3958
Total					**141.7830**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated				20.9180

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Cropland	62.63 / 0				-388.3060
Total					**-388.3060**

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	578				409.2240
Total					**409.2240**

Appendix B: Biological Evaluation

Biological Evaluation

DR HORTON

PEARL WOODS SUBDIVISION PROJECT

JUNE 2022

Rene De La Fuente, Biologist
Shaylea Stark, Biologist
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I. Introduction

The following technical report, prepared by Provost & Pritchard Consulting Group, in compliance with the California Environmental Quality Act (CEQA) includes a description of the biological resources present or with potential to occur within the proposed Pearl Woods Project (Project) and surrounding areas, and evaluates potential Project-related impacts to those resources.

Project Description

The Project proposes to subdivide and develop the property into 273 single family residences on 67.70 acres of land located near the southwest corner of South McAuliff Street and East Cherry Avenue, Visalia, California. Additionally, a bridge would be constructed across the Tulare Irrigation District (TID) Canal and would connect the Project to the adjacent property. The bridge would be approximately 7 feet across by *up to* 60 feet wide and would be located near Lot 31. Pursuant to the General Plan and the Waterways and Trails Master Plan, the Project proposes to dedicate 8.96 acres as a park, trail, and basin. The Project would provide a regional-serving stormwater drainage basin with its watershed being the quarter-section that this project is located in. This location reduces the necessity of further-increasing diameter storm mains at further-increasing depths, in addition to avoiding crossing under a railroad. The Project would require to be pre-zoned to R15 and annexed into the City of Visalia boundary. The Area of Potential Effect (APE) includes the 67.70 acres of land containing a walnut orchard and oak trees, and a 50-foot additional survey buffer (see **Figure 3**).

Report Objectives

Construction activities such as that proposed by the Project could potentially damage biological resources or modify habitats that are crucial for sensitive plant and wildlife species. In cases such as these, development may be regulated by State or federal agencies, and/or addressed by local regulatory agencies.

This report addresses issues related to the following:

1. The presence of sensitive biological resources onsite, or with the potential to occur onsite.
2. The federal, State, and local regulations regarding these resources.
3. Mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies.

Therefore, the objectives of this report are:

1. Summarize all site-specific information related to existing biological resources.
2. Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.
3. Summarize all State and federal natural resource protection laws that may be relevant to the APE.
4. Identify and discuss Project impacts to biological resources likely to occur onsite within the context of CEQA and/or State or federal laws.
5. Identify and publish a set of avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

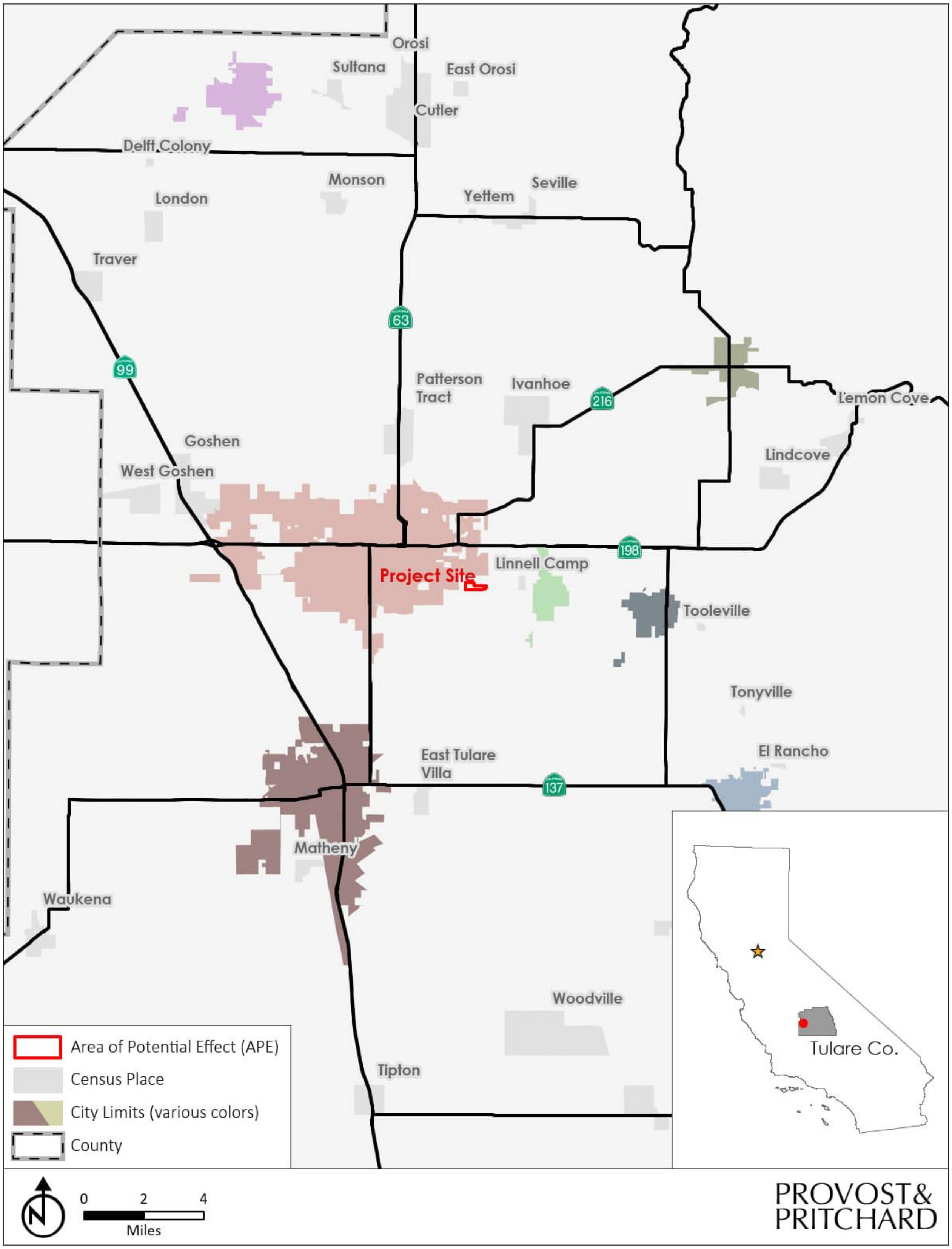


Figure 1. Regional Location

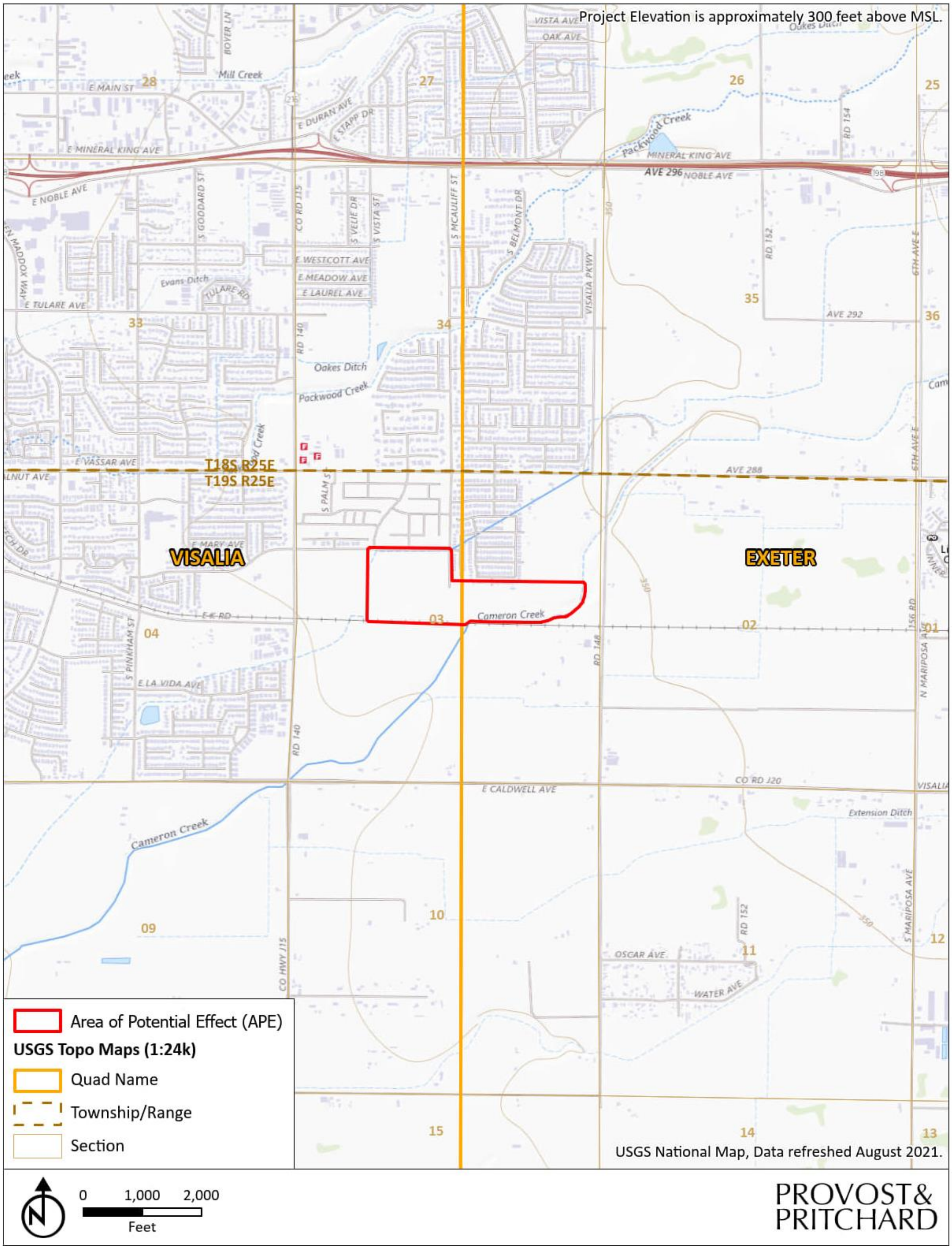


Figure 2. Topographic Quadrangle Map

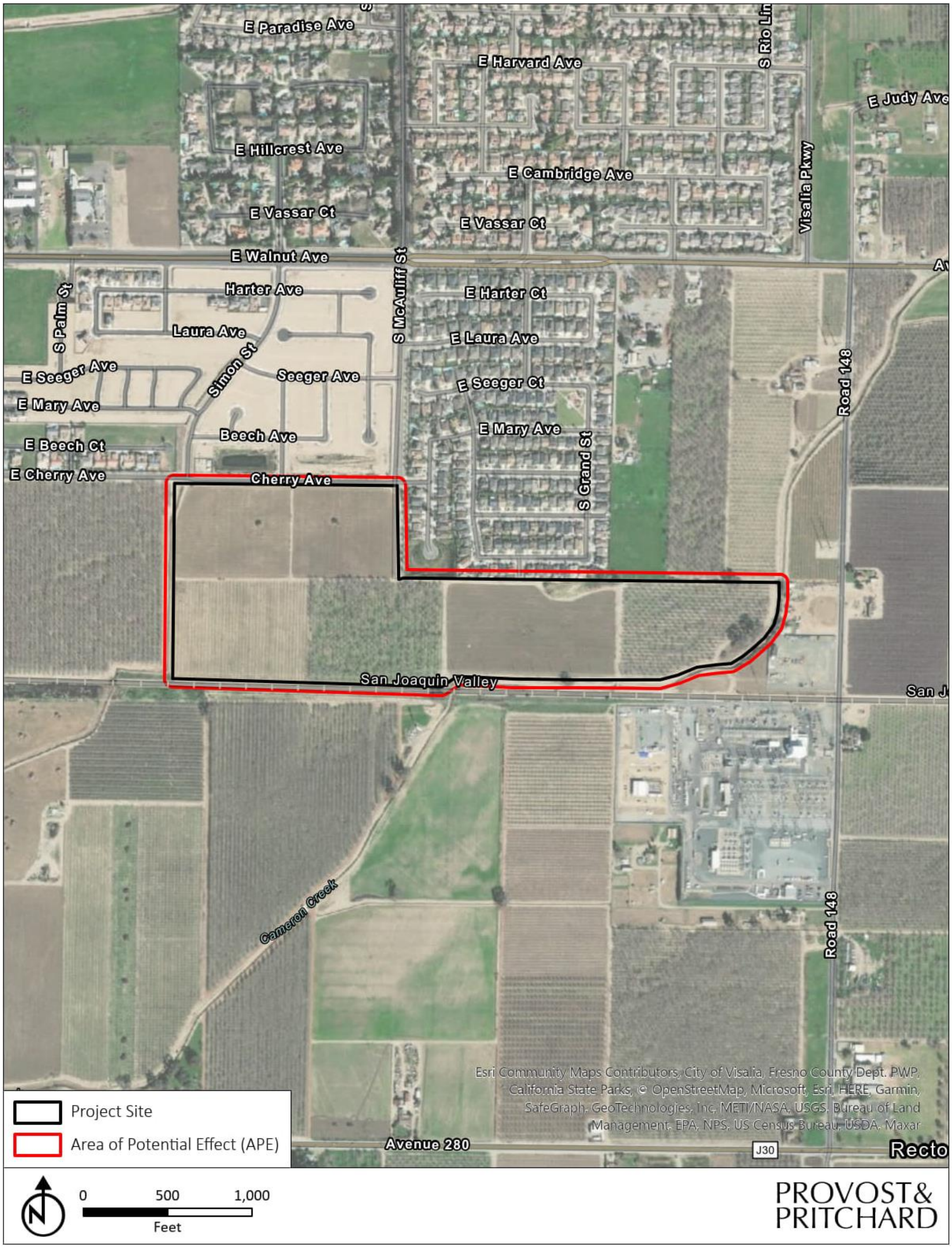


Figure 3. Area of Potential Effect

Study Methodology

A reconnaissance-level field survey of the APE was conducted on April 7, 2022 by Provost & Pritchard biologists, Rene De La Fuente, Shaylea Stark, and Roman Endicott. The survey consisted of walking and driving thoroughly through the APE while identifying and noting land uses, biological habitats and communities, plant and animal species encountered and assessed for suitable habitats of various wildlife species. Additionally, a tree survey was conducted for the valley oak trees (*Quercus lobata*) found within the APE (see **Table 2** and **Appendix E**).

The biologists conducted an analysis of potential Project-related impacts to biological resources based on the resources known to exist or with potential to exist within the APE. Sources of information used in preparation of this analysis included: the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB); the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants of California; CalFlora's online database of California native plants; the Jepson Herbarium online database (Jepson eFlora); United States Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS); Information for Planning and Consultation (IPaC) system; iNaturalist, the NatureServe Explorer online database; the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Plants Database; CDFW California Wildlife Habitat Relationships (CWHR) database; the California Herps online database; and various manuals, reports, and references related to plants and animals of the Central Valley region.

The field survey conducted included the appropriate level of detail to assess the significance of potential impacts to sensitive biological resources resulting from the Project. Furthermore, the field survey was sufficient to generally describe those features of the Project that could be subject to the jurisdiction of federal and/or State agencies, such as the United States Army Corps of Engineers (USACE), CDFW, Regional Water Quality Control Board (RWQCB) and State Water Resources Control Board (SWRCB) and used to support CEQA documents.

II. Existing Conditions

Regional Setting

Topography

The APE is located in Tulare County southeast of the City of Visalia, California (see **Figure 1** and **Figure 2**). The APE would be annexed into the City of Visalia before construction of the Project begins. This area lies within the Central Valley of California near the foothills of the Sierra Nevada Mountain Range. The topography is relatively flat with elevations ranging from approximately 336 to 348 feet.

Climate

Like most of California, the APE experiences a Mediterranean climate. Warm, dry summers are followed by cool, moist winters. Summer temperatures range between 70- and 80-degrees Fahrenheit (°F), but often exceeds 90°F in most parts of the county. Winter minimum temperatures are near 40°F. The average annual precipitation is approximately 13 inches, falling mainly from October to May (WeatherWX, 2022).

Hydrology

The Middle Branch Cross Creek watershed is comprised of stormwater or snowmelt collected in upland areas which flows down into Lion Lake. Lone Pine Creek exits Lion Lake and flows into Tamarack Lake. Hamilton Creek flows from Precipice Lake downstream before it combines with Lone Pine Creek to become the Middle Fork Kaweah River. Farther downstream the Middle Fork Kaweah River combines with the Marble Fork Kaweah River and forms the start of the Kaweah River which then goes into Kaweah Lake which exits again as the Kaweah River. This river then receives inputs from Dry Creek, and Lane Slough before flowing into Cameron Creek along with Deep Creek. Cameron Creek then runs along the east and southeast portion of the APE. Cameron Creek exits the APE and runs southwest and through Mooney Grove Park and empties into a basin. Cameron Creek then picks up further downstream and connects to a canal that empties into the Tule River which terminates in a canal within the former Tulare Lake.

Watersheds are made up of many smaller subwatersheds that drain into a particular stream, river, or lake. The Project site lies within the Middle Branch Cross Creek watershed; Hydrologic Unit Code (HUC): 1803000714 and a single subwatershed: Cameron Creek subwatershed; HUC: 180300071402. A watershed is the topographic region that drains into a stream, river, or lake. The nearest surface waters are Cameron Creek which runs along the east and southeast portion of the APE and the TID Canal that runs along the western portion of the APE. Cameron Creek and the TID Canal did not have any visible water present during the survey.

Soils

Two soil mapping units representing two soil types were identified within the APE and are listed in **Table 1**. Within the two soil mapping units there are also minor units within the APE. The soils are displayed with their core properties according to the Major Land Resource Area of California (MLRA) 19 map area. Both soil types are primarily used for farmland, if irrigated.

Table 1. List of Soils Located Onsite and Their Basic Properties

Soil	Soil Map Unit	Percent of APE	Hydric Unit	Hydric Minor Units	Drainage	Permeability	Runoff
Grangeville	Sandy loam, drained, 0 to 2 percent slopes	59.8%	Yes	Yes	Somewhat poorly drained	Moderate permeability	Negligible runoff
Nord	Sandy loam, 0 to 2 percent slopes	40.2%	No	Yes	Well drained	Moderate permeability	Negligible runoff

The Grangeville Sandy loam was the only soil map unit that was identified as hydric. Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions such that under sufficiently wet conditions, hydrophytic vegetation can be supported.

The complete Natural Resources Conservation Service (NRCS) Web Soil Survey report is available in **Appendix D** at the end of this document.

Protected Trees

A tree survey was performed on April 7, 2022. Ten Valley Oak trees were found within the APE and their height and Diameter Breast Height (DBH) were measured. Results from the tree survey can be found in **Table 2.** All ten Valley Oak trees found within the APE have a DBH of eighteen (18) inches or greater and will require a tree removal permit and subsequent mitigation as written in the City of Visalia Oak Tree Ordinance. A map showing the locations of the trees within the APE can be found in **Appendix E**.

Table 2. Results from the Valley Oak Tree Survey

Species	Height (feet)	(DBH) (Inches)	Protected under the Oak Tree Ordinance
Valley Oak Tree #1	67.4	44.01	Yes
Valley Oak Tree #2	104.8	53.34	Yes
Valley Oak Tree #3	117.4	32.32	Yes
Valley Oak Tree #4	128	66.34	Yes
Valley Oak Tree #5	61.4	22.83	Yes
Valley Oak Tree #6	98.4	62.20	Yes
Valley Oak Tree #7	77.9	51.18	Yes
Valley Oak Tree #8	85.7	39.00	Yes
Valley Oak Tree #9	43.4	18.90	Yes
Valley Oak Tree #10	55.1	52.75	Yes

Biotic Habitats

Ruderal/Agricultural

The APE is located on private property used for walnut groves. The APE is dominated by English walnuts (*Juglans regia*) and valley oak (*Quercus lobata*). Herbaceous vegetation was dominated by common Stork's bill (*Erodium cicutarium*), black mustard (*Brassica nigra*), wall barley (*Hordeum murinum*), and cheeseweed (*Malva neglecta*).

The survey of the APE resulted in the identification of numerus bird species including Killdeer (Melanerpes *formicivorus*), Canada Goose (*Corvus corax*), Mallard Duck (*Sturnus vulgaris*), Mourning Dove (*Zenaida macroura*), Northern Mockingbird (Mimus polyglottos), Scrub Jay (*Salpinctes obsoletus*), Red-tailed Hawk (*Buteo jamaicensis*), White-Crowned Sparrow (Sayornis saya), Tree Swallow (*Tachycineta biolor*), Turkey Vulture (*Cathartes aura*), and Western Meadowlark (*Sturnella neglecta*). The field survey was conducted during nesting bird season and one recently active Western Scrub Jay nest with eggshell debris was located in a large Valley Oak tree within the APE. The nest was observed for over 20 minutes with no signs of continued use after the young fledged and was then considered inactive.

Cameron Creek/TID Canal

The nearest surface waters are Cameron Creek which runs along the eastern and southern portions of the APE and the TID Canal that runs along the western portion of the APE. Cameron Creek and the TID Canal did not have any surface water present during the survey. There were canine tracks near both the creek and canal that were consistent with that of a domestic dog (*Canis lupus familiaris*).

Representative photographs of the APE and vicinity are available in

Appendix ***A*** at the end of this document.

Natural Communities of Special Concern

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, or home to special status species. CDFW is responsible for the classification and mapping of all-natural communities in California. Just as the special status plant and animal species, these natural communities of special concern can be found within the CNDDB.

According to CNDDB, there are no recorded observations of natural communities of special concern with potential to occur within the APE or vicinity. Additionally, no natural communities of special concern were observed during the biological survey.

Designated Critical Habitat of the APE

The USFWS often designates areas of "Critical Habitat" when it lists species as threatened or endangered. Critical Habitat is a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. According to CNDDB and IPaC, designated critical habitat is absent from the APE and vicinity.

Wildlife Movement Corridors

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, ridgelines, and rivers and creeks supporting riparian vegetation.

The southeastern portion of the APE is adjacent to Cameron Creek which may serve as a wildlife movement corridor. There were canine tracks near the creek that were consistent with that of a domestic or stray dog. Other species such as San Joaquin Kit Fox (SJKF) could also use this creek but would be considered transient. There are no potential impacts based on Project activities that would limit wildlife movement. Cameron Creek runs along the eastern section to the southern section of the APE and continues past the APE.

Special Status Plants and Animals

California contains several "rare" plant and animal species. In this context, rare is defined as species known to have low populations or limited distributions. As the human population grows, urban expansion encroaches on the already-limited suitable habitat. This results in sensitive species becoming increasingly more vulnerable to extirpation. State and federal regulations have provided the CDFW and the USFWS with a mechanism for conserving and protecting the diversity of plant and animal species native to California. Numerous native plants and animals have been formally designated as "threatened" or "endangered" under State and federal endangered species legislation. Other formal designations include "candidate" for listing or "species of special concern" by CDFW. The CNPS has its list of native plants considered rare, threatened, or endangered. Collectively these plants and animals are referred to as "special status species." This survey was conducted outside of the blooming season for most plants. Further investigation of special status plants is recommended to occur inside the plants' blooming seasons.

A thorough search of the CNDDB for published accounts of special status plant and animal species was conducted for the *Visalia* and *Exeter* 7.5-minute quadrangles that contain the APE, and for the 10 surrounding quadrangles: *Traver, Monson*, *Ivanhoe*, *Woodlake*, *Rocky Hill*, *Lindsay*, *Cairns Corner*, *Tulare*, *Paige*, and *Goshen*. **Figure 2** shows the Project's 7.5-minute quadrangle, according to United States Geological Survey Topographic Maps. These species, and their potential to occur within the APE, are listed in **Table 3** and **Table 4**. Raw data obtained from CNDDB and IPaC is available in **Appendix B** and **Appendix C** the end of this document. All relevant sources of information, as discussed in the Study Methodology section of this report were used to determine if any special status species are known to be within the APE.

Table 3. List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project Site
American badger (*Taxidea taxus*)	CSC	Grasslands, savannas, and mountain meadows near timberline are preferred. Most abundant in drier open spaces of shrub and grassland. Burrows in soil.	**Unlikely**. The only recorded regional occurrence of this species occurred approximately four miles northeast of the APE in 1994. The APE is frequently disturbed area with stray and domestic dogs that would this species from living here.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE, CFP	Inhabits semi-arid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos, usually on sandy, gravelly, or loamy substrate, sometimes on hardpan. Often found where there are abundant rodent burrows in dense vegetation or tall grass. Cannot survive on lands under cultivation. Known to bask on kangaroo rat mounds and often seeks shelter at the base of shrubs, in small mammal burrows, or in rock piles. Adults may excavate shallow burrows but rely on deeper pre-existing rodent burrows for hibernation and reproduction.	**Absent**. There are no recorded regional observations of this species in CNDDB. The species is listed on IPaC. The most recent recorded observation is from iNaturalist in 2019 approximately 20 miles of the APE. Suitable habitat is not present within the APE. There are frequently disturbed agricultural fields. Rodent burrows in this area are not abundant.
Burrowing Owl (*Athene cunicularia*)	CSC	Resides in open, dry annual or perennial grasslands, deserts, and scrublands with low growing vegetation. Nests underground in existing burrows created by mammals, most often ground squirrels.	**Unlikely**. There are ten recorded regional observations of this species. The nearest recorded observation of this species occurred approximately nine miles north of the APE in 2006. The APE does not have an abundant amount of ground squirrel burrows that would be suitable habitat for this species.
California red-legged frog (*Rana draytonii*)	FT, CSC	Inhabits perennial rivers, creeks, and stock ponds with vegetative cover within the Coast Range and northern Sierra foothills.	**Absent**. The APE is outside of this species known range. There are no recorded regional observations of this species in CNDDB. The species is listed in IPaC as a Federally Threatened species. The nearest observation on iNaturalist is from 2015 approximately 70 miles southwest of the APE.
California tiger salamander (*Ambystoma californiense*)	FT, CT, CWL	Requires vernal pools or seasonal ponds for breeding and small mammal burrows for aestivation. Generally found in grassland and oak savannah plant communities in central California from sea level to 1500 feet in elevation.	**Unlikely**. There are 13 recorded regional observations of this species. The nearest recorded observation of this species occurred approximately nine miles north of the APE in 2002. Cameron Creek has been historically dry and the TID canal does not provide suitable habitat for this species. Upland habitat required by this species is also absent from the APE and surrounding areas.
Delta smelt (*Hypomesus transpacificus*)	FT, CE	This pelagic and euryhaline species is Endemic to the Sacramento-San Joaquin River Delta, upstream	**Absent**. The APE is outside of this species known range. There are no recorded regional observations of this species in CNDDB. This species is listed

Species	Status	Habitat	Occurrence on Project Site
		through Contra Costa, Sacramento, San Joaquin, and Solano Counties.	in IPaC as federally threatened. The nearby canal is dry and there are no tributaries that connect with a known delta smelt waterway.
Foothill yellow-legged frog (*Rana boylii*)	CCT, CSC	Frequents rocky streams and rivers with rocky substrate and open, sunny banks in forests, chaparral, and woodlands. Occasionally found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	**Absent**. The APE is outside of this species known range. The only recorded regional observation of this species occurred approximately 12.5 miles northeast of the APE in 1941 but is listed as extirpated. There is no suitable habitat present for this species.
Giant gartersnake (*Thamnophis gigas*)	FT, CT	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking. This species uses small mammal burrows adjacent to aquatic habitats for hibernation in the winter and to escape from excessive heat in the summer.	**Unlikely**. There are no recorded regional observations of this species in CNDDB. The species is listed on IPaC as federally threatened. There are some mammal burrows in the area, but Cameron Creek and the TID Canal do not provide suitable habitat as they lack surface water and emergent vegetation.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. In the Central Valley, nests in riparian areas, desert scrub, and agricultural hedgerows.	**Unlikely**. The only recorded regional observation of this species occurred approximately 12 miles northwest of the APE in 1992. There are multiple observations of the species on iNaturalist. The nearest observation is from 2019 approximately 7.5 miles south of the APE in the Herbert Wetland Prairie Preserve. The walnut groves and frequent maintenance and disturbance in the APE would deter this species.
Northern California legless lizard (*Anniella pulchra*)	CSC	Found primarily underground, burrowing in loose, sandy soil. Forages in loose soil and leaf litter during the day. Occasionally observed on the surface at dusk and night.	**Possible**. The nearest contemporary observation of this species occurred approximately 4.5 miles east of the APE in 2015. The most recent recorded observation is from iNaturalist in 2021 approximately 6 miles southeast of the APE. Soils within the APE and leaf litter from the Valley oaks in the APE could provide suitable habitat for the species.
Northern leopard frog (*Lithobates pipiens*)	CSC	Inhabits grassland, wet meadows, potholes, forests, woodland, brushlands, springs, canals, bogs, marshes, and reservoirs. Generally, prefers permanent water with abundant riparian vegetation.	**Absent**. There are two recorded regional observations of this species. Both observations of this species occurred approximately 12 miles north of the APE in 1961 and are listed as transplants outside of native habitat/range. The habitat required for this species is not present within or nearby the APE.
Pallid bat (*Antrozous pallidus*)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods, and occasionally takes insects in flight. Prefers to roost in rock crevices, but may also use tree	**Possible**. Multiple tree cavities were present in an orchard within the APE. The biological survey was conducted during the day so nighttime surveys would be needed to determine presence or absence of this species. The only

Species	Status	Habitat	Occurrence on Project Site
		cavities, caves, bridges, and other man-made structures.	recorded regional observation of this species occurred approximately four miles northeast of the APE in 2004.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Underground dens with multiple entrances in alkali sink, valley grassland, and woodland in valleys and adjacent foothills.	**Unlikely**. There are 25 recorded regional observations of this species. The nearest observation of this species occurred approximately 0.5 miles southwest of the APE in 1975. There is an observation on iNaturalist from 2017 approximately 45 miles southwest of the APE. There are multiple domestic and stray dogs in the area that would deter the species from living here.
Swainson's Hawk (*Buteo swainsoni*)	CT	Nests in large trees in open areas adjacent to grasslands, grain or alfalfa fields, or livestock pastures suitable for supporting rodent populations.	**Possible**. There are 34 recorded regional observations of this species. The nearest observation of this species occurred approximately seven miles south of the APE in 2016. There is an observation on iNaturalist from 2021 approximately 5 miles to the east of the APE in the Kaweah Oaks Preserve. Oak trees within the APE are tall enough to support nests.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Burrows in soil. Often found in grassland and shrubland.	**Unlikely**. The only recorded regional observation of this species occurred approximately 12 miles south of the APE in 1943. A more recent regional observation was found in iNaturalist from 2019 approximately 50 miles southwest of the APE. No tail drags were observed on APE.
Tricolored Blackbird (*Agelaius tricolor*)	CT, CSC	Nests colonially near fresh water in dense cattails or tules, or in thickets of riparian shrubs. Forages in grassland and cropland. Large colonies are often found on dairy farm forage fields.	**Unlikely**. There are three recorded regional observations of this species. The nearest observation of this species occurred approximately ten miles east of the APE in 2000. There is also a recent observation from 2020 approximately 22 miles east of the APE on iNaturalist. No riparian shrubs or dense cattails present on APE. Cameron Creek and the TID Canal do not provide suitable habitat as they lack surface water or riparian shrubs.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Lives in mature elderberry shrubs of the Central Valley and foothills. Adults are active March to June.	**Absent**. The only recorded regional observation of this species occurred approximately eight miles northeast of the APE in 1991. The APE is absent of elderberry shrubs that this species requires.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent**. Suitable habitat for the species is absent from the APE and surrounding areas. The soils within the APE are sandy-loam and do not compact like clay to create vernal pools. Further vernal

Species	Status	Habitat	Occurrence on Project Site
			pools were not observed during the field survey.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Occurs in vernal pools, clear to tea-colored water, in grass or mud-bottomed swales, and basalt depression pools.	**Absent**. Suitable habitat for the species is absent from the APE and surrounding areas. The soils within the APE are sandy-loam and do not compact like clay to create vernal pools. Further vernal pools were not observed during the field survey.
Western mastiff bat (*Eumops perotis californicus*)	CSC	Found in open, arid to semi-arid habitats, including dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas, where it feeds on insects in flight. Roosts most commonly in crevices in cliff faces but may also use high buildings and tunnels.	**Unlikely**. There are no cliff faces, high buildings, or tunnels in or nearby the APE that would be suitable habitat for this species.
Western pond turtle (*Emys marmorata*)	CSC	An aquatic turtle of ponds, marshes, slow-moving rivers, streams, and irrigation ditches with riparian vegetation. Requires adequate basking sites and sandy banks or grassy open fields to deposit eggs.	**Unlikely**. There is one recorded regional observation of this species with an unknown location in the vicinity of Visalia in 1879. The only creek beds or canals nearby have been historically dry and surrounding areas lack upland habitat required by this species.
Western spadefoot (*Spea hammondii*)	CSC	Prefers open areas with sandy or gravelly soils, in a variety of habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools or temporary wetlands, lasting a minimum of three weeks, which do not contain bullfrogs, fish, or crayfish are necessary for breeding.	**Unlikely**. Suitable habitat for the species is absent from the APE and surrounding areas. The soils within the APE are sandy-loam and do not compact like clay to create vernal pools. There are no vernal pools or temporary wetlands in or near the APE that would provide suitable habitat for this species.
Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	FT, CE	Suitable nesting habitat in California includes dense riparian willow-cottonwood and mesquite habitats along a perennial river. Once a common breeding species in riparian habitats of lowland California, this species currently breeds consistently in only two locations in the State: along the Sacramento and South Fork Kern Rivers.	**Absent**. There is one historical recorded regional observation of this species which occurred in 1919 in the vicinity of Visalia. It is listed as extirpated. There are no willow-cottonwood habitats along a perennial river in or nearby the APE that would provide suitable habitat for this species.

Table 4. List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	*Status*	*Habitat*	*Occurrence on Project Site*
Alkali-sink goldfields (*Lasthenia chrysantha*)	CNPS 1B	Found in vernal pool and wet saline flat habitats. Occurrences documented in the San Joaquin and Sacramento Valleys at elevations	**Absent**. There are six recorded regional observations of this species. The nearest recorded observations of this species occurred four miles west of the APE on an unknown date in the 1990's.

Species	*Status*	*Habitat*	*Occurrence on Project Site*
		below 656 feet. Blooms February - April.	There are no vernal pools or saline flat areas that would be suitable habitat for this species.
Brittlescale (*Atriplex depressa*)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in alkaline or clay soils, typically in meadows or annual grassland in at elevations below 1050 feet. Sometimes associated with vernal pools. Blooms June–October.	**Absent**. There are two recorded regional observations of this species. The nearest recorded observation of this species is a historical occurrence which occurred in the vicinity of Visalia in 1881. The other recorded observation is approximately 13.5 miles northwest of the APE in 1968. The required soils for the species are not present in or near the APE.
Calico monkeyflower (*Diplacus pictus / Mimulus pictus / Eunanus pictus*)	CNPS 1B	Found in the Sierra Nevada foothills and the Tehachapi mountains in bare, sunny, shrubby areas, and around granite outcrops within foothill woodland communities at elevations between 450 feet and 4100 feet. Blooms March – May.	**Absent**. There are two recorded regional observations of this species. The closest observation of this species occurred approximately eight miles west of the APE in 1935. The elevation requirement for this species to occur is not present within the APE. There are no granite outcrops within foothill woodland communities required for this species.
California alkali grass (*Puccinellia simplex*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in saline flats and mineral springs within valley grassland and wetland-riparian communities at elevations below 3000 feet. Blooms March–May.	**Unlikely**. There are five recorded regional observations of this species. The nearest recorded observation of this species occurred approximately nine miles west of the APE in 1925 and is listed as possibly extirpated. Although the APE meets the elevation requirement for this species, but the required soils are absent.
California jewelflower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Found in the San Joaquin Valley and Western Transverse Ranges in sandy soils. Occurs on flats and slopes, generally in non-alkaline grassland at elevations between 230 feet and 6100 feet. Blooms February–April.	**Unlikely**. The only recorded regional observation of this species occurred approximately seven miles southwest of the APE in 1932 and is listed as extirpated. There are no grasslands in or near the APE that would be required for the species.
California satintail (*Imperata brevifolia*)	CNPS 2B	Although this facultative species is equally likely to occur in wetlands and non-wetlands, it is often found in wet springs, meadows, streambanks, and floodplains at elevations below 1600 feet. Blooms September – May.	**Unlikely**. The only recorded regional observation of this species occurred at an unknown location in the vicinity of Visalia in 1895. The creek and canal adjacent to the APE lacked surface water and riparian vegetation.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	CNPS 1B	Found on alkaline or saline soils in vernal pools and playas in grassland at elevations below 4500 feet. Blooms April–May.	**Absent**. The only recorded regional observation of this species occurred approximately 11.5 miles north of the APE in 2015. There are no vernal pools or playas in grassland in or near the APE. The required soils for this species are absent.

Species	*Status*	*Habitat*	*Occurrence on Project Site*
Earlimart orache (*Atriplex cordulata* var. *erecticaulis*)	CNPS 1B	Found in the San Joaquin Valley in saline or alkaline soils, typically within valley and foothill grassland at elevations below 375 feet. Blooms August–September.	**Absent**. There are four recorded regional observations of this species. The nearest recorded observation of this species occurred approximately 11.5 miles northwest of the APE in 2017. The required soils are absent from the APE and surrounding areas.
Greene's tuctoria (*Tuctoria greenei*)	FE, CR, CNPS 1B	Found in the San Joaquin Valley and other parts of California in vernal pools within valley grassland, wetland, and riparian communities at elevations below 3500 feet. Blooms May – September.	**Unlikely**. The only recorded regional observation of this species occurred at an unknown location in the vicinity of Woodlake in 1936 and is listed as extirpated. There are no vernal pools within valley grassland, wetland or riparian communities in or near the APE that would support this species.
Heartscale (*Atriplex cordulata* var. *cordulata*)	CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in saline or alkaline soils within shadescale scrub, valley grassland, and wetland-riparian communities at elevations below 230 feet. Blooms June–July.	**Absent**. The only recorded regional observation of this species occurred at an unknown location in the vicinity of Goshen approximately nine miles west of the APE in 1938. There are no valley grassland or wetland riparian communities that would support this species. The required soils for this species are absent from the APE.
Hoover's spurge (*Euphorbia hooveri*)	FT, CNPS 1B	Found in the San Joaquin Valley and Sacramento Valley in vernal pools within valley grassland, freshwater wetland, and riparian communities at elevations below 800 feet. Blooms July – September.	**Absent**. There are five recorded regional observations of this species. The nearest recorded observation of this species occurred approximately nine miles north of the APE in 2011. There are no vernal pools, freshwater wetland, or riparian communities in or near the APE that would support the species.
Kaweah brodiaea (*Brodiaea insignis*)	CE, CNPS 1B	Found in the Sierra Nevada foothills in foothill woodland and valley grassland communities at elevations between 650 feet and 1650 feet. Blooms May – June.	**Unlikely**. The only recorded regional observation of this species occurred approximately 15 miles northeast of the APE in 1989. There are no valley grassland communities in or near the APE to support the species.
Lesser saltscale (*Atriplex minuscula*)	CNPS 1B	Found in the San Joaquin Valley in sandy, alkaline soils in alkali scrub, valley and foothill grassland, and alkali sink communities at elevations below 750 feet. Blooms April–October.	**Absent**. There are eight recorded regional observations of this species. The nearest recorded observation of this species occurred approximately 9 miles west of the APE in 2002. The required soils for the species are not present in or near the APE.
Recurved larkspur (*Delphinium recurvatum*)	CNPS 1B	Occurs in poorly drained, fine, alkaline soils in grassland and alkali scrub communities at elevations between 100 feet and 2600 feet. Blooms March–June.	**Absent**. There are six recorded regional observations of this species. The nearest contemporary recorded observation of this species occurred approximately 10 miles south of the APE in 2010. The soils required for the species is not present in or near the APE.

Species	*Status*	*Habitat*	*Occurrence on Project Site*
San Joaquin adobe sunburst (*Pseudobahia peirsonii*)	FT, CE, CNPS 1B	Found in the San Joaquin Valley and the Sierra Nevada Foothills in bare dark clay soils in valley and foothill grassland and cismontane woodland communities at elevations between 325 feet and 2950 feet. Blooms March–May.	**Absent**. There are four recorded regional observations of this species. The nearest contemporary recorded observation of this species that has not been extirpated occurred approximately 13.5 miles northeast of the APE in 1992. The soils required for the species are not present in or near the APE.
San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*)	FT, CE, CNPS 1B	Found in the eastern San Joaquin Valley and the Sierra Nevada foothills in vernal pools within valley grassland, freshwater wetland, and wetland-riparian communities at elevations below 2600 feet. Blooms April – September.	**Absent**. There are two recorded regional observations of this species. The nearest contemporary recorded observation of this species that has not been extirpated occurred approximately 9.5 miles north of the APE in 2017. There are no vernal pools, valley grasslands, or freshwater wetlands in or near the APE to support the species.
Sanford's arrowhead (*Sagittaria sanfordii*)	CNPS 1B	Found in the San Joaquin Valley and other parts of California in freshwater-marsh, primarily ponds and ditches, at elevations below 1000 feet. Blooms May–October.	**Absent**. There are two recorded regional observations of this species. The nearest recorded observation of this species occurred approximately ten miles north of the APE in 2018. The creek and canal adjacent to the APE lacked surface water and riparian vegetation.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS 1B	Found in the Sierra Nevada Foothills and the San Joaquin Valley. Occurs in vernal pools, swales, and roadside ditches. Often associated with clay soils in vernal pools within grassland communities. Occurs at elevations between 50 feet and 4160 feet. Blooms April–July.	**Unlikely**. There are 16 recorded regional observations of this species. The nearest recorded contemporary observation of this species occurred approximately nine miles north of the APE in 1992. There are no vernal pools or swales in or near the APE that would support the species.
Striped adobe-lily (*Fritillaria striata*)	CT, CNPS 1B	Found in the Sierra Nevada foothills in adobe soil within valley grassland and foothill woodland communities at elevations below 3300 feet. Blooms February – April.	**Absent**. The only recorded regional observation of this species occurred approximately ten miles east of the APE in 1938 and is now listed as extirpated. The soils required for the species are absent from the APE or surrounding areas.
Subtle orache (*Atriplex subtilis*)	CNPS 1B	Found in the San Joaquin Valley in saline depressions in alkaline soils within valley and foothill grassland communities at elevations below 330 feet. Blooms June–October.	**Absent**. The only recorded contemporary observation of this species in the region occurred approximately 10.5 miles south of the APE in 1999. The soils required for the species are not present in the APE or surrounding areas.
Vernal pool smallscale (*Atriplex persistens*)	CNPS 1B	Occurs in the San Joaquin Valley and Sacramento Valley in alkaline vernal pools at elevations below 375 feet. Blooms June–September.	**Absent**. There are two recorded regional observations of this species. Both observations occurred approximately 12 miles north of the APE in 2010. There are no alkaline vernal pools in or near the APE that would support the species.

Species	*Status*	*Habitat*	*Occurrence on Project Site*
Winter's sunflower (*Helianthus winteri*)	CNPS 1B	Found in the Sierra Nevada foothills on steep, south-facing grassy slopes, rock outcrops, and road-cuts at elevations ranging from 600 feet to 1500 feet. Blooms year-round.	**Absent**. There are eight recorded regional observations of this species. The nearest observation of this species occurred approximately 8.5 miles north of the APE in 2018. There are no south-facing grassy slopes, rock outcrops or road cuts in or near the APE that would support the species.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

Present:	Species observed on the site at time of field surveys or during recent past.
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible:	Species not observed on the site, but it could occur there from time to time.
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent:	Species not observed on the site and precluded from occurring there due to absence of suitable habitat.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
		CCT	California Threatened (Candidate)
		CFP	California Fully Protected
		CSC	California Species of Concern
		CWL	California Watch List
		CR	California Rare

CNPS LISTING

1B	Plants Rare, Threatened, or Endangered in. California and elsewhere.	2B	Plants Rare, Threatened, or Endangered in California, but more common elsewhere.

Impacts and Mitigation

Significance Criteria

CEQA

General plans, area plans, and specific projects are subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment prior to project implementation. Impacts to biological resources are just one type of environmental impact assessed under CEQA and vary from project to project in terms of scope and magnitude. Projects requiring removal of vegetation may result in the mortality or displacement of animals associated with this vegetation. Animals adapted to humans, roads, buildings, and pets may replace those species formerly occurring on a site. Plants and animals that are State and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. Such impacts may be considered either "significant" or "less than significant" under CEQA. According to CEQA, Statute and Guidelines (Association of Environmental Professionals, 2022), "significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory finding of significance" if the project has the potential to:

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

Relevant Goals, Policies, and Laws

The APE falls within Tulare County but will be annexed into the City of Visalia before the start of the Project. The City of Visalia is the only jurisdiction with current applicable goals, policies, and laws.

Visalia City General Plan

6.2 Water Resources

Objective OSC-O-7

Preserve and enhance Planning Area waterways and adjacent corridors as valuable community resources which serve as plant and wildlife habitats, as groundwater recharge facilities, as flood control and irrigation components, and as connections between open space areas.

Policy OSC-P-8

Protect, restore and enhance a continuous corridor of native riparian vegetation along Planning Area waterways, including the St. Johns River; Mill, Packwood, and Cameron Creeks; and segments of other creeks and ditches where feasible, in conformance with the Parks and Open Space diagram of this General Plan.

6.4 Biological Resources

Objective OSC-O-10

Protect and enhance natural vegetation throughout the Planning Area, especially types that are considered sensitive natural communities by the Department of Fish and Game.

Policy OSC-P-28

Protect significant stands of Valley Oak woodlands from further development by designating them for Conservation, creating habitat management plans, where needed, and undertaking restoration activities as appropriate.

Policy OSC-P-31

Protect and enhance habitat for special status species, designated under state and federal law. Require protection of sensitive habitat areas and special status species in new development in the following order: (1) avoidance; (2) onsite mitigation, and (3) offsite mitigation.

Visalia City Oak Tree Ordinance

The City of Visalia has an ordinance preventing the premature removal of native oak trees. The APE hosts 10 Valley oak trees. A table and map of the oak trees within the APE that are subject to this ordinance are available in **Table 2** and **Appendix E**. If oak trees are to be removed, it must comply with the ordinance identified below.

Chapter 12.24 of the **Visalia Municipal Code**, Oak Tree Preservation, provides requirements intended to discourage the premature removal of oak trees.

Section 12.24.020 Definitions.
"Oak Tree" means Valley Oak Tree (*Quercus lobata*), with a trunk diameter of eighteen (18) inches or greater at a point 4.5 feet above the root crown (Also referred to as "18 inches Diameter Breast Height

(D.B.H.)"). "Oak tree" may also mean a "landmark tree." "Landmark tree" means any native or non-native tree recognized by city council resolution for its age, size, location outstanding habitat value, superior beauty, historical, and/or cultural significance.

Section 12.24.030 Oak Tree Removal Permit Required.

A. Any person desiring to destroy or remove an oak tree on private or public property must first apply for and obtain a removal permit. Such application shall be in writing to the city clerk, who shall forward such application to the city manager of the city. The application shall contain the number, size and location of the oak trees and a brief statement of the reason of the requested action. The city manager shall charge a fee for said permit, to be established by the city council's annual designation of city fees.

B. Within five calendar days of receipt of such application, the city manager shall post a notice on the subject tree, in a manner reasonably intended to inform the general public, stating that an application for removal of the tree has been filed and is pending with the city manager. Within fourteen calendar days of receipt of such application, the city manager shall inspect the premises whereon such oak trees are located, and shall issue an intended decision in writing as to whether or not the application will be approved, and if so, what mitigation shall be required as a condition to approval, consistent with **Section 12.24.035** below; provided, however, that failure to render an intended decision within such period shall not be deemed approval.

C. The city manager shall not grant a removal permit unless one of three findings enumerated in **Section 12.24.035** can be made based on substantial evidence and, where necessary, expert advice of a certified arborist. The applicant may submit his or her own supporting material, including a report of an independent certified arborist, for consideration by the city manager. However, the City manager shall retain the discretion for determining the weight and value to be given to such independent reports.

D. Upon determination that one of the three findings enumerated in **Section 12.24.035** can be met and a removal permit may be granted, the city manager shall establish mitigation requirements in a manner consistent with the policy to be developed and implemented pursuant to **Section 12.24.037**. No mitigation shall be required for oak trees removed pursuant to subsections A. or C. of section **12.24.035**, unless the city manager determines that the applicant's negligence or willful conduct contributed to the decline of the health of the oak tree. The mitigation requirements established by the city manager shall attach to the permit as conditions and shall be enforceable as a lien against the applicant's real property. In no event shall the availability of mitigation measures, or the willingness of the applicant to agree to such measures, be a factor in determining whether removal of the tree is warranted. (Ord. 2007-02 § 2 (part), 2007; Ord. 9907 § 2 (part), 1999)

12.24.037 Mitigation requirements.

In recognition and furtherance of the purposes of this Chapter, as enumerated in Section 12.24.010, it is the policy of the City of Visalia that property owners who are granted a permit to remove an oak tree pursuant to Subparagraph B. of section 12.24.035 offset the loss of the oak tree by either replacing the oak tree removed with new oak trees on the same property (in-kind mitigation) or by paying mitigation fees intended to be used for the establishment of new oak trees on other property or on public property for the benefit of the general public (in-lieu mitigation). In furtherance of this policy, the city manager shall develop an Oak Tree Mitigation Policy establishing in-kind and in-lieu mitigation measures to be required for oak tree removals. The Oak Tree Mitigation Policy, and any subsequent amendment thereto, shall be submitted to the city council for approval by resolution. (Ord. 2007-02 § 2 (part), 2007)

Threatened and Endangered Species

Permits may be required from the USFWS and/or CDFW if activities associated with a project have the potential to result in the "take" of a species listed as threatened or endangered under the federal and/or state Endangered Species Acts. Take is defined by the State of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). Take is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). CDFW and USFWS are responsible agencies under CEQA and National Environmental Policy Act (NEPA). Both agencies review CEQA and NEPA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

Designated Critical Habitat

When species are listed as threatened or endangered, the USFWS often designates areas of "Critical Habitat" as defined by section 3(5)(A) of the federal Endangered Species Act (ESA). Critical Habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical Habitat is a tool that supports the continued conservation of imperiled species by guiding cooperation with the federal government. Designations only affect federal agency actions or federally funded or permitted activities. Critical Habitat does not prevent activities that occur within the designated area. Only activities that involve a federal permit, license, or funding and are likely to destroy or adversely modify Critical Habitat will be affected.

Migratory Birds

The Federal Migratory Bird Treaty Act (MBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the U.S. is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all bird's native to the U.S., even those that are non-migratory. The MBTA encompasses whole birds, parts of birds, and bird nests and eggs. Additionally, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the MBTA (Section 3513), as well as any other native non-game bird (Section 3800).

Birds of Prey

Birds of prey are protected in California under provisions of Fish and Game Code (Section 3503.5), which states that it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks and eagles) or Strigiformes (owls), as well as their nests and eggs. The bald eagle and golden eagle are afforded additional protection under the federal Bald and Golden Eagle Protection Act (16 USC 668), which makes it unlawful to kill birds or their eggs.

Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of "take" by the CDFW.

Wetlands and other "Jurisdictional Waters"

Natural drainage channels and adjacent wetlands may be considered "waters of the U.S." or "jurisdictional waters" subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the U.S. under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e., the bulleted items above).

As determined by the U.S. Supreme Court in its 2001 Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated Carabell/Rapanos decision, the Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water. Furthermore, the Supreme Court clarified that the U.S. Environmental Protection Agency (EPA) and the USACE will not assert jurisdiction over ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE regulates the filling or grading of Waters of the United States. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high-water marks" on opposing channel banks. All activities that involve the discharge of dredge or fill material into Waters of the United States are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that results in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet State water quality standards.

Under the Porter-Cologne Water Quality Control Act of 1969, the SWRCB has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("Waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the United States require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those that are not also Waters of the United States., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB. The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one acre or more of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the United States. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a notification of a Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates those certain measures will be implemented to protect the habitat values of the lake or drainage in question.

Potentially Significant Project-Related Impacts and Mitigation

Species identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations by CDFW or USFWS that have the potential to be impacted by the Project are identified below with corresponding mitigation measures.

Project-Related Mortality and/or Disturbance of Nesting Raptors, Migratory Birds, and Special Status Birds

The APE contains suitable nesting and/or foraging habitat for a variety of avian species. Swainson's Hawk was identified as the only special status species likely to occur within the APE. Birds nesting within the APE during construction have the potential to be injured or killed by Project-related activities. In addition to the direct "take" of nesting birds, nesting birds within the APE or adjacent areas could be disturbed by Project-related activities resulting in nest abandonment. Projects that adversely affect the nesting success of raptors and migratory birds or result in the mortality of individual birds is considered a violation of State and federal laws and are considered a potentially significant impact under CEQA.

Implementation of the following measures will reduce potential impacts to nesting raptors, migratory birds, and special status birds to a less than significant level under CEQA and ensure compliance with State and federal laws protecting these avian species.

Mitigation. The following measures will be implemented prior to the start of construction:

> **Mitigation Measure BIO-1a (*Avoidance*):** The Project's construction activities will occur, if feasible, between September 16 and January 31 (outside of nesting bird season) in an effort to avoid impacts to nesting birds.
>
> **Mitigation Measure BIO-1b (*Pre-construction Surveys*):** If activities must occur within nesting bird season (February 1 to September 15), a qualified biologist would conduct pre-construction surveys for Swainson's hawk nests onsite and within a 0.5-mile radius. This survey would be conducted in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee, 2000) or current guidance. The pre-construction survey would also provide a presence/absence survey for all other nesting birds within the APE and an additional 50 feet, no more than 7 days prior to the start of construction. All raptor nests would be considered "active" upon the nest-building stage.
>
> **Mitigation Measure BIO-1c (*Establish Buffers*):** On discovery of any active nests or breeding colonies near work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW and/or USFWS guidelines and/or the biology of the species in question. Construction buffers will be identified with flagging, fencing, or other easily visible means, and will be maintained until the biologist has determined that the nestlings have fledged and are no longer dependent on the nest.

Project-Related Mortality and/or Disturbance of Bats

Pallid bat was identified as the only special status bat species possible to occur within the APE. Roosting habitat becomes especially sensitive to bat populations during the maternity season (March 1 to September 30) while pups are maturing.

A pre-construction focused survey for bats would be required to identify if Project activities would impact existing bat habitat, presence of high-quality roosting habitat, and/or foraging areas within the APE. Existing oak and agricultural trees within the APE may contain hollowed out tree cavities that could potentially be used as roosting habitat for bat species.

Implementation of the following measures will reduce potential impacts to roosting and foraging bats to a less than significant level under CEQA and ensure compliance with State and federal laws protecting these bat species.

> **Mitigation Measure BIO-2a (*Avoidance*):** The Project's construction activities will occur, if feasible, between November 1 and February 28 (outside of bat maternity season) in an effort to avoid impacts to maternity roosts.
>
> **Mitigation Measure BIO-2b (*Pre-Construction Survey*):** A pre-construction focused survey for bats will be performed if construction activities fall between March 1 and September 30 (bat maternity season) and include tree removal. The survey will be focused on trees to be removed during construction and be conducted by a qualified biologist within (7) seven days prior to tree removal.
>
> **Mitigation Measure BIO-2c (*Establish Buffers*):** On discovery of any bat roosts near work areas, a qualified biologist should determine appropriate construction setback distances (buffer zones) based on applicable CDFW and/or USFWS guidelines, if appropriate. Construction buffers will be identified with flagging, fencing, or other easily visible means, and should be maintained until the biologist has determined that the roost will no longer be impacted by construction.
>
> **Mitigation Measure BIO–2d (*Operational Hours*):** Construction activities will be limited to daylight hours to reduce potential impacts to special status bats that could be foraging onsite.

Project-Related Mortality and/or Disturbance of Northern California legless lizard

The APE contains suitable habitat for the species, Northern California legless lizard. The biological survey was conducted during the daytime and no individuals were observed. This species is known to forage in loose soil and leaf litter during the day and is occasionally observed on the surface at dusk and at night. There are multiple areas within the APE with leaf litter that would be suitable habitat for the species. Projects that adversely affect the success or result in the mortality of individual special status herpetofauna is considered a violation of State and federal laws and are considered a potentially significant impact under CEQA.

Implementation of the following measures will reduce potential impacts to special status herpetofauna, including Northern California legless lizard, to a less than significant level under CEQA will ensure compliance with State and federal laws protecting these herpetofauna species.

Mitigation. The following measures would be implemented prior to the start of construction:

> **Mitigation Measure BIO-3a (*Avoidance*):** The Project's construction activities will occur, if feasible, where discing or ground disturbance has previously occurred and avoid areas that contain loose soil and leaf litter.
>
> **Mitigation Measure BIO-3b (*Pre-construction Surveys*):** If activities must occur in areas that contain loose soil and leaf litter a qualified biologist will conduct pre-construction surveys within 48 hours prior to beginning ground disturbing activities. Any loose substrate in which lizards could bury themselves will be gently raked with a hand tool (e.g., a garden rake) to a depth of two inches to locate any lizards that could be under the surface.

Mitigation Measure BIO-3c (*Consulting Agencies*): On discovery of any lizards, the biologist will consult CDFW and/or USFWS to determine adequate buffers and mitigation since no guidelines currently exist for this species.

Less Than Significant Project-Related Impacts

Project-Related Impacts to Special Status Animal Species Absent From, or Unlikely to Occur on, the Project Site

Of the 23 regionally occurring special status animal species, 21 are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat. These species include: American badger, blunt-nosed leopard lizard, Burring Owl, California red-legged frog, California tiger salamander, Delta smelt, foothill yellow-legged frog, hardhead, giant gartersnake, Loggerhead Shrike, northern leopard frog, pallid bat, San Joaquin kit fox, Tipton kangaroo rat, Tricolored Blackbird, Valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, western mastiff bat, western pond turtle, western spadefoot, and Western Yellow-Billed Cuckoo.

Since it is unlikely that these species would occur onsite, implementation of the Project would have no impact on these 21 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

Project-Related Impacts to Special Status Plant Species Absent From, or Unlikely to Occur on, the Project Site

Of the 22 regionally occurring special status plant species, 22 are considered absent from or unlikely to occur within the APE due to past or ongoing disturbance and/or the absence of suitable habitat. These species include: alkali-sink goldfields, brittlescale, calico monkeyflower, California alkali grass, California jewelflower, California satintail, Coulter's goldfields, Earlimart orache, Greene's tuctoria, heartscale, Hoover's spurge, Kaweah brodiea, lesser saltscale, recurved larkspur, San Joaquin adobe sunburst, San Joaquin Valley Orcutt grass, Sanford's Arrowhead, spiny-sepaled button-celery, stiped adobe-lily, subtle orache, vernal pool, and Winter's sunflower.

Since it is unlikely that these species would occur onsite, implementation of the Project would have no impact on these 22 special status species through construction mortality, disturbance, or loss of habitat. Mitigation measures are not warranted.

Project-Related Impacts to Special Status Fishes Absent From, or Unlikely to Occur on, the Project Site

There are no records of observations of Delta smelt in CNDDB within the quad search of the Project. However, Delta smelt was listed in the IPaC report as Federally Threatened. There is final critical habitat for this species, but the location of the critical habitat is not available.

At the time of the survey, special status fishes are not considered present or likely to occur within the APE. Mitigation measures are not warranted.

Project-Related Impacts to Riparian Habitat and Natural Communities of Special Concern

There are no CNDDB-designated "natural communities of special concern" recorded within the APE or surrounding lands. Mitigation is not warranted.

Project-Related Impacts to Regulated Waters, Wetlands, and Water Quality

Typical wetlands, and vernal pools communities were not observed onsite at the time of the biological survey. Cameron Creek which runs along the eastern and southern portion of the APE will not be impacted by the Project. The TID Canal which runs along the western portion of the APE would have a bridge constructed across the Canal to connect the APE to the adjacent property. The bridge would be approximately 7 feet across by *up to* 60 feet wide and would be located near Lot 31. Since the TID canal connects to the Kaweah River and Cameron Creek which are jurisdictional waters, it may be considered jurisdictional by regulatory agencies. If the agencies determine the canal to be jurisdictional, an aquatic resource delineation would be performed, and all required permits would be obtained before bridge work begins.

Since construction will involve ground disturbance over an area greater than one acre, the Project will also be required to obtain a Construction General Permit under the Construction Storm Water Program administered by the RWQCB. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) to ensure construction activities do not adversely affect water quality.

Project-Related Impacts to Wildlife Movement Corridors and Native Wildlife Nursery Sites

The APE does contain features that would be likely to function as wildlife movement corridors. However, the APE and surrounding lands are very open and expansive, and it is unlikely construction would affect animal dispersion. Therefore, the Project will have no impact on wildlife movement corridors, and no additional mitigation measures are warranted.

Project-Related Impacts to Critical Habitat

Designated critical habitat is absent from the APE and surrounding lands. Therefore, there will be no impact to critical habitat, and mitigation is not warranted.

Local Policies or Habitat Conservation Plans

The Project appears to be consistent with the goals and policies of the City of Visalia General Plan. The Project does intend to remove or disturb oak trees. If trees were to be removed appropriate tree removal permits and mitigation would be required based on the City of Visalia Oak Tree Ordinance. There are no known habitat conservation plans or a Natural Community Conservation Plans in the APE.

III. References

Association of Environmental Professionals. (2022). *2022 California Environmnetal Quality Act Statute & Guidelines*. Retrieved April 2022

Baldwin, B., Goldman, D. H., Keil, D., Patterson, R., Rosatti, T., & Wilken, D. (2012). *The Jepson Manual; Vascular Plants of California, second edition*. Berkeley: University of California Press. Retrieved April 2022

Calflora. (2022). Retrieved April 2022, from Calflora Information on California Plants for Education, Research and Conservation: http://www.calflora.org/

California Department of Fish and Wildlife. (2012). *Staff Report on Burrowing Owl Mitigation*. Retrieved April 2022

California Department of Fish and Wildlife. (2022). *California Natural Diversity Database (CNDDB)*. Retrieved April 2022

California Native Plant Society. (2022). Retrieved April 2022, from Inventory of Rare and Endangered Vascular Plants of California: http://www.rareplants.cnps.org/

Department of Water resources (DWR). (2016). *Bulletin 118: California's Groundwater, Interim Update*. Retrieved May 2022

DWR. (2022). Retrieved April 2022, from Groundwater Basin Boundary Assessment Tool (BBAT): http://gis.water.ca.gov/app/bbat/

eBird, Cornell Lab of Ornithology. (2022). Retrieved April 2022, from eBird: An online database of bird distribution and abundance: https://ebird.org/

Jepson Flora Project (eds.). (2022). Retrieved April 2022, from Jepson eFlora: http://ucjeps.berkeley.edu/eflora/

Nafis, G. (2022). Retrieved April 2022, from CaliforniaHerps: A Guide to the Amphibians and Reptiles of California: http://www.californiaherps.com/

National Wetlands Inventory (NWI) map. (2022). Retrieved April 2022, from http://fws.gov/wetlands/Data/Mapper.html

NatureServe Explorer. (2022). *An Online Encyclopedia of Life*. Retrieved April 2022, from http://explorer.natureserve.org/

Shuford, W., & Gardali, T. (2008). *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1*. Camarillo and Sacramento, CA: Western Field Ornithologists and California Department of Fish and Game. Retrieved May 2022

State Water Resources Control Board (SWRCB). (2019, April). State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State. Retrieved April 2022

Swainson's Hawk Technical Advisory Committee. (2000, May). Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. CA: CDFW. Retrieved April 2022

The California Burrowing Owl Consortium. (1993). *Burrowing Owl Survey Protocol and Mitigation Guidelines.* Retrieved May 2022

The City of Visalia. (2022). *General Plan*. Retrieved May 2022, from The City of Visalia: https://www.visalia.city/depts/community_development/planning/gp.asp

The City of Visalia. (2022). *Valley Oak Tree Ordinance*. Retrieved May 2022, from The City of Visalia: https://www.visalia.city/depts/public_works/urban_forestry/valley_oak_ordinance_.asp

United States Army Corps of Engineers. (1987). *Corps of Engineers Wetlands Delineation Manual*. Department of the Army. Retrieved May 2022

United States Department of Agriculture, Natural Recources Conservation Service. (2019). *The Plants Database*. Retrieved April 2022, from http://plants.sc.egov.usda.gov/java/

United States Department of Agriculture, Natural Resources Conservation Service (NRCS). (2022). *Custom Soil Resources Report, California*. Retrieved April 2022, from http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

United States Environmental Protection Agency. (2022). Retrieved April 2022, from Waters GeoViewer: https://www.epa.gov/waterdata/waters-geoviewer

United States Fish and Wildlife Service. (1998). *Recovery Plan for Upland Species of the San Joaquin Valley, California*. Retrieved April 2022

United States Fish and Wildlife Service. (2022). *Environmental Conservation Online System (ECOS)*. Retrieved April 2022, from https://ecos.fws.gov/ecp/

United States Fish and Wildlife Service. (2022). *Information on Planning and Consultation (IPaC)*. Retrieved April 2022, from https://ecos.fws.gov/ipac/

WeatherWX. (2022). *Tulare County, California Climate Averages*. Retrieved May 2022, from Tulare County, California Climate Averages: https://www.weatherwx.com/hazardoutlook/ca/tulare+county.html

Wilkerson, R., & Siegel, R. (2010). Assessing changes in the distribution and abundance of burrowing owls in California, 1993-2007. *Bird Populations*, 10:1-36. Retrieved May 2022

Appendix A: Photos of the Project Area

DR HORTON

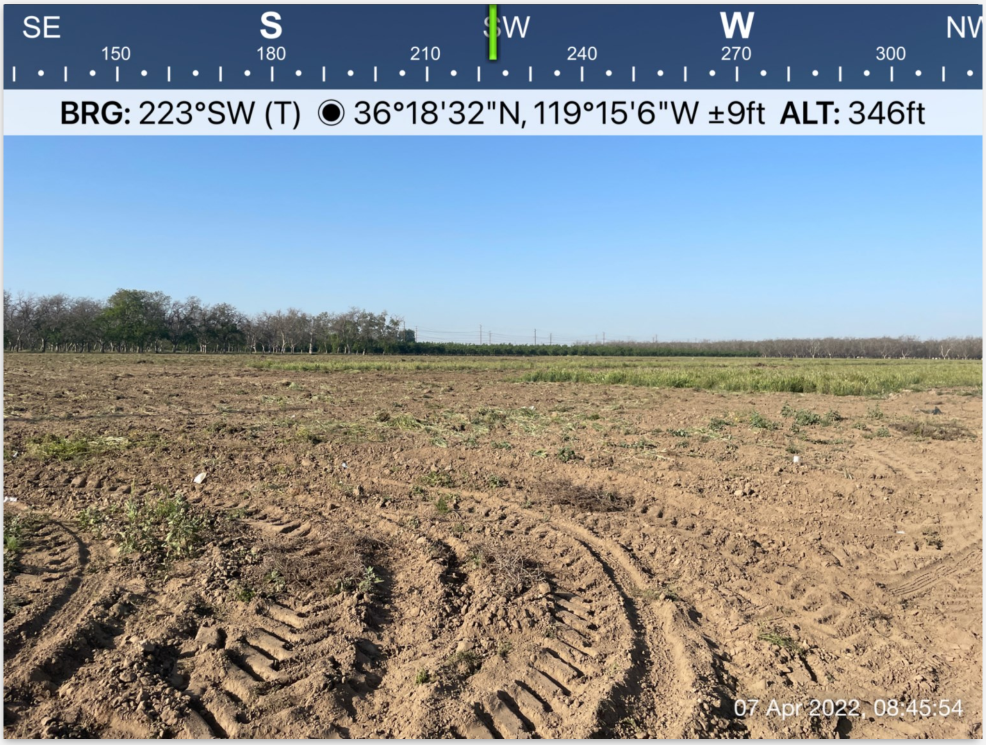
PEARL WOODS SUBDIVISION PROJECT

Photograph 1

The northwestern section of the APE was being disced at the time of the survey. An indication that this area is subject to frequent disturbance.

Photograph 2

Overview of the APE.



Photograph 3

Another overview of the APE.

Photograph 4

The Tulare Irrigation District Canal that runs along the western portion of the APE. A bridge will be built across this section of the canal.

Photograph 5

The northern boundary of the APE. Photo taken facing west.

Photograph 6

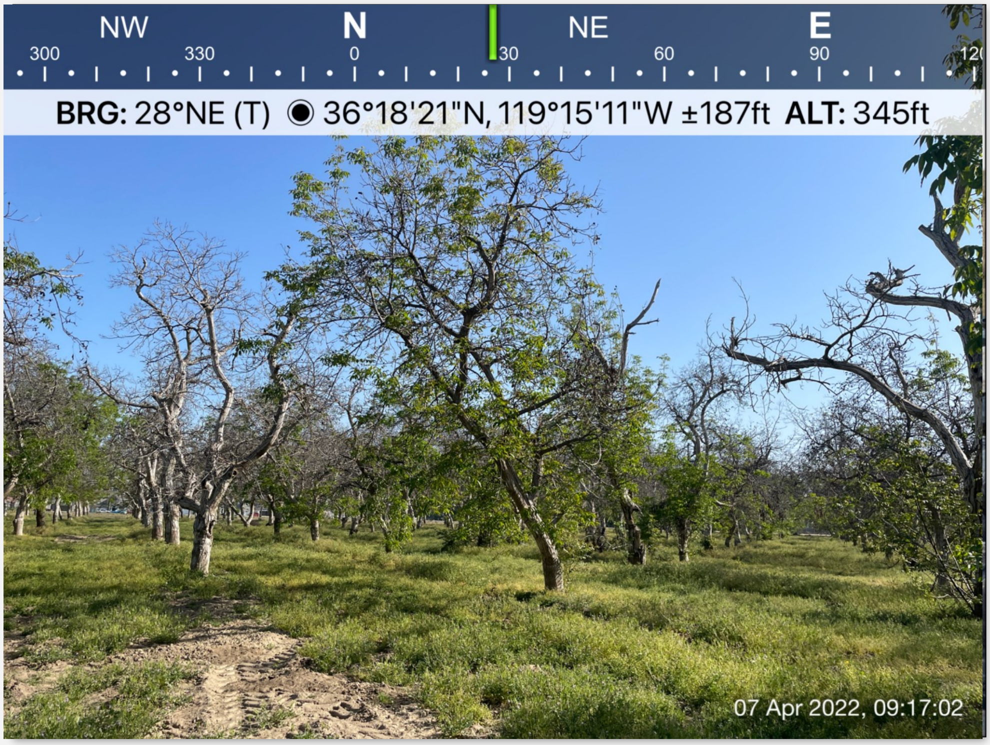
The western boundary of the APE. Photo taken facing north.

Photograph 7

The southern boundary of the APE. Photo taken facing east.

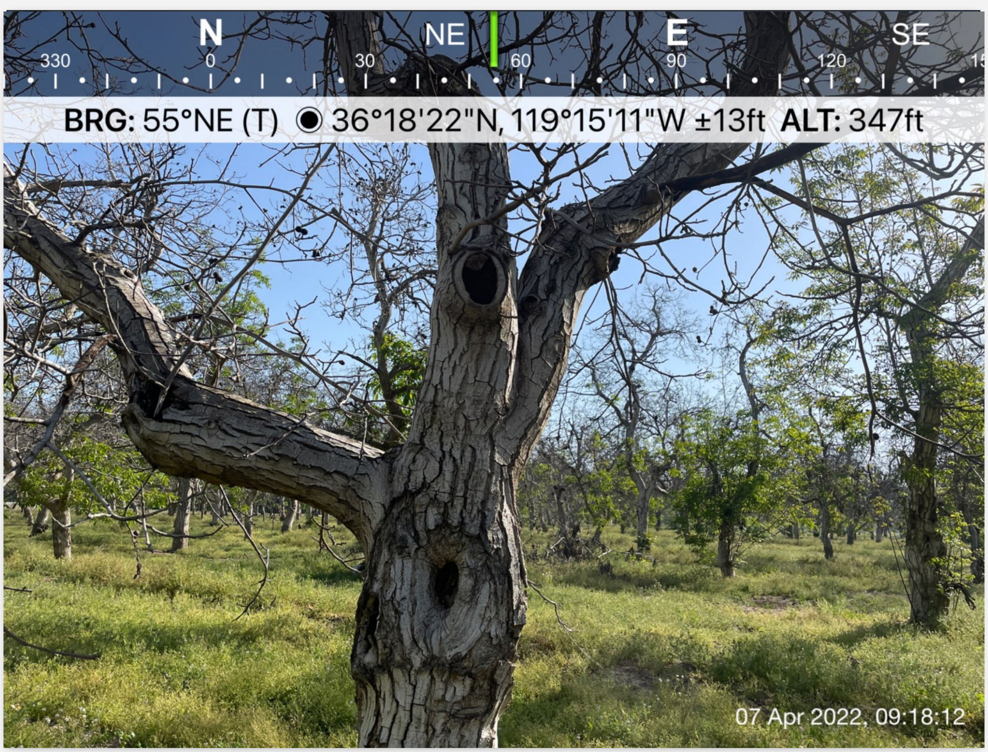
Photograph 8

The eastern boundary of the APE. Photo taken facing south.



Photograph 9

Overview of an orchard found within the APE.



Photograph 10

Example of a tree within the orchard that has cavities. Trees with cavities could potentially be used by roosting bats or nesting birds.

Photograph 11

Overview of Cameron Creek that was dry at the time of the biological survey. The creek runs along the eastern and southern boundaries of the APE.

Photograph 12

Overview of a small mammal burrow consistent with California ground squirrel present within the Action APE.

Photograph 13

A valley oak tree (Quercus lobata) within the APE located along the southern boundary next to Cameron Creek. All oak trees within the APE were measured for diameter at breast height (DBH).

Photograph 14

Another example of valley oak trees found within the APE.

Photograph 15

Surrounding agricultural orchards outside of the APE.

Photograph 16

Surrounding residential development adjacent to the northern boundary of the APE.

Appendix B: CNDDB 12-Quad Search

DR HORTON

PEARL WOODS SUBDIVISION PROJECT

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Visalia (3611933) OR Exeter (3611932) OR Traver (3611944) OR Monson (3611943) OR Ivanhoe (3611942) OR Woodlake (3611941) OR Rocky Hill (3611931) OR Lindsay (3611921) OR Cairns Corner (3611922) OR Tulare (3611923) OR Paige (3611924) OR Goshen (3611934))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali-sink goldfields *Lasthenia chrysantha*	PDAST5L030	None	None	G2	S2	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
An andrenid bee *Andrena macswaini*	IIHYM35130	None	None	G2	S2	
brittlescale *Atriplex depressa*	PDCHE042L0	None	None	G2	S2	1B.2
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
calico monkeyflower *Diplacus pictus*	PDSCR1B240	None	None	G2	S2	1B.2
California alkali grass *Puccinellia simplex*	PMPOA53110	None	None	G3	S2	1B.2
California jewelflower *Caulanthus californicus*	PDBRA31010	Endangered	Endangered	G1	S1	1B.1
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California satintail *Imperata brevifolia*	PMPOA3D020	None	None	G4	S3	2B.1
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	None	G2	S1S2	
Earlimart orache *Atriplex cordulata var. erecticaulis*	PDCHE042V0	None	None	G3T1	S1	1B.2
foothill yellow-legged frog *Rana boylii*	AAABH01050	None	Endangered	G3	S3	SSC
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
Great Valley Valley Oak Riparian Forest *Great Valley Valley Oak Riparian Forest*	CTT61430CA	None	None	G1	S1.1	
Greene's tuctoria *Tuctoria greenei*	PMPOA6N010	Endangered	Rare	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
heartscale *Atriplex cordulata var. cordulata*	PDCHE040B0	None	None	G3T2	S2	1B.2
Hoover's spurge *Euphorbia hooveri*	PDEUP0D150	Threatened	None	G1	S1	1B.2
Hopping's blister beetle *Lytta hoppingi*	IICOL4C010	None	None	G1G2	S1S2	
Kaweah brodiaea *Brodiaea insignis*	PMLIL0C060	None	Endangered	G1	S1	1B.2
lesser saltscale *Atriplex minuscula*	PDCHE042M0	None	None	G2	S2	1B.1
loggerhead shrike *Lanius ludovicianus*	ABPBR01030	None	None	G4	S4	SSC
molestan blister beetle *Lytta molesta*	IICOL4C030	None	None	G2	S2	
Moody's gnaphosid spider *Talanites moodyae*	ILARA98020	None	None	G1G2	S1S2	
Northern California legless lizard *Anniella pulchra*	ARACC01020	None	None	G3	S3	SSC
Northern Claypan Vernal Pool *Northern Claypan Vernal Pool*	CTT44120CA	None	None	G1	S1.1	
Northern Hardpan Vernal Pool *Northern Hardpan Vernal Pool*	CTT44110CA	None	None	G3	S3.1	
northern leopard frog *Lithobates pipiens*	AAABH01170	None	None	G5	S2	SSC
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
recurved larkspur *Delphinium recurvatum*	PDRAN0B1J0	None	None	G2?	S2?	1B.2
San Joaquin adobe sunburst *Pseudobahia peirsonii*	PDAST7P030	Threatened	Endangered	G1	S1	1B.1
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S2	
San Joaquin Valley Orcutt grass *Orcuttia inaequalis*	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
striped adobe-lily *Fritillaria striata*	PMLIL0V0K0	None	Threatened	G1	S1	1B.1
subtle orache *Atriplex subtilis*	PDCHE042T0	None	None	G1	S1	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
Sycamore Alluvial Woodland *Sycamore Alluvial Woodland*	CTT62100CA	None	None	G1	S1.1	
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	AMAFD03152	Endangered	Endangered	G3T1T2	S1S2	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Tulare cuckoo wasp *Chrysis tularensis*	IIHYM72010	None	None	G1G2	S1S2	
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2T3	S3	
Valley Sacaton Grassland *Valley Sacaton Grassland*	CTT42120CA	None	None	G1	S1.1	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool smallscale *Atriplex persistens*	PDCHE042P0	None	None	G2	S2	1B.2
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G4G5T4	S3S4	SSC
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G2G3	S3	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Winter's sunflower *Helianthus winteri*	PDAST4N260	None	None	G2?	S2?	1B.2

Record Count: 54

Appendix C: IPaC Search

DR HORTON

PEARL WOODS SUBDIVISION PROJECT

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: April 26, 2022
Project Code: 2022-0035894
Project Name: Pearl Woods Subdivision

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0035894
Event Code: None
Project Name: Pearl Woods Subdivision
Project Type: New Constr - Above Ground
Project Description: New subdivision will be constructed within the project area.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.307298,-119.25014188158121,14z

Counties: Tulare County, California

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. 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.

Mammals

NAME	STATUS
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency:	Provost & Pritchard Consulting Group
Name:	Rene De La Fuente
Address:	400 E Main St
Address Line 2:	3rd Floor
City:	Visalia
State:	CA
Zip:	93291
Email	rdelafuente@ppeng.com
Phone:	5623602972

Appendix D: NRCS Soils Report

DR HORTON

PEARL WOODS SUBDIVISION PROJECT

United States Department of Agriculture

NRCS

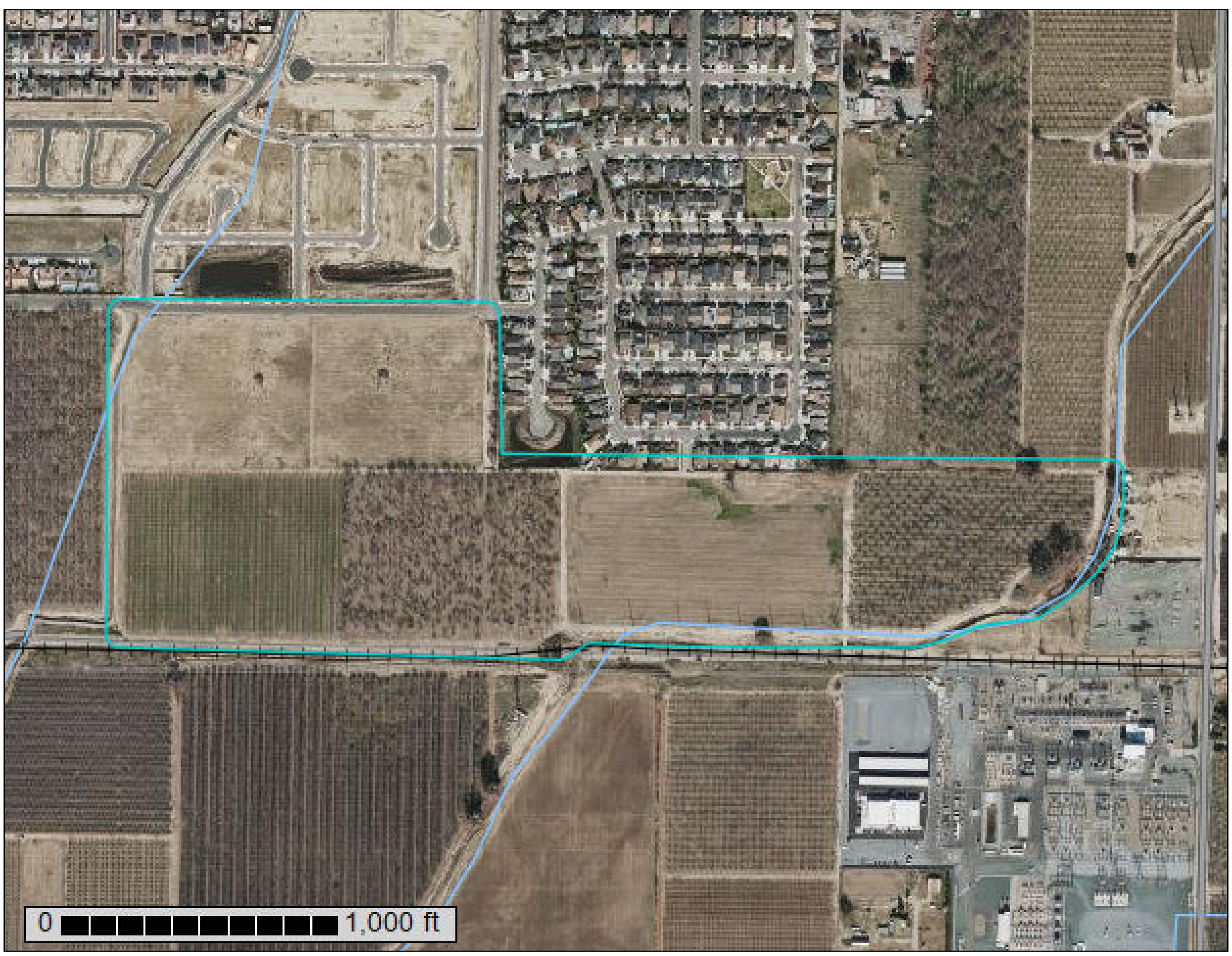
Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Tulare County, Western Part, California

Pearl Woods Subdivision Project



April 26, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:6,170 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
Area of Interest (AOI)

Soils
Soil Map Unit Polygons
Soil Map Unit Lines
Soil Map Unit Points

Special Point Features
Blowout
Borrow Pit
Clay Spot
Closed Depression
Gravel Pit
Gravelly Spot
Landfill
Lava Flow
Marsh or swamp
Mine or Quarry
Miscellaneous Water
Perennial Water
Rock Outcrop
Saline Spot
Sandy Spot
Severely Eroded Spot
Sinkhole
Slide or Slip
Sodic Spot
Spoil Area
Stony Spot
Very Stony Spot
Wet Spot
Other
Special Line Features

Water Features
Streams and Canals

Transportation
Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background
Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 15, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 30, 2021—Feb 6, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
122	Grangeville sandy loam, drained, 0 to 2 percent slopes	45.0	59.8%
130	Nord fine sandy loam, 0 to 2 percent slopes	30.2	40.2%
Totals for Area of Interest		**75.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Tulare County, Western Part, California

122—Grangeville sandy loam, drained, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp4s
Elevation: 190 to 400 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Grangeville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grangeville

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

Ap - 0 to 16 inches: sandy loam
Bg - 16 to 27 inches: sandy loam
2C - 27 to 67 inches: stratified loamy sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: A
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: Yes

Minor Components

Yettem

Percent of map unit: 3 percent
Landform: Flood plains, alluvial fans
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Tujunga

Percent of map unit: 3 percent
Landform: Flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Grangeville, saline-sodic

Percent of map unit: 2 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Nord

Percent of map unit: 1 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Hanford

Percent of map unit: 1 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

130—Nord fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp51
Elevation: 190 to 520 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Nord and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nord

Setting

Landform: Alluvial fans, flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Alluvium derived from mixed

Typical profile

Ap - 0 to 11 inches: fine sandy loam
C1 - 11 to 38 inches: stratified sandy loam to loam
C2 - 38 to 50 inches: stratified loamy coarse sand to coarse sandy loam
2Btb - 50 to 72 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches; More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum content: 4 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: B
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Grangeville, saline-sodic

Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Hanford

Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Tujunga

Percent of map unit: 3 percent
Landform: Flood plains
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Tagus

Percent of map unit: 2 percent
Landform: Fan remnants
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Akers

Percent of map unit: 2 percent
Landform: Fan remnants
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Colpien

Percent of map unit: 2 percent
Landform: Fan remnants
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix E: Oak Tree Ordinance Map

DR HORTON

PEARL WOODS SUBDIVISION PROJECT

5/19/2022 G:\DR Horton - 1594\0159421003-Pearl Woods\400 GIS\Map\Pearl_Woods\Pearl_Woods.aprx

Appendix C: Cultural Resources Study

PHASE I SURVEY, PEARL WOODS SUBDIVISION PROJECT, TULARE COUNTY, CALIFORNIA

Prepared for:

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July 2022

PN 36510.20

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MANAGEMENT SUMMARY

A Phase I cultural resources survey was conducted for the Pearl Woods Subdivision Project (Project). The Project area totals approximately 68-acres (ac) and consists of active almond and walnut orchards and fallow agricultural fields at the southeast end of, and just outside, the city limits of Visalia, Tulare County, California. Specifically, the proposed Project is located in Section 3, Township 18 South, Range 25 East, Mount Diablo Base and Meridian (MDBM). The Phase I survey included background research and an intensive pedestrian survey of the entire Project area. ASM Affiliates, Inc. (ASM) conducted this study, with David S. Whitley, Ph.D., RPA, serving as Principal Investigator. The study was undertaken to assist with compliance with the California Environmental Quality Act (CEQA).

A records search of site files and maps related to the Project area and a 0.5-mile (mi) radius surrounding it was obtained by ASM on May 16, 2022, from the Southern San Joaquin Valley Archaeological Information Center (IC), California State University, Bakersfield. The search results indicated the Project area had not been previously surveyed. The results indicated that one linear resource (P-54-004877, Cameron Creek) intersected the study area; however, this was due to inaccuracies in the plotted location, and it is actually entirely outside of the study area. An additional five previous studies had been completed within 0.5-mi of the study area, resulting in the recordation of six cultural resources within that outer radius.

A Sacred Lands File (SLF) search from the Native American Heritage Commission (NAHC) was requested on May 2, 2022 and received on June 29, 2022. The search was negative for sacred sites and tribal cultural resources. ASM sent outreach letters prior to the receipt of the contact list from the NAHC based on a previous contact list from the area. The letters were sent on June 13, 2022. One additional tribe was listed on the contact list received on June 29, 2022, North Fork Mono Tribe, and a letter was sent out that same day to the tribe. As of the writing of this report no responses of been received from any of the contacted tribes.

The Phase I survey fieldwork was conducted on June 15, 2022. The entire 68-ac Project area was surveyed in parallel transects spaced at 15-meter (m) intervals. ASM did not identify any cultural or built environment resources within the Project study area. Cameron Creek (P-54-004877), which was identified by the IC as bisecting the study area, does not exist within the Project area limits.

Based on these findings, the development of the Pearl Woods Subdivision Project will not result in adverse impacts to known significant or unique cultural resources as defined by CEQA. It is recommended, however, that an archaeologist be contacted in the unlikely event that cultural resources are uncovered during the development or use of the property to evaluate the discovery.

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc. (ASM) was retained by Provost & Pritchard Consulting Group to conduct a Phase I cultural resources study for the Pearl Woods Subdivision Project (Project), located in Tulare County, California (Figure 1). The study was undertaken to assist with compliance with the California Environmental Quality Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historical resources do not occur as a result of Project construction.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the study area and/or whether the area had been previously and systematically studied by archaeologists; and,
- An intensive pedestrian inventory of the Project area to identify and record previously undiscovered cultural resources.

David S. Whitley, Ph.D., RPA, served as principal investigator. ASM Associate Archaeologist Robert Azpitarte, B.A., led the fieldwork effort, with assistance in the field from ASM Assistant Archaeologist Margarita Lemus, B.A.

This document constitutes a report on the Phase I survey. Subsequent chapters provide background to the investigation including historic context studies, the findings of the archival records search, Native American correspondence, field methodology, and the fieldwork results. We conclude with management recommendations for the Project area. The records search results and Native American correspondence are included as Confidential Appendix A

1.1 PROJECT LOCATION AND STUDY AREA DESCRIPTION

The Project is located immediately southeast of the city limits of Visalia, Tulare County, California. Specifically, the proposed Project is located in Section 3, Township 18 South, Range 25 East, MDBM, as illustrated on the USGS Visalia and Exeter, California 7.5-minute topographic quadrangles. This places the proposed Project on the open flats of the San Joaquin Valley. Elevation within the Project parcel, which is flat, ranges from 340-feet (ft) above mean sea level (amsl).

The study area is located around the southwest corner of South McAuliff Street and East Cherry Avenue. To the north are both existing and currently in construction residential subdivisions and to the east, west, and south are orchards and undeveloped land. The Southern Pacific Railroad parallels the south side of the southern boundary of the study area, and the Tulare Irrigation Canal is located just outside of the study area on the west. The study area contours along the north bank of Cameron Creek at the southeast corner and the creek parallels the east end of the southern boundary to approximately the midway point before continuing southwest. Currently, the parcel consists of active almond and walnut orchards and agricultural roads.

1.2 PROJECT DESCRIPTION

The Project involves the subdivision and development of the property into 273 single-family residences. The Project would require to be pre-zoned to R 1 5 and annexed into the City of Visalia. Additionally, pursuant to the General Plan and the Waterways and Trails Master Plan, the Project proposes to dedicate the subject property's portion of the Segment 4 Preferred Trail Alignment. The project proposes a regional-serving stormwater drainage basin with its watershed being the quarter-section in which this project is located. This location reduces the necessity of further-increasing diameter storm mains at further-increasing depths, in addition to avoiding crossing under a railroad. Adjacent to the above-mentioned basin and trail, the Project proposes a General Plan-designated Neighborhood Park. The park and basin would be approximately 8.96-ac in size.

1.3 REGULATORY CONTEXT

1.3.1 California Environmental Quality Act

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal National Register of Historic Places (NRHP) criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

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

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

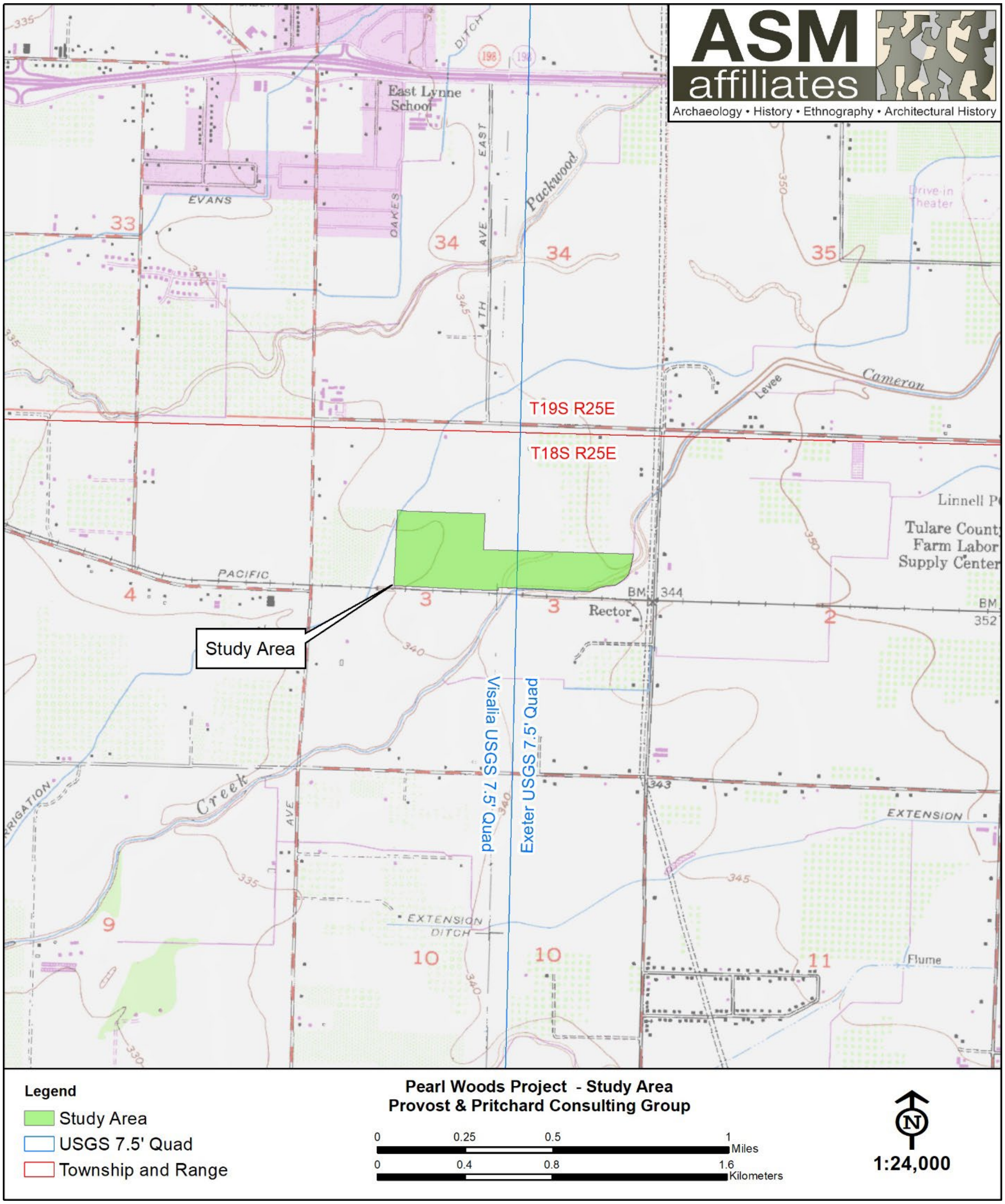

Figure 1. Location of the Pearl Woods Subdivision Project study area, Tulare County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

The elevation of the Project area, which is flat, is approximately 340-ft amsl on the open flats of the San Joaquin Valley just southeast of Visalia, Tulare County, California. Currently, this region can be characterized as a dry open valley bottom now utilized for agriculture. Prior to reclamation and channelization, the region would have been a low-lying, water-rich area characterized by streams, sloughs, marshes, and swamps. Occasionally inundated by floodwaters, in many years portions of this region would have been swampy during the winter rainy season and marsh land during other parts of the year. Historical and recent land use has changed the vegetation that was once present within and near the Project area. The immediate Project location historically most likely fell within the Valley Grassland community, however, with Riparian Woodlands present along streams and freshwater marshes common in the area (see Schoenherr 1992).

A Caltrans geoarchaeological study that included the Project area classified this location as having Moderately High to Very High sensitivity for subsurface sites (Meyer et al. 2010). This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils, and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in seven ordinal classes for sensitivity for buried soils, from Very Low to Very High. Based on the maps, the Project study area is located in a region with Moderately High sensitivity for buried sites.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977), and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous lifeways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. Kroeber (1925), Gayton (1948) and Latta (1977) place the Project area in Telamni territory, and none of them locate historical villages in the general area, however, with village locations instead concentrated to the east, in the foothills, or west, closer to the Tulare Lake shore. The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today, including at the nearby Santa Rosa Rancheria.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake west of the Project area, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flashflood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7500 to 4000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3,800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called “Shoshonean Wedge” in southern California, the Takic-speaking groups that include the Gabrielino/Fernandeño, Tataviam, and Kitanemuk, may have moved into the region at that time (Sutton 2009), rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al. n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W&S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W&S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W&S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W&S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence, and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W&S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the Project area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about A.D. 1860. It included major droughts matched by intermittent "mega-floods," and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions, including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (Whitley et al. 2007). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated towards the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W&S Consultants 2006).

What is then clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierras and the Mojave Desert. Many of these sites are found at locations that lack existing or known historical fresh water sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1500 to 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located west of the current Project area, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California, suggesting that ethnographic life-ways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms appears to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007), environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley and determining how these trends (if present) correlate with those seen elsewhere is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). But the Mexican government did not grant ranchos in the San Joaquin Valley until the early 1840s, and even then these did not result in significant permanent settlement. The *Laguna de Tache Rancho* was granted by Governor Pio Pico in 1846 to Manuel de Jesus Castro, a former captain in the Mexican army. The rancho extended for 26 mi. down the north bank of the Kings River from modern Kingsburg to approximately Riverdale. It was sometimes called the "River Ranch." Castro's ownership of the Laguna de Tache Rancho grant was confirmed by the U.S. Public Land Commission in 1866, at which point it was sold to Jeremiah Clark.

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd 1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep, and pigs (Boyd 1997).

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

Following the passage of statewide 'No-Fence' laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring one such grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley, and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad (SPRR) reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting both agriculture and oil production (Pacific Legacy 2006).

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (3 ft. wide by 2 ft. deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square miles. Miller and Lux's impact extended beyond Kern County, however. They recognized early-on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 mi. of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River.

The San Joaquin Valley was dominated by agricultural pursuits until the oil boom of the early 1900s, which saw a shift some parts of the region, as some reclaimed lands previously used for farming were leased to oil companies. Nonetheless, the shift of the San Joaquin Valley towards oil production did not halt the continued growth of agriculture (Pacific Legacy 2006). The Great Depression of the 1930s brought with it the arrival of great number of migrants from the drought-affected Dust Bowl region, looking for agricultural labor. These migrants established temporary camps in the valley, staying on long past the end of the drought and the Great Depression, eventually settling in towns such as Bakersfield where their descendants live today (Boyd 1997).

The town of Visalia, originally called Four Creeks, was founded in 1852 and is believed to be the earliest settlement in the San Joaquin Valley between Los Angeles and the Stockton area. It was made the county seat of Tulare County in 1853 and became a stop on the Butterfield Overland Mail stage route, which ran from Los Angeles to Stockton, in 1858. Camp Babbitt was created 1-mi outside of Visalia during the Civil War, due to a significant number of southern sympathizers in the area. In 1874, the town was incorporated. Visalia has continued to grow due to industry and agriculture in the surrounding area, currently having a population of over 130,000 people (City of Visalia n.d.).

3. ARCHIVAL RECORDS SEARCH AND TRIBAL CORRESPONDENCE

3.1 ARCHIVAL RECORDS SEARCH

The Project began with an archival records search conducted by the staff of the Southern San Joaquin Valley Information Center (IC), California State University Bakersfield, on May 16, 2022. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the Project area; (ii) if the study area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the general area within which the Project lies was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest.

According to the IC records search, no previous studies had been conducted in the study area. One linear resource (P-54-004877, Cameron Creek) had been recorded as intersecting the study area; however, this was due to inaccuracies in the plotted location and Cameron Creek is actually located entirely outside of the study area. An additional five previous studies had been completed within 0.5-mi of the study area (Table 1), resulting in the recordation of six resources within that outer radius (Table 2). The results of the records search are available in Confidential Appendix A.

Historical maps that included the Project area were consulted to identify potential historical structures or resources. According to USGS topographic quadrangles, historical aerials, and Google Earth imagery, the Project area has undergone minimal development since at least the early twentieth century.

Table 1. Survey Reports within the 0.5-mi of the Study Area

Report No.	Year	Author (s)/Affiliation	Title
TU-01167	2002	Villacorta, Estella/ GeoTek, Inc.	Section 106 Review, GeoTek Project #0032SA2-017B Caldwell Avenue, Visalia, California 93292
TU-01383	2010	Parr, Robert E./ Cal Heritage	Cultural Resource Assessment for the Southern California Edison Company Rector Substation Waterline Improvement Project near the City of Visalia, Tulare County, California (WO 800249915)
TU-01690	2014	Travers, Aniela/ EBI Consulting	Cultural Resources Survey Farmersville West/CVU3073 28685 Road 148, Visalia, Tulare County, California
TU-01764	2017	Foglia, Shannon E, Cooley, Theodore G., and Miller, Chandra/ AECOM	Cultural Resources Survey Report for the Proposed Southern California Edison North of Magunden Transmission Line Rating Remediation Project, Kern and Tulare Counties, California
TU-01770	2017	Chandler, Evelyn/ Paleo Solutions, Inc.	Archaeological Survey Report for the Southern California Edison Company Transmission Line Rating Remediation (TLRR) Project for the Rector Material Yard, Tulare County, California

Table 2. Resources within the 0.5-mi of the Study Area

Primary #	Type	Description
P-54-004626	Structure	Southern Pacific Railroad
P-54-004832	Structure	Big Creek East & West Transmission Line
P-54-004878	Building	Historic buildings
P-54-004884	Structure	Tulare irrigation canal
P-54-005221	Structure	Rector Substation
P-54-005289	Structure	Bliss Ditch

3.2 TRIBAL CORRESPONDENCE

An SLF search from the NAHC was requested on May 2, 2022 and received on June 29, 2022. The search was negative for sacred sites and tribal cultural resources. ASM sent outreach letters prior to the receipt of the contact list from the NAHC based on a previous contact list from the area. The letters were sent on June 13, 2022. One additional tribe was listed on the contact list received June 29, 2022, North Fork Mono Tribe, and a letter was sent out that same day to the tribe. As of the writing of this report no responses of been received from any of the contacted tribes. The results of the SLF search and tribal correspondence are available in Confidential Appendix A.

4. METHODS AND RESULTS

4.1 FIELD METHODS

The field methods employed included intensive pedestrian examination of the ground surface for evidence of built environment resources and archaeological sites in the form of artifacts, surface features (e.g., bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone). Special attention was paid to any exposed ground surface areas, rodent burrow spoils piles, cut-banks, cleared edges of disturbed areas, and other spots with better ground surface visibility. The survey methodology was designed to include the identification and location of any discovered sites, should they have been present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources, using DPR 523 forms. The Project study area was examined by walking parallel transects spaced 15-m apart.

An intensive Phase I cultural resources survey of the Pearl Woods Subdivision Project study area was conducted on June 15, 2022 by ASM Associate Archaeologist Robert Azpitarte, B.A., with assistance in the field from ASM Assistant Archaeologist Margarita Medina-Lemus, B.A.

4.2 SURVEY RESULTS

The approximately 68-ac Project study area consists of active almond and walnut orchards with dirt agricultural roads (Figure 2 and 3). Surface visibility within the study area was excellent for the Phase I survey.

No prehistoric or historic archaeological resources or built environment resources were identified as a result of the Phase I survey.

Figure 2. Overview of Project study area from the approximate center, looking southwest.

Figure 3. Overview of the Project study area from the southwest corner, looking east-northeast.

5. SUMMARY AND RECOMMENDATIONS

An intensive Phase I cultural resources survey was conducted for the Pearl Woods Subdivision Project, Tulare County, California. A records search conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield indicated that the Project study area had not been previously surveyed. The results indicated that one linear resource (P-54-004877, Cameron Creek) intersected the study area; however, this was due to inaccuracies in the plotted location, and it is actually located entirely outside of the study area.

An SLF search from the NAHC was requested on May 2, 2022 and received on June 29, 2022. The search was negative for sacred sites and tribal cultural resources. ASM sent outreach letters prior to the receipt of the contact list from the NAHC based on a previous contact list from the area. The letters were sent on June 13, 2022. One additional tribe was listed on the contact list received June 29, 2022, North Fork Mono Tribe, and a letter was sent out that same day to the tribe. As of the writing of this report no responses of been received from any of the contacted tribes.

The intensive Phase I pedestrian survey was conducted on June 15, 2022, with parallel transects spaced at 15-m intervals walked across the entire Project study area. No prehistoric or historic archaeological sites or built environment resources were identified within the study area.

5.1 RECOMMENDATIONS

Based on these findings, the development of the Pearl Woods Subdivision Project will not result in adverse impacts to known significant or unique cultural resources as defined by CEQA. It is recommended, however, that an archaeologist be contacted in the unlikely event that cultural resources are uncovered during the development or use of the property to evaluate the discovery.

REFERENCES

Boyd, W.H.

1997 *Lower Kern River Country 1850-1950: Wilderness to Empire*. Kings River Press, Lemoore.

City of Visalia

n.d. History of Visalia. Available online at https://www.visalia.city/about/history_of_visalia.asp; accessed July 8, 2022.

Cook, S.F.

1978 Historical Demography. In *California*, edited by R.F. Heizer, pp. 91-98. Handbook of North American Indians, Volume 8. Smithsonian Institute, Washington, D.C.

Culleton, Brendan J.

2006 Implications of a freshwater radiocarbon reservoir correction for the timing of the late Holocene settlement of the Elk Hills, Kern County, California*. Journal of Science* 33:1331-1339.

Driver, H.E.

1937 Cultural Element Distributions: VI, Southern Sierra Nevada. *University of California Anthropological Records* 1(2):53-154. Berkeley

Elsasser, A.

1962 *Indians of Sequoia and Kings Canyon National Parks*. Sequoia Natural History Association, Three Rivers.

Fenenga, F.

1952 The Archaeology of the Slick Rock Village, Tulare County, California. *American Antiquity* 17:339-347.

Fenenga, G.

1993 Test Excavations at the Witt Site (CA-KIN-32). In *Finding the Evidence: The Quest for Tulare Lake's Archaeological Past*, edited by W.J. Wallace and F.A. Riddell, pp. 25-38. Contributions to Tulare Lake Archaeology II. Tulare Lake Archaeological Research Group, Redondo Beach.

Fredrickson, D.A., and J. Grossman

1977 A San Dieguito Component at Buena Vista Lake, California. *Journal of California and Great Basin Anthropology* 4:173-190.

Gayton, A.H.

1930 Yokuts-Mono Chiefs and Shamans. *University of California Publications in American Archaeology and Ethnology* 24:361-420. Berkeley.

1948 Yokuts and Western Mono Ethnography. *University of California Anthropological Records* 10:1-290. Berkeley.

Gifford, E.W., and W.E. Schenck
1926 Archaeology of the Southern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 23(1):1-122.

Glennan, W.S.
1987a Concave-Based Lanceolate Fluted Projectile Points from California. Prehistory of the Antelope Valley, California: An Overview, edited by R.W. Robinson. *Antelope Valley Archaeological Society, Occasional Papers No. 1*: 21-24.
1987b Evidence for Paleoeastern Culture Type in the Southwestern Great Basin. Prehistory of the Antelope Valley, California: An Overview, edited by R.W. Robinson. *Antelope Valley Archaeological Society, Occasional Papers No. 1*:11-20.

Harrington, John Peabody
n.d. Yokuts ethnographic notes. National Anthropological Archives.

Hewes, G.
1941 Archaeological reconnaissance of the central San Joaquin Valley. *American Antiquity* 7:123-133.

Horne, S.P.
1981 The Inland Chumash: Ethnography, Ethnohistory and Archaeology. Ph.D. dissertation, UCSB. University Microfilms, Ann Arbor.

Jones, T.L., G.M. Brown, L.M. Raab, J.L. McVickar, W.G. Spaulding. D.J. Kennett, A. York, and P.L. Walker
1999 Demographic Crisis in Western North America during the Medieval Climatic Anomaly. *Current Anthropology* 40:137-170.

JRP Historical Consulting
2009 *North Kern Water Storage District, Lateral Canal 8-1: Inventory and Evaluations, Kern County, California*. Prepared for North Kern Water Storage District.

King, C., C. Smith, and T. King
n.d. *Archaeological Report Related to the Interpretation of Archaeological Resources Present at the Vasquez Rocks County Park*. Report on file, SCCIC.

Kroeber, A.L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology, Bulletin 78*. Washington, D.C.

Latta, F.F.
1977 *Handbook of the Yokuts Indians*. Bear State Books, Santa Cruz.

Meyer, J., D. Craig Young, and Jeffrey S. Rosenthal
2010 *Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9.* Submitted to California Department of Transportation.

Moratto, M.
1984 *California Archaeology*. Academic Press, New York.

Morgan, W.A.
1914 *History of Kern County, California with Biographical Sketches*. Historic Record Company, Los Angeles.

Pacific Legacy, Inc.
2006 *Southern San Joaquin Valley Oil Fields Comprehensive Study*. Manuscript on file, BLM Bakersfield office.

Powers, Stephen
1971 The Yokuts Dance for the Dead. In *The California Indians: A Source Book* (second edition), edited by R.F. Heizer and M.A. Whipple, pp. 513-519. University of California Press, Berkeley (original 1877).
1976 *Tribes of California*. University of California Press, Berkeley (original 1877).

Preston, William L.
1981 *Vanishing Landscapes: Land and Life in the Tulare Lake Basin*. University of California Press, Berkeley.

Rosenthal, J.S., G.G. White, and M.Q. Sutton
2007 The Central Valley: A view from the catbird's seat. In *California Prehistory: Colonization, Culture, and Complexity*, edited by T.L. Jones and K.A. Klar, pp. 147-163. AltaMira Press.

Schiffman, R.A., and A.P. Garfinkel
1981 Prehistory of Kern County: An Overview. *Bakersfield College Publications in Archaeology, Number 1*.

Schoenherr, A.A.
1992 *A Natural History of California*. University of California Press, Berkeley.

Siefkin, Nelson
1999 Archaeology of the Redfeldt Mound (CA-KIN-66), Tulare Basin, California. M.A. thesis, Department of Sociology and Anthropology, California State University, Bakersfield.

Sutton, M.Q.
1988a An Introduction to the Archaeology of the Western Mojave Desert, California. *Archives of California Prehistory, No. 14*. Coyote Press, Salinas.
1988b On the Late Prehistory of the Western Mojave Desert. *Pacific Coast Archaeological Society Quarterly* 24(1):22-29.
2009 People and Language: Defining the Takic Expansion into the Southern California. *Pacific Coast Archaeological Society Quarterly* 40(2, 3):31-73.

W&S Consultants
1994 *Phase II Test Excavations and Determinations of Significance at CA-LAN-2133, -2233, -2234, -2235, -2236, -2240, -2241 and -2242, Los Angeles County, California*. Manuscript on file, SCCIC.
1999 *Class III Inventory/Limited Archaeological Testing Program for the Ducor Telephone Project, Kennedy Meadows, Tulare County, California*. Manuscript on file, SCCIC.
2004 *Class II Inventory of the Carrizo Plain National Monument, San Luis Obispo County, California*. Report on file, BLM Bakersfield office.
2006 *Phase II Test Excavations and Determinations of Significance for the Tejon Mountain Village Project, Kern County, California*. Report on file, Tejon Ranch Company.

Wedel, W.
1941 Archaeological Investigations at Buena Vista Lake, Kern County, California. *Bureau of American Ethnology Bulletin* 130.

Whitley, D.S.
1992 Shamanism and Rock Art in Far Western North America. *Cambridge Archaeological Journal* 2(1):89-113.
2000 *The Art of the Shaman: Rock Art of California*. University of Utah Press, Salt Lake City.

Whitley, D.S., and M.P. Beaudry
1991 Chiefs on the Coast: The Development of Complex Society in the Tiquisate Region in Ethnographic Perspective. *The Development of Complex Civilizations in Southeastern Mesoamerica*, edited by W. Fowler, pp. 101-120. CRC Press, Orlando.

Whitley, D.S., G. Gumerman IV, J. Simon, and E. Rose
1988 The Late Prehistoric Period in the Coso Range and Environs. *Pacific Coast Archaeological Society Quarterly* 24(1):2-10.

Whitley, D.S., J. Simon, and J.H.N. Loubser
2007 The Carrizo Collapse: Art and Politics in the Past. In *A Festschrift Honoring the Contributions of California Archaeologist Jay von Werlhof*, edited by R.L. Kaldenberg, pp. 199-208. Maturango Museum Publication 20, Ridgecrest.

Zimmerman, K.L., C.L. Pruett, and M.Q. Sutton
1989 A Clovis-Like Projectile Point from the Southern Sierra Nevada. *Journal of California and Great Basin Anthropology* 11:89-91.

City of Visalia

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May 16, 2022

Big Sandy Rancheria of Western Mono Indians
Elizabeth D. Kipp, Chairperson
PO. Box 337
Auberry, CA 93602

Subject: Invitation for Early Consultation for a Pending Project

Dear Chairperson:

This letter is provided in accordance with the notification procedures prescribed by AB 52 (CEQA-Tribal Cultural Resources). The City of Visalia is in receipt of a project application whose project description is provided below, and which is shown on the enclosed aerial map.

The City of Visalia respectfully requests your review of the project, and invites your comments or request for further coordination if deemed necessary. As you may be aware, AB 52 allows for a 30-day early review period before the City may proceed further in the project entitlement process or an associated CEQA environmental review. The project is described as follows:

> **Annexation No. 2022-05:** A request by D.R. Horton to annex one parcel totaling approximately 67.7 acres into the City limits of Visalia. Upon annexation the area would be zoned R-1-5 (Single Family Residential, 5,000 sq. ft. minimum), QP (Quasi-public zone) and OS (Open Space) which is consistent with the General Plan. The property is located in between South Lovers Lane and Road 148, just south of East Cherry Avenue (APN: 0127-030-038).
>
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If you have any concerns or information regarding archaeological resources or traditional tribal cultural places in or near the Planning Area, or if you would like to be involved in the planning process, please let us know. You can contact me at (559) 713-4031 or e-mail rafael.garcia@visalia.city. We would appreciate receiving your comments by June 15, 2022.

Regards,

RG

Rafael Garcia
Senior Planner

Attachment: Location Map

City of Visalia

315 East Acequia Ave., Visalia, CA 93291

Planning Division

Tel: (559) 713-4359 Fax: (559) 713-4813

May 16, 2022

Dunlap Band of Mono Indians
Benjamin Charley Jr., Tribal Chair
P.O. Box 14
Dunlap, CA 93621

Subject: Invitation for Early Consultation for a Pending Project

Dear Chairperson:

This letter is provided in accordance with the notification procedures prescribed by AB 52 (CEQA-Tribal Cultural Resources). The City of Visalia is in receipt of a project application whose project description is provided below, and which is shown on the enclosed aerial map.

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City of Visalia

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315 East Acequia Ave., Visalia, CA 93291

Tel: (559) 713-4359 Fax: (559) 713-4813

May 16, 2022

Dunlap Band of Mono Indians
Dirk Charley, Tribal Secretary
5509 E. McKenzie Avenue
Fresno, CA 93727

Subject: Invitation for Early Consultation for a Pending Project

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City of Visalia

Planning Division

315 East Acequia Ave., Visalia, CA 93291

Tel: (559) 713-4359 Fax: (559) 713-4813

May 16, 2022

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, CA 93240

Subject: Invitation for Early Consultation for a Pending Project

Dear Chairperson:

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City of Visalia

315 East Acequia Ave., Visalia, CA 93291

Planning Division

Tel: (559) 713-4359 Fax: (559) 713-4813

May 16, 2022

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010
Lake Isabella, CA 93240

Subject: Invitation for Early Consultation for a Pending Project

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Attachment: Location Map

City of Visalia

315 East Acequia Ave., Visalia, CA 93291

Planning Division

Tel: (559) 713-4359 Fax: (559) 713-4813

May 16, 2022

Kern Valley Indian Community
Brandy Kendricks
30741 Foxridge Court
Tehachapi, CA 93561

Subject: Invitation for Early Consultation for a Pending Project

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Attachment: Location Map

City of Visalia

Planning Division

315 East Acequia Ave., Visalia, CA 93291

Tel: (559) 713-4359 Fax: (559) 713-4813

May 16, 2022

Santa Rosa Rancheria Tachi Yokut Tribe
Shana Powers, Cultural Director
P.O. Box 8
Lemoore, CA 93245

Subject: Invitation for Early Consultation for a Pending Project

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Rafael Garcia
Senior Planner

Attachment: Location Map

City of Visalia — *Planning Division*

315 East Acequia Ave., Visalia, CA 93291 — *Tel: (559) 713-4359 Fax: (559) 713-4813*

May 16, 2022

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Tribal Chairperson
P.O. Box 226
Lake Isabella, CA 93240

Subject: Invitation for Early Consultation for a Pending Project

Dear Chairperson:

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315 East Acequia Ave., Visalia, CA 93291 *Tel: (559) 713-4359 Fax: (559) 713-4813*

May 16, 2022

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville, CA 93258

Subject: Invitation for Early Consultation for a Pending Project

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City of Visalia

Planning Division

315 East Acequia Ave., Visalia, CA 93291

Tel: (559) 713-4359 Fax: (559) 713-4813

May 16, 2022

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA 93906

Subject: Invitation for Early Consultation for a Pending Project

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Rafael Garcia
Senior Planner

Attachment: Location Map

Appendix D: Traffic Impact Study

City of Visalia

DR Horton – Pearl Woods Traffic Impact Study

Visalia, CA
July 2022

Prepared for:
D.R. Horton
419 West Murray Avenue
Visalia, CA 93291

Prepared by:
Provost & Pritchard Consulting Group
400 East Main Street, Suite 300
Visalia, CA 93291-6337

Report Prepared for:

D.R. Horton

419 West Murray Avenue
Visalia, CA 93291

Contact:
Melody Haigh – Forward Planner
(559) 631-3121

Report Prepared by:

Provost & Pritchard Consulting Group

Matt Hamilton, PE
Rebekah Brechmann, EIT

Contact:
Matt Hamilton, PE
(559) 636-1166, Ext. 532

Table of Contents

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Abbreviations

ADA .... Americans with Disabilities Act
HCM .... Highway Capacity Manual
LOS .... Level of Service
TCAG .... Tulare County Association of Governments
TIS .... Traffic Impact Study

1 Introduction and Executive Summary

1.1 Site Location

The project site location is approximately 68 acres in size and located in the southeast vicinity of Visalia. The proposed residential subdivision will be constructed on the south side of Cherry between Lovers Lane and Road 148. The regional context and site location in relation to the City Limits is shown in Figure 1-1.

1.2 Study Area

1.2.1 Intersections

This study is composed of the analysis of existing and proposed intersections. The existing intersections are as follows:

- *McAuliff Street at Cherry Avenue*
- *McAuliff Street at Walnut Avenue*
- *Lovers Lane at Cherry Avenue*
- *Lovers Lane at Walnut Avenue*
- *Lovers Lane at K Avenue*

New intersections analyzed in this study:

- *Cherry Avenue at 2nd Street (lettered and numbered streets will be re-named by City staff)*
- *McAuliff Street at A Street*
- *McAuliff Street at B Street*
- *McAuliff Street at C Street*

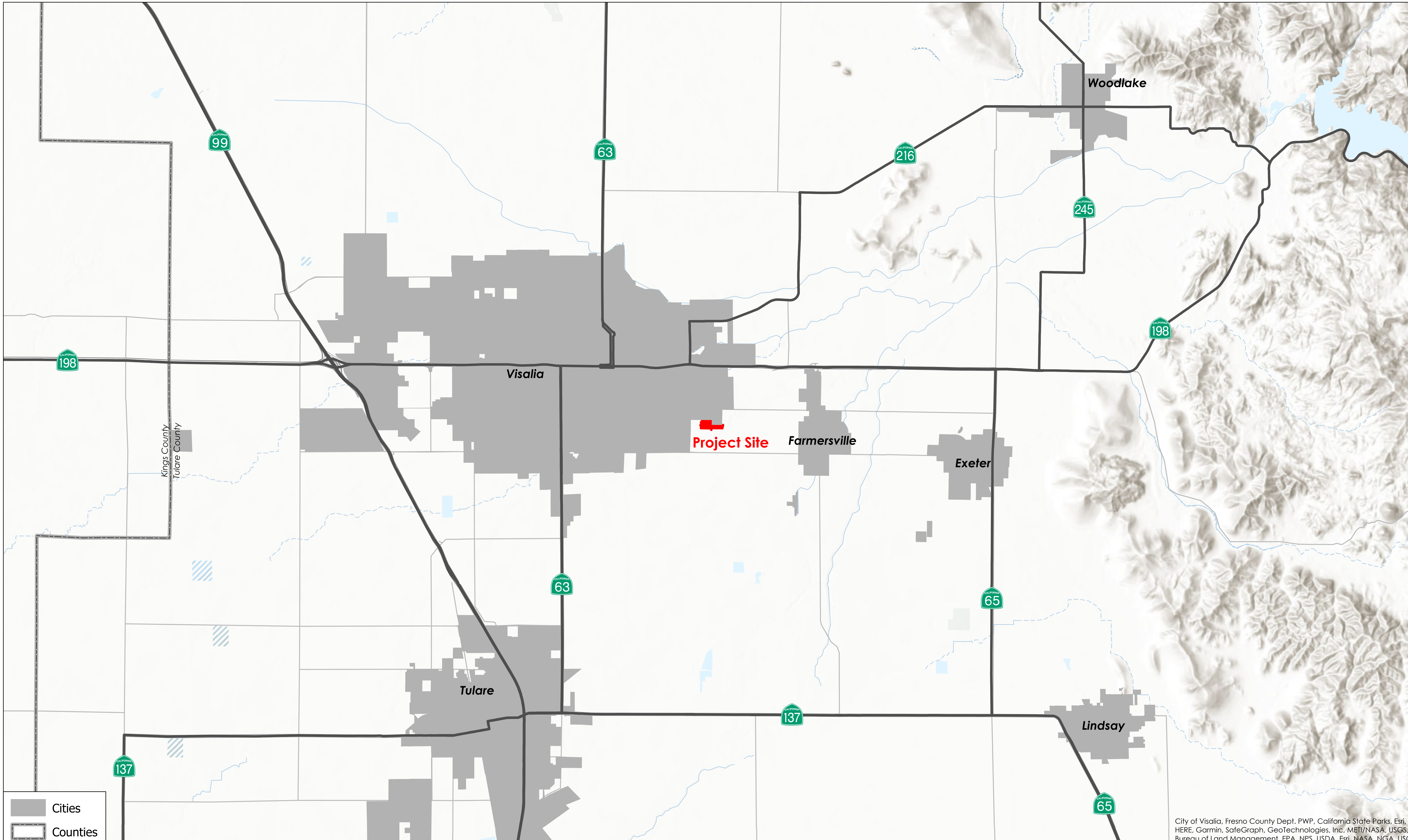
1.2.2 Study Scenarios

The AM and PM peak hours for existing intersections were determined based on existing 15-minute interval counts network wide. Peak hour counts for each intersection, can be found in the Appendix A. Proposed intersections were evaluated for the calculated AM peak of 7:30am - 8:30 am and PM peak of 3:30pm-4:30pm. A level of service (LOS) analysis was completed for the AM and PM peak with the below scenarios:

- *Existing Conditions*
- *Opening Year (2027, with and without project)*
- *5-Year Horizon (2032, with and without project)*
- *Mitigation Scenarios*

1.3 Conclusions & Recommendations

A level of service analyses was completed on all scenarios and intersections as stated above. The intersections level of service was determined using Synchro 11 using existing counts, ITE trip generation guidelines, and TCAG models. According to the City of Visalia standards a minimum Level of Service (LOS) of D is required for all intersections. After completing the analysis of all intersections, the signalized intersection of Lover's Lane and Walnut was found to be failing in all scenarios including existing without project. To mitigate not only the impacts of the proposed development, but also other base traffic, the intersection layout was adjusted based on the 2030 Visalia General Plan. The General plan calls for widening Walnut Ave to a four-lane arterial. In addition to the road widening, the signal was adjusted to have protected left-turn lanes in both Eastbound and Westbound directions. With those adjustments, the LOS improved to a "D" for the 5-year 2032 with Project scenario. Based on these findings, the development is not making a significant impact on existing or proposed intersections.



0 1 2
Miles

DR Horton

Figure 1-1 Traffic Impact Study: Regional Location

PROVOST&
PRITCHARD

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DR Horton

Figure 1-2 Traffic Impact Study: Site Plan

PROVOST&
PRITCHARD

7/15/2022 \\ppeng.com\pzdata\clients\DR Horton - 1594\0159421003-Pearl Woods\400 GIS\Map\PearlWoods_TIS\PearlWoods_TIS.aprx

2 Proposed Development

2.1 Land Use and Intensity

The proposed development is located within the city limits of Visalia and designated in the City of Visalia's General Plan as low density residential. The project site is approximately 68 acres (APN:127-030-038) and will be comprised of 273 lots. The proposed development also includes a Class I Bike Trail that will run along a portion of the south end of the site. A park area and basin will be constructed at the southeast corner of the site just south of the bike trail. The development has an existing land use of Agriculture/Vacant. The proposed use is Single family Residential Subdivision, Parks/Recreation, and Reservoirs/Canals.

2.2 Site Plan

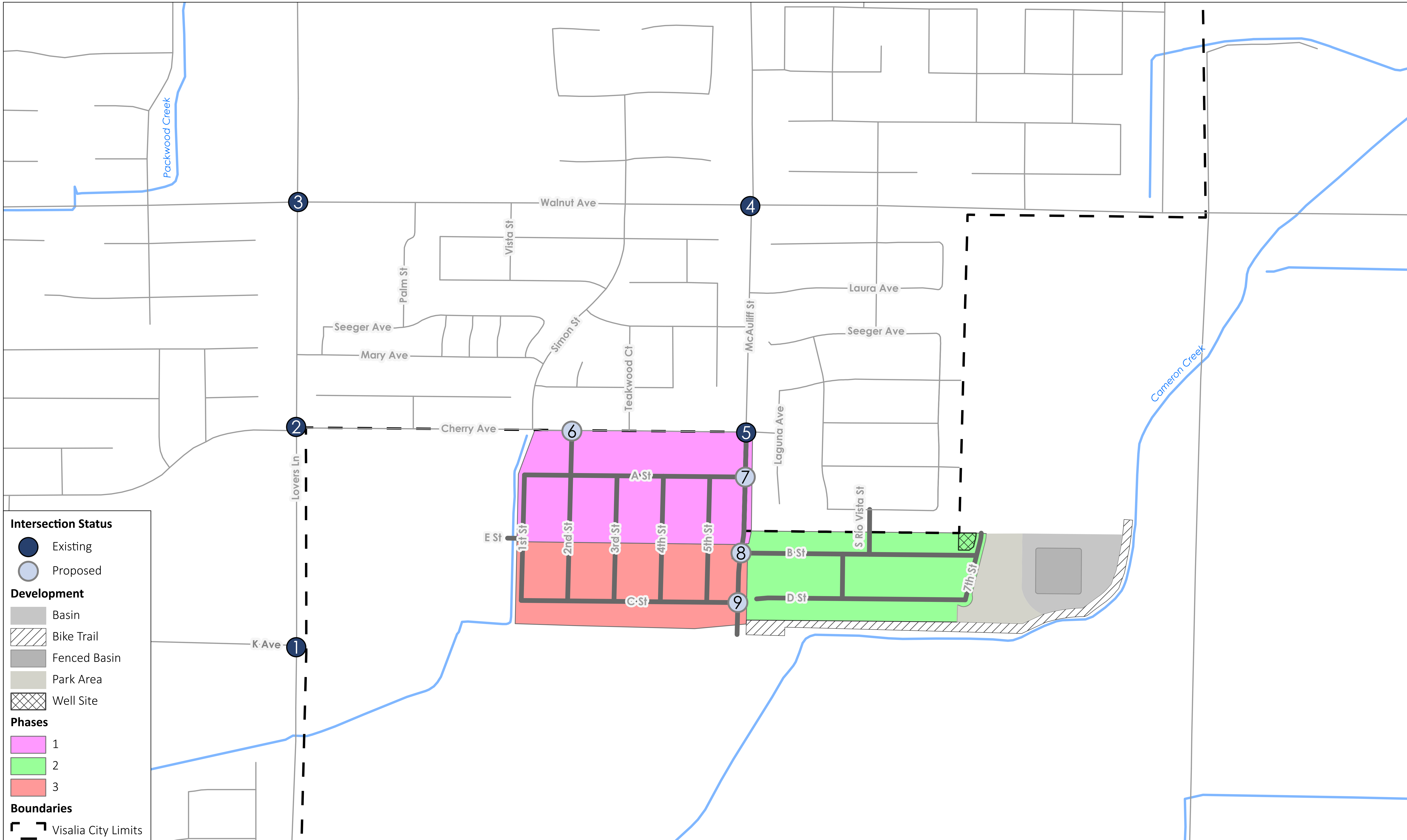
The site plan is shown below in Figure 2-1, showing the street and lot layout, in addition to the location of the proposed park basin, park area, and Class I Bike Trail.

2.2.1 Access Geometrics

There will be several access points to the project site. On the north edge of the site along Cherry Avenue, cars can access the site on 2nd Street as well as McAuliff Street. Residents will also be able to access the development through South Rio Vista Street, Simon St, and N Teakwood Ct which connects to the existing developments to the north and north-east. These access points are shown on Figure 1-1.

2.3 Development phasing and timing

Construction of the development will be completed in three phases, as seen in Figure 2-2. The first phase consists of the construction of 101 homes located in the northwest corner of the site just south of Chery Avenue. The second phase will continue with the construction of 89 homes east of the houses built in phase one. Phase 3 will continue the site's development to the south and will be comprised of 83 homes. Phase one has an estimated start date of 2023-2024 with final completion of the Pearl Woods Subdivision in 2027.



DR Horton

Fig 2-2 Traffic Impact Study: Development Phasing

PROVOST& PRITCHARD

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3 Study Area Conditions

3.1 Area of significant traffic impacts

Road segments and intersections near the site were analyzed using methodologies within the Highway Capacity Manual (HCM) as described in the following sections. Intersections included in this study are as follows:

- *McAuliff Street at Cherry Avenue*
- *McAuliff Street at Walnut Avenue*
- *Lovers Lane at Cherry Avenue*
- *Lovers Lane at Walnut Avenue*
- *Lovers Lane at K Avenue*
- *Cherry Avenue at 2nd Street*
- *McAuliff Street at A Street*
- *McAuliff Street at B Street*
- *McAuliff Street at C Street*

3.1.1 Market area

The bulk of traffic traveling within the study area is made up of passenger cars due to the location being in a primarily residential area. However, existing traffic counts indicated that surrounding areas account for some truck traffic. Intersections along Walnut Avenue had approximately 2% heavy vehicles, while intersections along Lovers Lane had around 3.5% heavy vehicles.

3.2 Land use

3.2.1 Existing land use

The existing land use for the site is Agriculture/Vacant.

3.2.2 Anticipated future development

The proposed land use consists of the following: Single Family Residential Subdivision, Parks/Recreation, and Reservoirs/Canals.

3.3 Site accessibility

3.3.1 Existing and future area roadway system

Currently, the roadway system within the study area encompasses Arterial Roads, Collector Roads, and Local Streets. With the construction of the development, local streets will be added within the project site. Existing Roads can be found in Figure 1-1, and the future roadway system within the site is shown in Figure 2-1. Other planned roadway systems are shown in the City of Visalia's General plan and consist of the continuation of K Avenue to the east and S McAuliff Street to the south. Because of the unknown timing for construction and short horizons of this study, neither of these continuations are evaluated here.

3.4 Analysis of Existing Conditions

3.4.1 Physical characteristics of Roadways

The table below summarizes the physical characteristics of the existing roadway system within the study area. Information on the classification of each roadway was obtained from the City of Visalia General Plan.

Table 3-1. Existing Roadway Characteristics

Summary of Existing Roads within Study Area			
Road Name	Direction of Traffic	Max Number of Lanes	Classification
Lover's Lane	Northbound	2	Arterial
	Southbound	2	
McAuliff St	Northbound	1	Collector
	Southbound	1	
Rio Vista St	Northbound	1	Local Street
	Southbound	1	
Walnut Avenue	Eastbound	1	Arterial
	Westbound	2	
Cherry Avenue	Eastbound	1	Local Street
	Westbound	1	
K Avenue	Eastbound	1	Arterial
	Westbound	1	

3.4.2 Traffic control devices

The intersection of Lovers Lane and Walnut Avenue is signalized. The remaining four existing and four proposed intersections are two-way stop controlled.

3.4.3 Transit service

Although there are no transit stops within the study area, Visalia Transit has two fixed routes – 9A and 9B – that fall within the study area and run along Lover's Lane, Walnut Avenue, and McAuliff Street.

3.4.4 Pedestrian/bicycle facilities

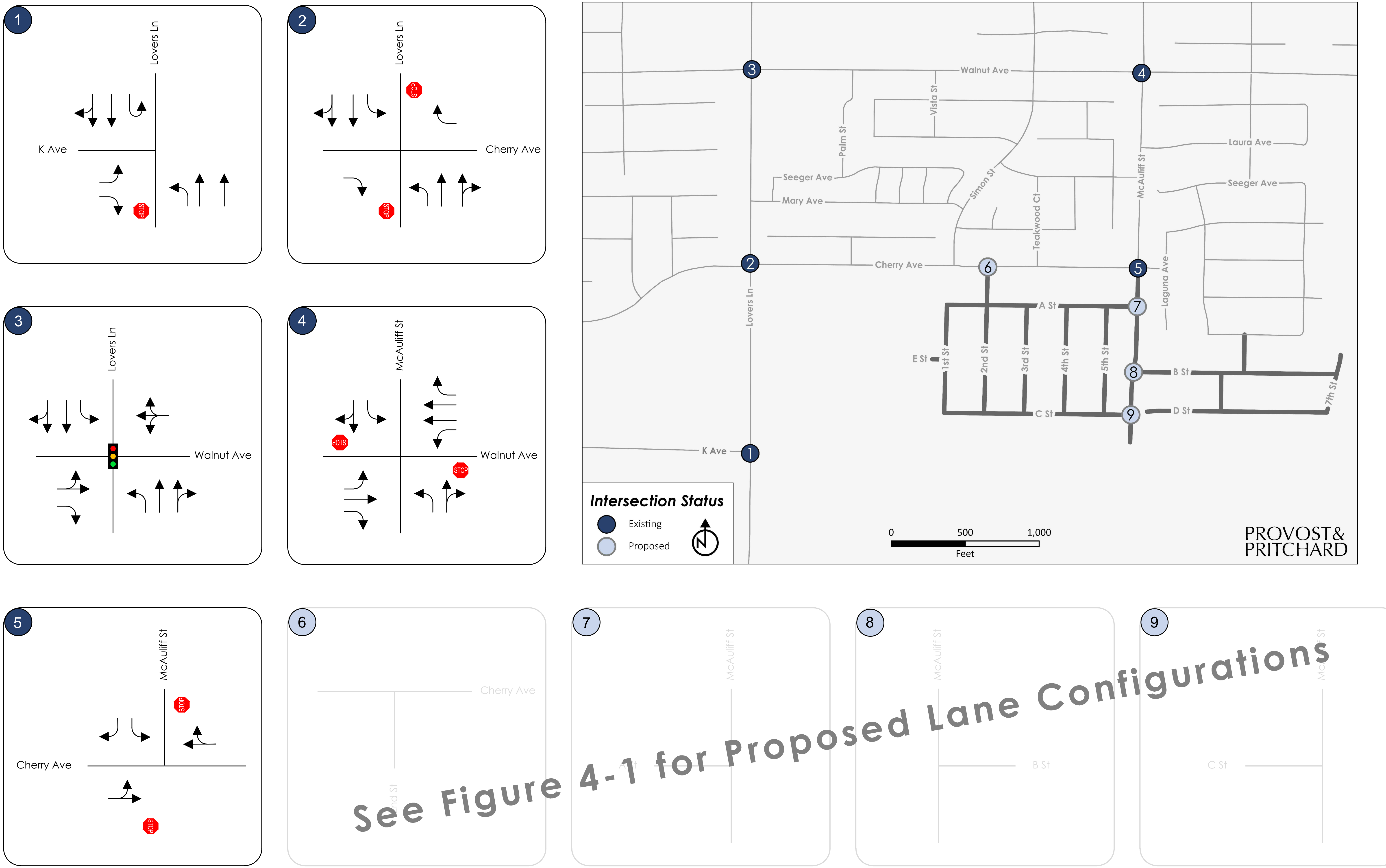
Within the study area several of the roadways have pedestrian facilities which include ADA curb ramps and sidewalk, especially in the newer developed areas. There are minimal bicycle facilities within the study area. McAuliff has a dedicated northbound and southbound bicycle lane between Cherry and Walnut Avenues.

3.5 Traffic volumes

Existing 24-hour counts were taken on Tuesday, May 17th, 2022, in 15-minute intervals by Metro Traffic Data Inc. Heavy vehicles were also counted and considered in this study. Following the collection of counts, AM and PM peak hours were computed by adding four consecutive 15-minute intervals throughout the day to determine the peak volume of vehicles during the morning and evening hours. Figure 3-1 and Figure 3-2 show existing lane configurations and existing AM and PM peak hour traffic volumes.

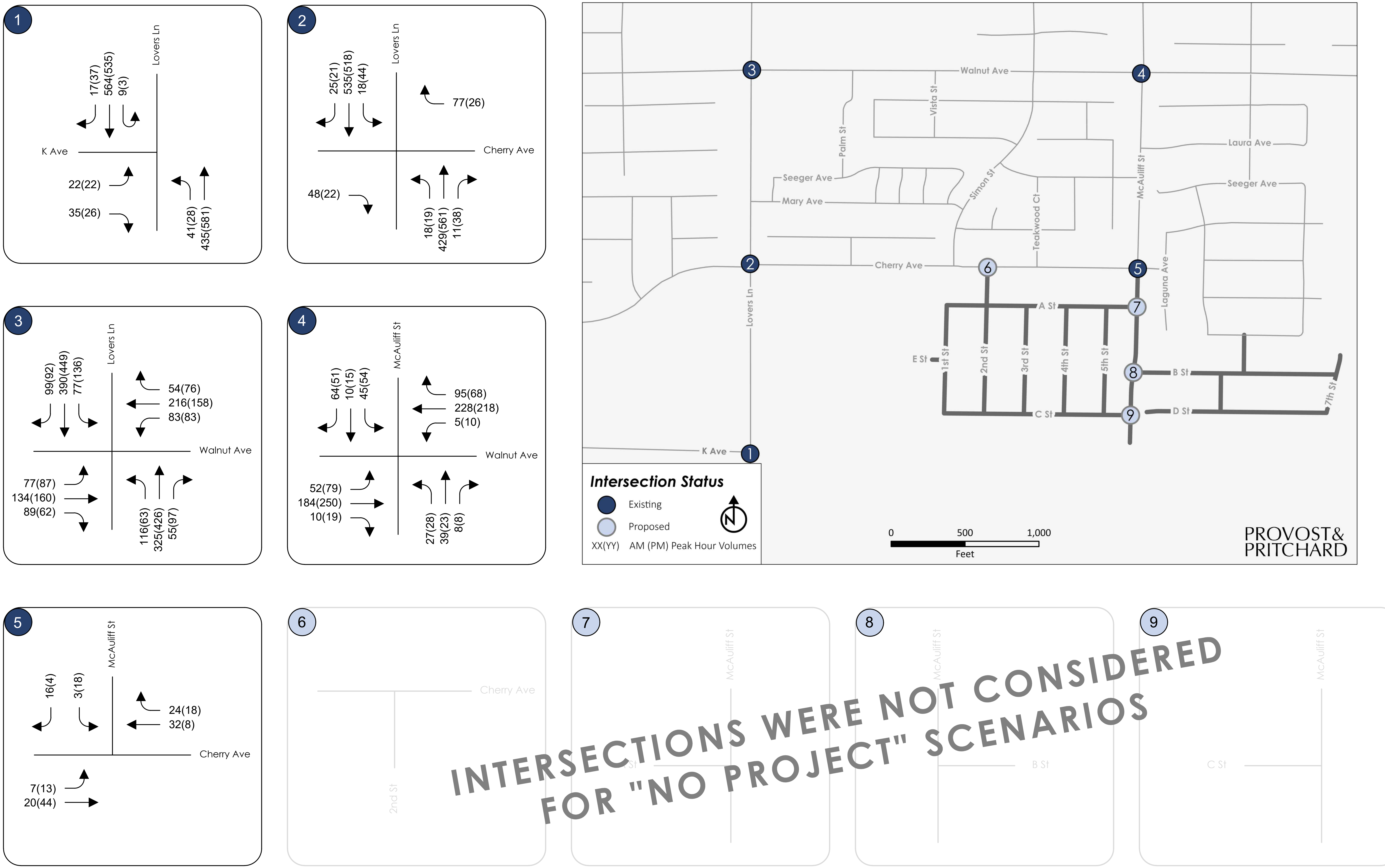
Existing Lane Configuration

Figure 3-1



Existing Turn Counts

Figure 3-2



3.6 Level of service

The level of service (LOS) for each intersection was assessed using Synchro 11software. In order to determine the LOS of each intersection several parameters were taken into consideration such as turning movements of each leg, traffic volumes, geometrics, and several more. The 6th Edition of the Highway Capacity Manual was used within Synchro in the determination of LOS. The level of service ranges from A to F as defined in the Highway Capacity Manual 6th Edition. A description of each level of service is shown for signalized and unsignalized intersections in Table 3-2 and Table 3-3. The City of Visalia's general plan considers an LOS of "D" as the minimum acceptable LOS designation.

Table 3-2. Signalized Intersection Level of Service Definitions (Highway Capacity Manual, 6th Edition)

Level of Service for Signalized Intersections		
Level of Service	Description	Average Control Delay (s/veh)
A	Low volume-to-capacity ratio and no greater than 1.0. Either progression is exceptionally favorable, or the cycle length is very short. If there is favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Low volume-to-capacity ratio and no greater than 1.0. Either progression is highly favorable, or the cycle length is short. More vehicles stop than LOS A.	>10-20
C	Volume-to-capacity ratio is no greater than 1.0. Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20-35
D	Volume-to-capacity ratio is high, but no greater than 1.0. Progression is ineffective or the 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 the cycle length is long. Individual cycle failures are frequent.	>55-80
F	Volume-to-capacity is very high and greater than 1.0. Progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Table 3-3. Unsignalized Intersection Level of Service Definitions (Highway Capacity Manual, 6th Edition)

Level of Service for Unsignalized Intersections		
Level of Service	Control Delay (s/veh)	Volume to Capacity Ratio (V/C)
A	0-10	V/C ≤ 1.0
B	>10-15	V/C ≤ 1.0
C	>15-25	V/C ≤ 1.0
D	>25-35	V/C ≤ 1.0
E	>35-50	V/C ≤ 1.0
F	>50	V/C >1.0

3.6.1 Intersection LOS Summary

Table 3-4 below displays the existing LOS of each intersection during the AM and PM peak hours. Currently, the only intersection that is failing is Lover's Lane and Walnut Avenue, with a delay of 66.5 seconds and an LOS of E during the morning peak hour.

Table 3-4: Summary of Existing Interactions AM and PM Peak LOS

Intersection Level of Service Summary - Existing Conditions						
ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay (sec)	LOS	Delay (sec)	LOS
1	Lover's Lane/K Avenue	One-Way Stopped	16.2	C	16.5	C
2	Lover's Lane/Cherry Avenue	Two-Way Stopped	11	B	10.6	B
3	Lover's Lane/Walnut Avenue	Signalized	66.5	E	54.8	D
4	Walnut Avenue/McAuliff Street	Two-Way Stopped	15.6	C	16.8	C
5	McAuliff Street/Cherry Avenue	Four-Way Stopped	7.3	A	7.9	A

3.7 Safety-related deficiencies, crash experience

Crash experience was collected from the Transportation Injury Mapping System, (TIMS) to determine what type of accidents have occurred within the project area. The most recent data available was between the years of 2019 and 2021. During that duration, a total of eight collisions were reported – one in 2019, three in 2020, and four in 2021. Four collisions were reported at the intersection of Walnut Avenue at McAuliff Avenue in the three-year duration. Based on this data, none of the intersections studied should be considered a safety risk.

3.8 Data sources

Existing counts were taken on Tuesday, May 17th 2022, and 15-minute interval counts were taken over a period of 24 hours by Metro Traffic Data Inc and can be seen in Appendix A. Tulare Council Association of Government (TCAG) provided volumes of their traffic model for years 2022, 2027, and 2032 and are included in Appendix B.

4 Projected Traffic

4.1 Site traffic forecasting (each horizon year)

4.1.1 Trip generation

The trip generation for the proposed development was estimated using ITE Trip Generation Manual 11th edition. The Land Use Code 210- "Single family detached Housing" and time period "Weekday, Peak Hour of Adjacent Street Traffic" was used for the analysis. Please refer to Table 4-1 for Project Trip Generation Volumes.

Table 4-1– Trip Generation Summary

Site Plan Rates and Totals				
Land Use	Dwelling Units	Daily Total	AM Peak Total	PM Peak Total
210 Single-family Detached Housing	273	**2574**	**192**	**257**

Trip distribution/ Trip assignment

Trip distribution was estimated based on existing traffic patterns, major points of interest and engineering judgement. The majority of traffic was directed North/ Southbound on Lovers Lane and East/ Westbound on Walnut Avenue. Figure 4-1. and Figure 4-2 show proposed Lane configuration and traffic volumes for the proposed development, respectively.

4.2 Non-site traffic forecasting (each horizon year)

4.2.1 Projections by TCAG

Tulare County Association of Governments (TCAG) provided base model numbers for the Opening year 2027 and 5- Year Horizon 2032. However, the total intersection numbers, provided by TCAG, were much lower than current total intersection volumes obtained in the field. After careful review, it was determined that the TCAG numbers should only be used for growth rate calculations.

To obtain 2027 and 2032 base model numbers for Synchro analysis, total intersection growth rates, based on the TCAG volumes for 2022, 2027 and 2032, were calculated and applied to the existing field counts. Individual intersection turning movements were calculated based on existing turning movement ratios.

4.2.2 Total traffic (each horizon year)

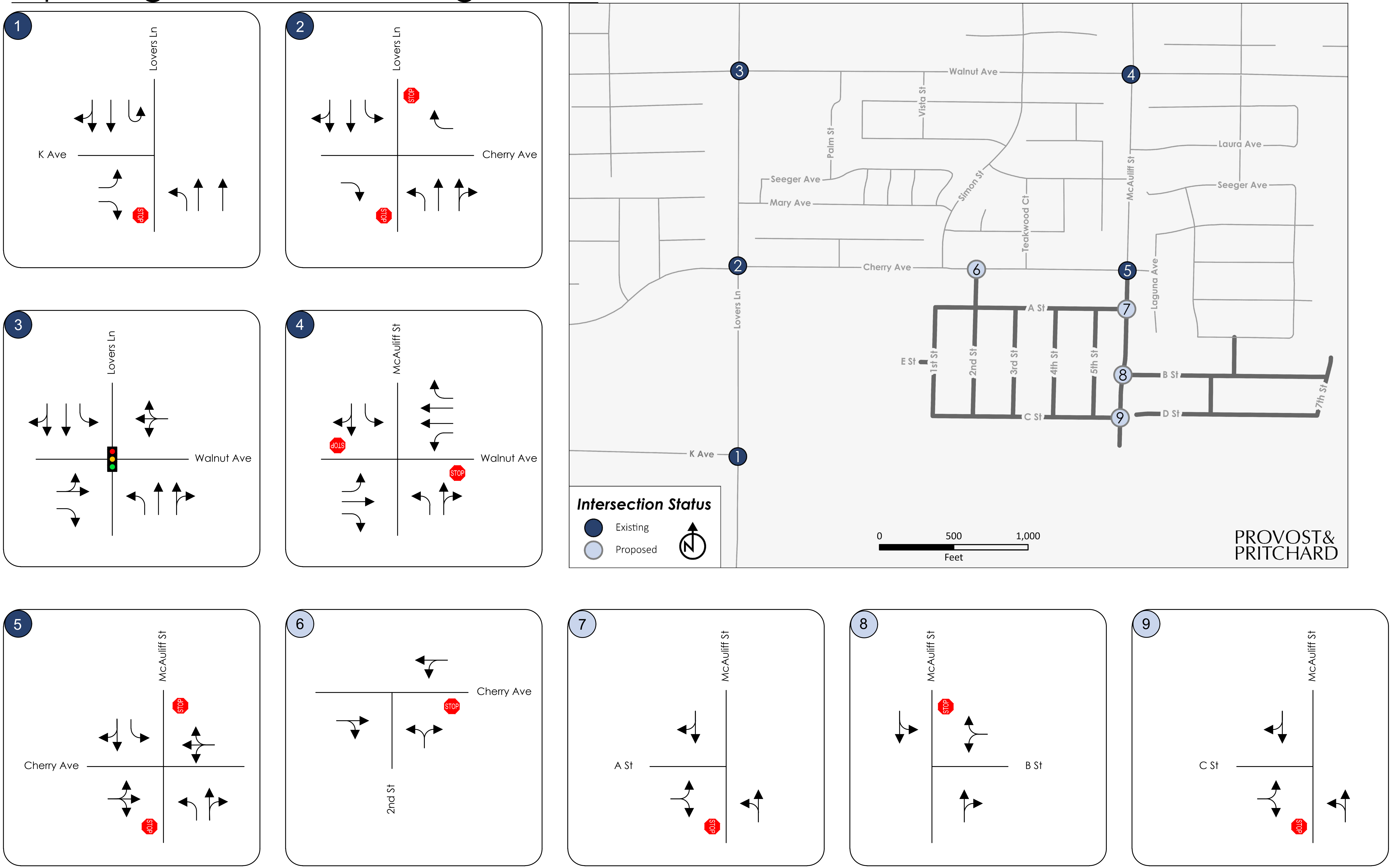
Total traffic volumes for Opening year 2027 and 5- Year Future 2032 without Project scenarios are shown on Figure 4-3 and Figure 4-4.

4.2.3 Total traffic volumes with Project (each horizon year)

Total traffic volumes for Opening year 2027 and 5- Year Future 2032 with Project scenarios are shown on Figure 4-5 and Figure 4-6.

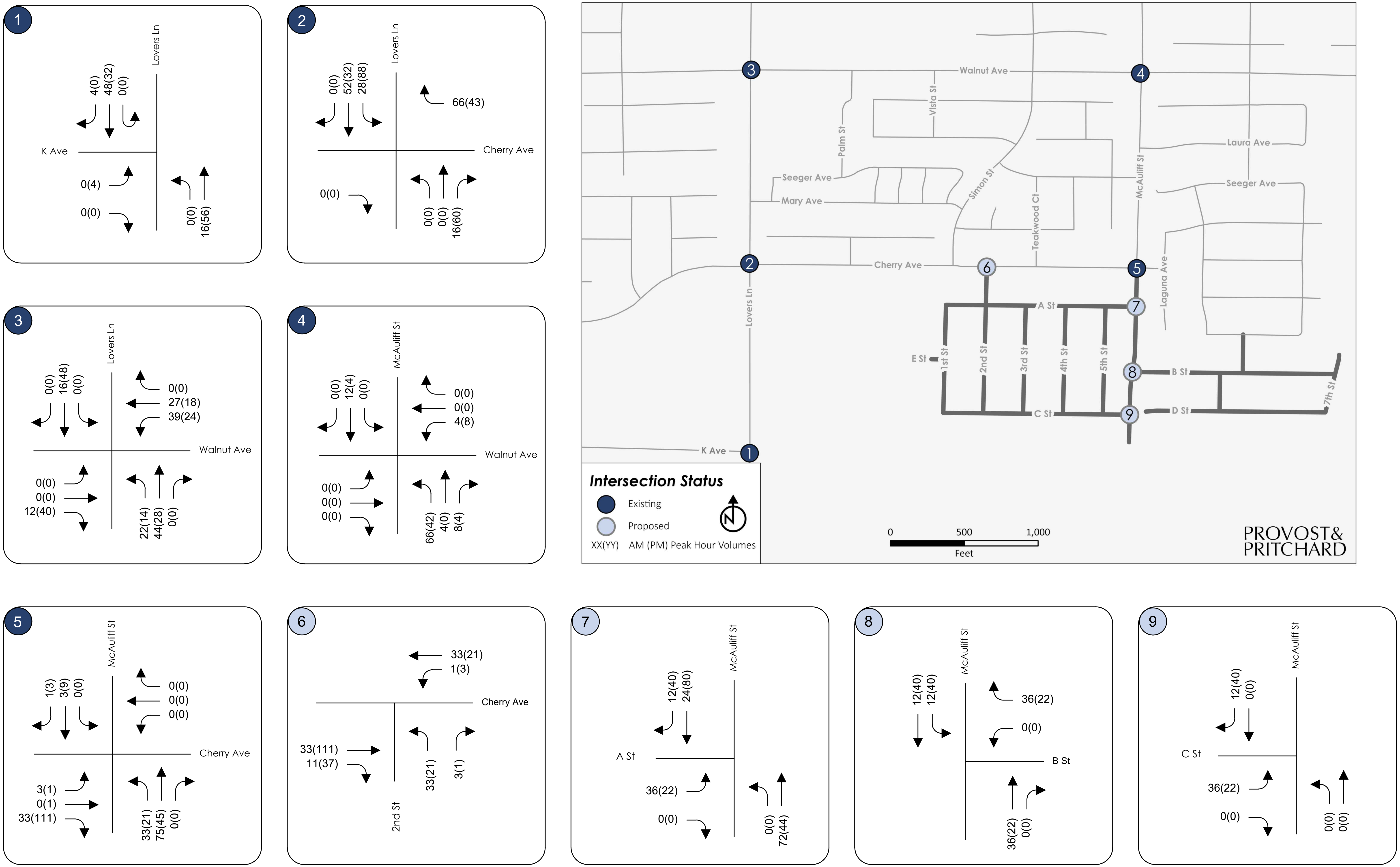
Opening Year Lane Configuration

Figure 4-1



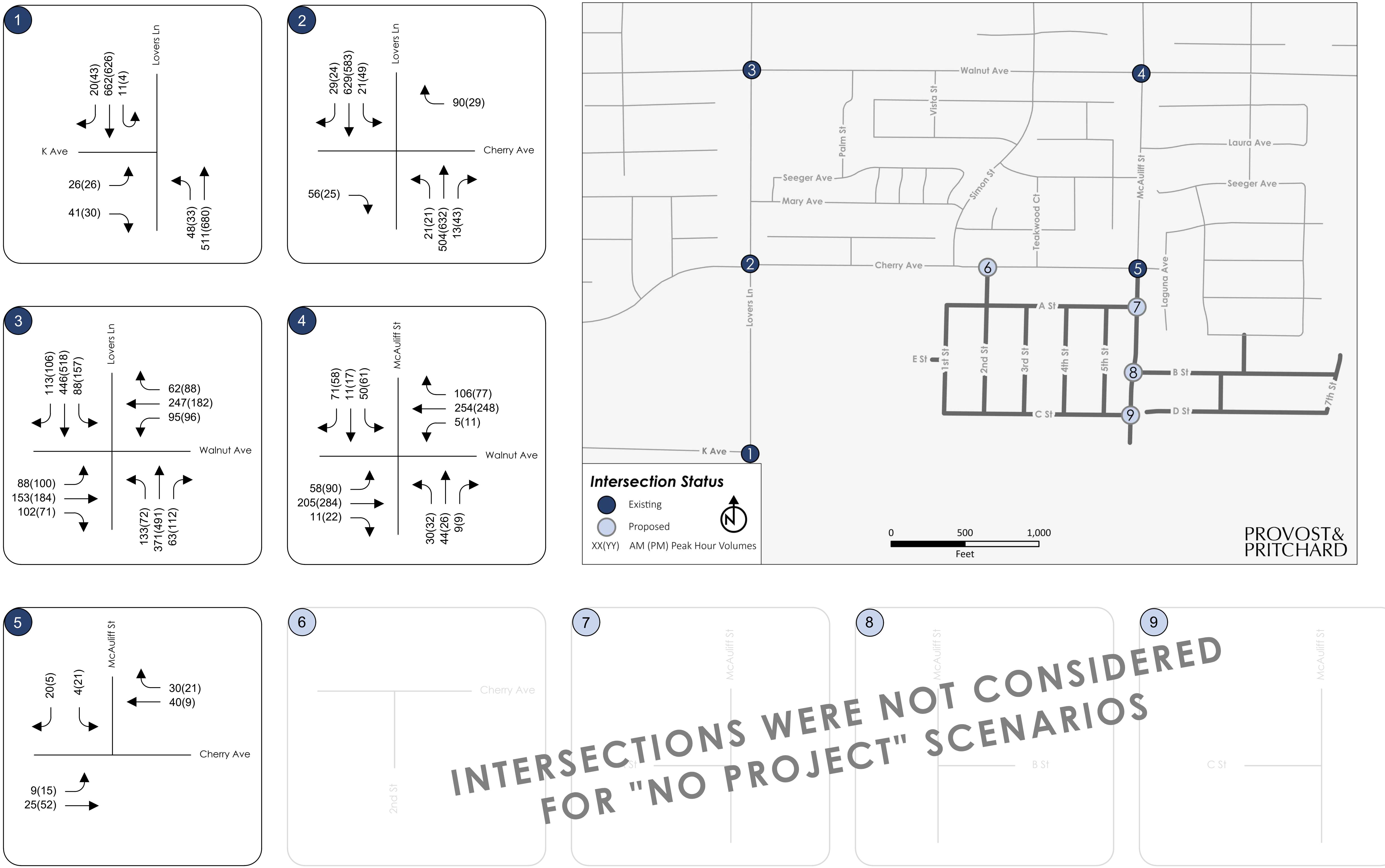
Project

Figure 4-2



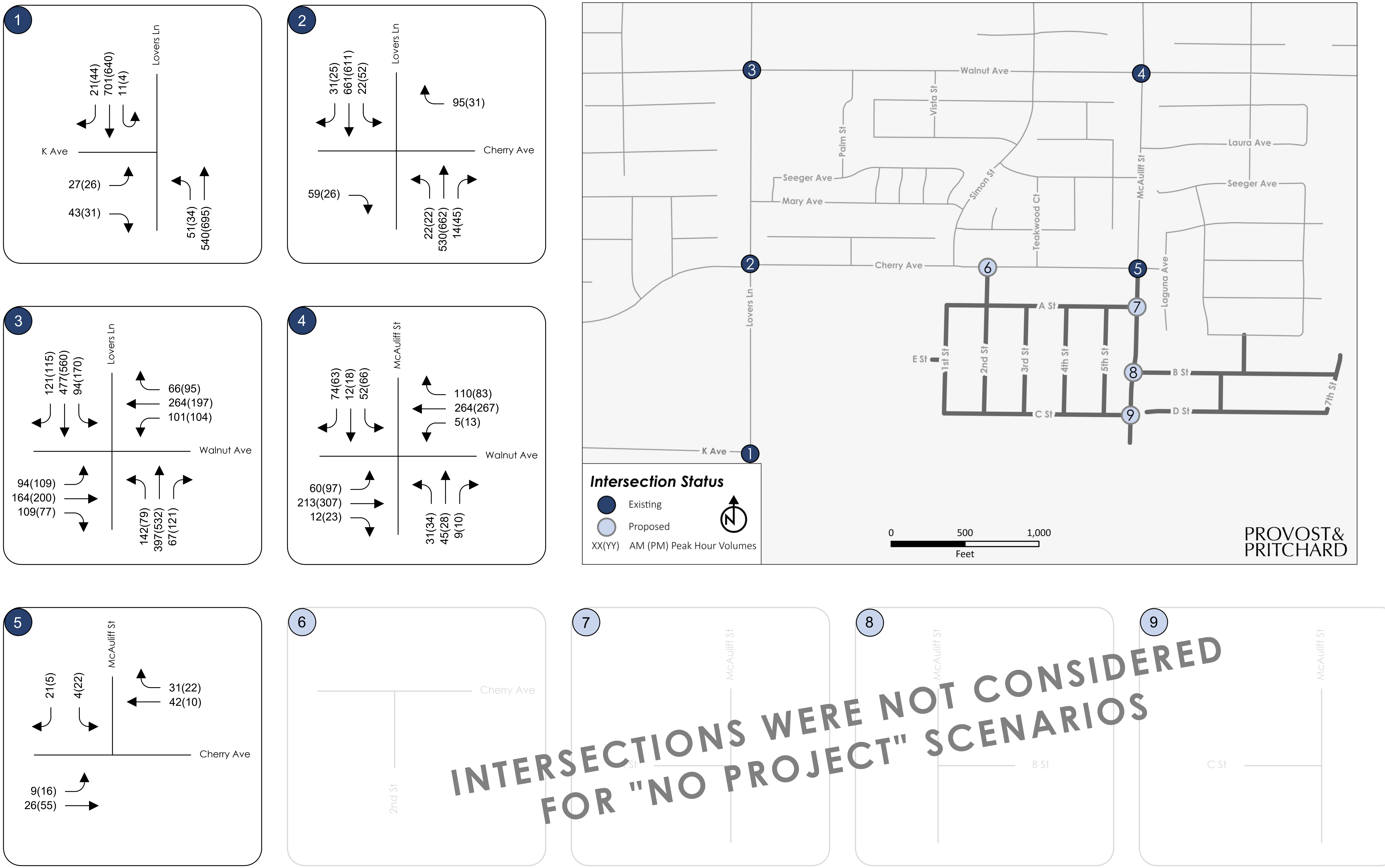
Opening Year 2027- No Project

Figure 4-3



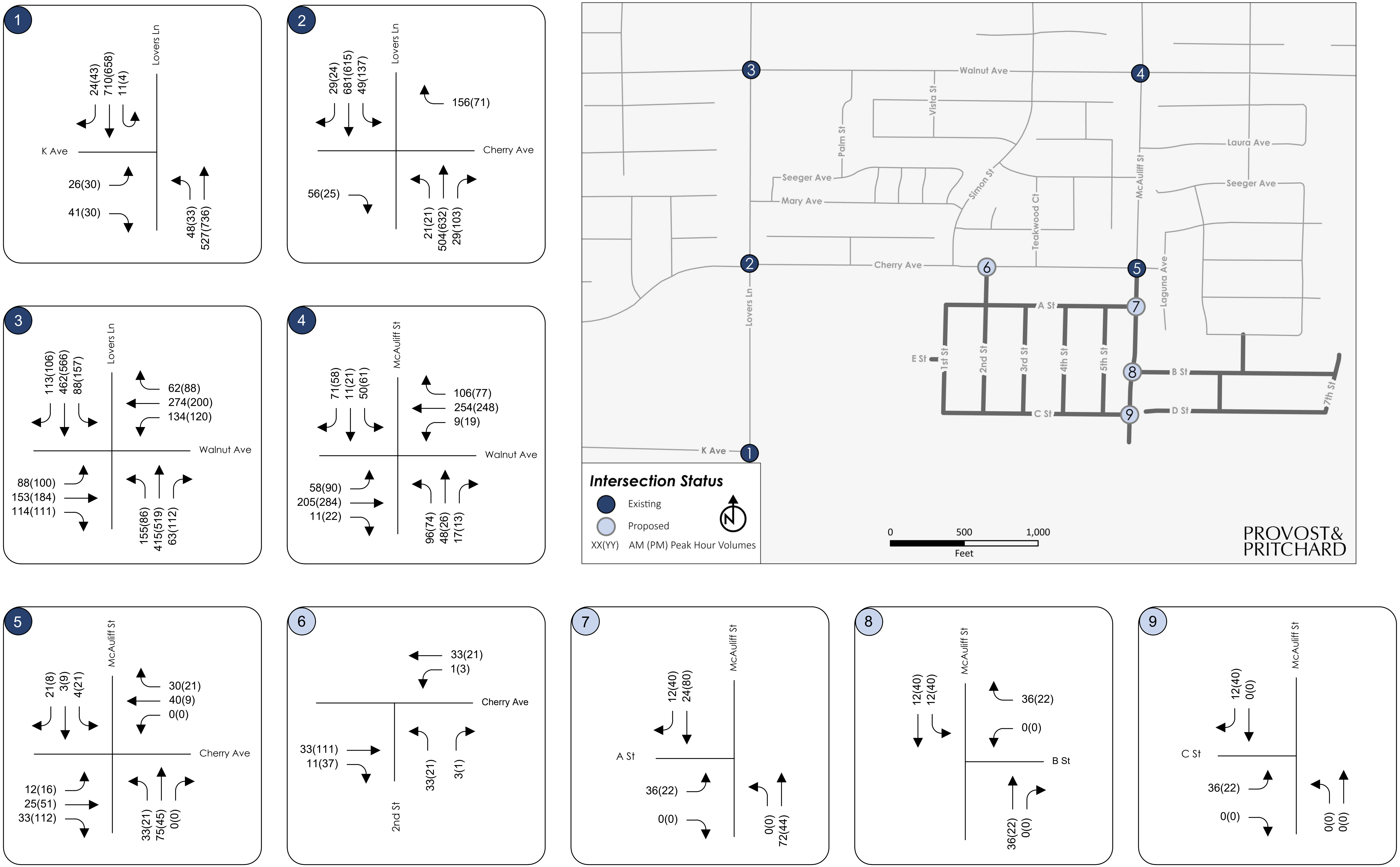
5 Year 2032- No Project

Figure 4-4



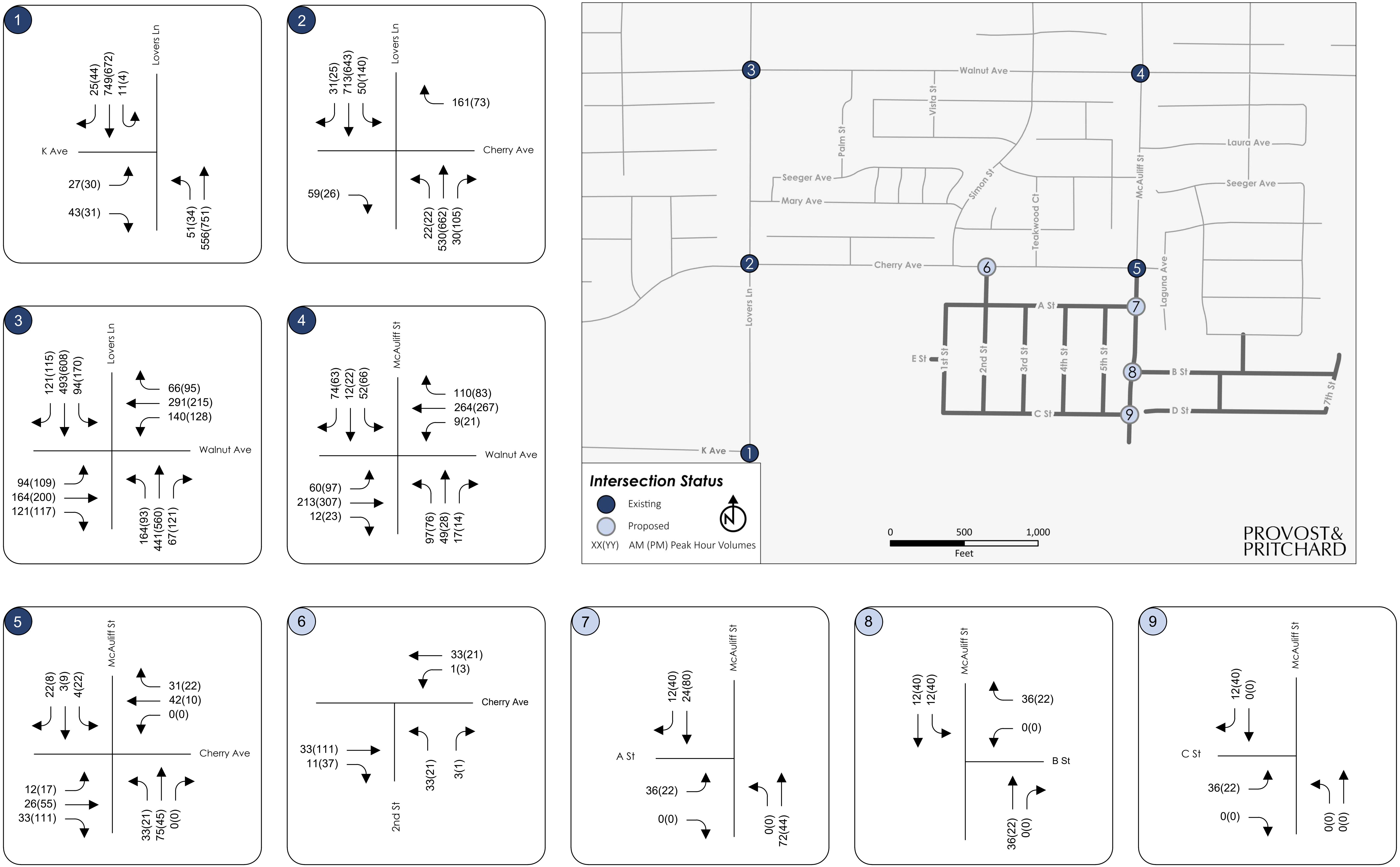
Opening Year 2027- Plus Project

Figure 4-5



5 Year 2032- Plus Project

Figure 4-6



5 Traffic and Improvements Analysis

5.1 LOS analysis

The analyses provided in the following were determined based on running all scenarios through the Synchro 11 software. Synchro generated reports for each scenario can be found in Appendix C.

5.1.1 Without project

Table 5-1: Summary of Opening Year Intersection's AM and PM Peak LOS

Intersection Level of Service Summary - Opening Year						
ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay (sec)	LOS	Delay (sec)	LOS
1	Lover's Lane/K Avenue	One-Way Stopped	19.9	C	20.6	C
2	Lover's Lane/Cherry Avenue	Two-Way Stopped	11.7	B	11	B
3	Lover's Lane/Walnut Avenue	Signalized	81.9	F	64.8	E
4	Walnut Avenue/McAuliff Street	Two-Way Stopped	17.4	C	19.6	C
5	McAuliff Street/Cherry Avenue	Four-Way Stopped	7.4	A	8.2	A
6	Cherry Avenue/2nd Street	Does Not Exist	-	-	-	-
7	A Street/McAuliff Street	Does Not Exist	-	-	-	-
8	B Street/McAuliff Street	Does Not Exist	-	-	-	-
9	C Street/McAuliff Street	Does Not Exist	-	-	-	-

Table 5-2: Summary of 5 Year Intersection's AM and PM Peak LOS

Intersection Level of Service Summary - 5-Year						
ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay (sec)	LOS	Delay (sec)	LOS
1	Lover's Lane/K Avenue	One-Way Stopped	21.8	C	21.1	C
2	Lover's Lane/Cherry Avenue	Two-Way Stopped	11.9	B	11.2	B
3	Lover's Lane/Walnut Avenue	Signalized	90.9	F	73	E
4	Walnut Avenue/McAuliff Street	Two-Way Stopped	18.1	C	22.9	C
5	McAuliff Street/Cherry Avenue	Four-Way Stopped	8.1	A	7.9	A
6	Cherry Avenue/2nd Street	Two-Way Stopped	-	-	-	-
7	A Street/McAuliff Street	Two-Way Stopped	-	-	-	-
8	B Street/McAuliff Street	Two-Way Stopped	-	-	-	-
9	C Street/McAuliff Street	Two-Way Stopped	-	-	-	-

5.1.2 With project

Table 5-3: Summary of Opening Year plus Project Intersection's AM and PM Peak LOS

Intersection Level of Service Summary - Opening + Project						
ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay (sec)	LOS	Delay (sec)	LOS
1	Lover's Lane/K Avenue	One-Way Stopped	21.6	C	23.8	C
2	Lover's Lane/Cherry Avenue	Two-Way Stopped	12.3	B	11.9	B
3	Lover's Lane/Walnut Avenue	Signalized	106.2	F	71.9	E
4	Walnut Avenue/McAuliff Street	Two-Way Stopped	18.8	C	22.6	C
5	McAuliff Street/Cherry Avenue	Four-Way Stopped	8.6	A	8.2	A
6	Cherry Avenue/2nd Street	Two-Way Stopped	9	A	9.5	A
7	A Street/McAuliff Street	Two-Way Stopped	9.3	A	9.4	A
8	B Street/McAuliff Street	Two-Way Stopped	8.6	A	8.5	A
9	C Street/McAuliff Street	Two-Way Stopped	8.7	A	8.7	A

Table 5-4: Summary of 5 Year Plus Project Intersection's AM and PM Peak LOS

Intersection Level of Service Summary - 5-Year + Project						
ID	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay (sec)	LOS	Delay (sec)	LOS
1	Lover's Lane/K Avenue	One-Way Stopped	23.8	C	24.5	C
2	Lover's Lane/Cherry Avenue	Two-Way Stopped	12.6	B	12.1	B
3	Lover's Lane/Walnut Avenue	Signalized	116.2	F	81.0	F
4	Walnut Avenue/McAuliff Street	Two-Way Stopped	19.8	C	26.1	D
5	McAuliff Street/Cherry Avenue	Four-Way Stopped	8.6	A	8.2	A
6	Cherry Avenue/2nd Street	Two-Way Stopped	9	A	9.5	A
7	A Street/McAuliff Street	Two-Way Stopped	9.3	A	9.4	A
8	B Street/McAuliff Street	Two-Way Stopped	8.6	A	8.5	A
9	C Street/McAuliff Street	Two-Way Stopped	8.7	A	8.7	A

5.2 Roadway improvements

5.2.1 Improvements by the City of Visalia or others to accommodate non-site traffic

The intersection at Lover's Lane and Walnut Ave is expected to experience a LOS of "E" for the 5-year 2032 without Project PM scenario and a LOS of "F" for the 5- year 2032 with Project PM scenario. To mitigate not only the impacts of the proposed development, but also other base traffic, the intersection layout was adjusted based on the 2030 Visalia General Plan. The General plan calls for widening Walnut Ave to a four-lane arterial. In addition to the road widening, the signal was adjusted to have protected left-turn lanes in both Eastbound and Westbound direction. With those adjustments, the LOS increased to a "D" for the 5-year 2032 with Project scenario. All other scenarios can be found in Table 5-5.

Table 5-5: Summary of the Mitigated Analysis for Lover's Lane and Walnut Ave AM and PM Peak LOS

Lover's Lane / Walnut Avenue Mitigated LOS Comparison								
Scenario	AM Peak Hour				PM Peak Hour			
	No Improvements		With Improvements		No Improvements		With Improvements	
	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
Existing Conditions	66.5	E	-	-	54.8	D	-	-
Opening Year	81.9	F	**47.6**	**D**	64.8	E	**48.3**	**D**
Opening + Project	106.2	F	**50.8**	**D**	71.9	E	**48.5**	**D**
5-Year	90.9	F	**49.4**	**D**	73	E	**50.7**	**D**
5-Year + Project	116.2	F	**52.9**	**D**	81	F	**50.6**	**D**

6 Conclusions & Recommendations

6.1 Traffic Operations Analysis and Roadway improvements

6.1.1 Phasing

Within the development, the roads will be constructed in phases along with the development of lots as seen in Figure 2-2. In phase I, A Street will be fully built out, the northern portion of 1st, 2nd, 3rd, and 4th Street will be built, and McAuliff St will be extended to the south. Phase II will include the construction of B, D, 6th, and 7th Street, a connection to McAuliff, and the continuation of Rio Vista Street south. During phase III, 1st, 2nd, 3rd, and 4th Street will be fully constructed, in addition to C Street. McAuliff Street will be extended even further south in Phase III.

Improvements at the intersection of Lover's Lane and Walnut Ave done by the city, as proposed in the general plan, will ultimately mitigate the current issues at the intersection.

6.2 Final Conclusions & Recommendations

Existing and Proposed intersections below were evaluated for the calculated AM peak of 7:30am - 8:30 am and PM peak of 3:30pm-4:30pm:

- *McAuliff Street at Cherry Avenue*
- *McAuliff Street at Walnut Avenue*
- *Lovers Lane at Cherry Avenue*
- *Lovers Lane at Walnut Avenue*
- *Lovers Lane at K Avenue*
- *Cherry Avenue at 2nd Street*
- *McAuliff Street at A Street*
- *McAuliff Street at B Street*
- *McAuliff Street at C Street*
-

A level of service (LOS) analysis was completed for the AM and PM peak with the below scenarios:

- *Existing Conditions*
- *Opening Year (2027, with and without project)*
- *5-Year Horizon (2032, with and without project)*
- *Mitigation Scenarios*

It was determined that all intersections passed LOS requirements per the City of Visalia standards (minimum LOS of D) except for the intersection at Lovers Lane and Walnut Avenue. This intersection is currently failing in all scenarios including existing. However, given that the General plan calls for widening Walnut Ave to a four-lane arterial, these improvements will provide mitigation needed to bring the LOS up to a D, and therefore passing City of Visalia requirements.

Appendix A – Traffic Count Data

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report
(Total)

Prepared For:
Provost & Pritchard Consulting Group
130 North Garden Street
Visalia, CA 93291

LOCATION	Lovers Ln @ K Ave	**LATITUDE**	36.3056115
CITY/COUNTY	Visalia, Tulare	**LONGITUDE**	-119.2605931
COLLECTION DATE	Tuesday, May 17, 2022	**WEATHER**	Clear

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
Time	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	
0:00 - 0:15	0	0	7	0	7	0	0	15	3	18	0	1	0	0	1	0	0	0	0	0	26	77
0:15 - 0:30	0	0	6	0	6	0	0	8	0	8	0	3	0	2	5	0	0	0	0	0	19	65
0:30 - 0:45	0	0	9	0	9	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	17	59
0:45 - 1:00	0	0	7	0	7	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	15	55
1:00 - 1:15	0	0	7	0	7	1	0	5	0	6	0	1	0	0	1	0	0	0	0	0	14	46
1:15 - 1:30	0	0	5	0	5	0	0	7	1	8	0	0	0	0	0	0	0	0	0	0	13	37
1:30 - 1:45	0	0	5	0	5	0	0	4	0	4	0	1	0	3	4	0	0	0	0	0	13	28
1:45 - 2:00	0	1	0	0	1	0	0	4	0	4	0	1	0	0	1	0	0	0	0	0	6	23
2:00 - 2:15	0	0	4	0	4	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	5	28
2:15 - 2:30	0	1	0	0	1	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	4	39
2:30 - 2:45	0	0	2	0	2	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	8	53
2:45 - 3:00	0	0	6	0	6	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	11	56
3:00 - 3:15	0	0	7	0	7	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	16	69
3:15 - 3:30	0	0	12	0	12	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	18	67
3:30 - 3:45	0	0	3	0	3	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	11	84
3:45 - 4:00	0	0	7	0	7	0	0	16	0	16	0	1	0	0	1	0	0	0	0	0	24	118
4:00 - 4:15	0	0	6	0	6	0	0	7	0	7	0	1	0	0	1	0	0	0	0	0	14	152
4:15 - 4:30	0	1	13	0	14	0	0	18	0	18	0	2	0	1	3	0	0	0	0	0	35	202
4:30 - 4:45	0	0	22	0	22	0	0	22	0	22	0	1	0	0	1	0	0	0	0	0	45	267
4:45 - 5:00	0	0	21	0	21	0	0	34	1	35	0	0	0	2	2	0	0	0	0	0	58	331
5:00 - 5:15	0	0	17	0	17	1	0	40	1	42	0	4	0	1	5	0	0	0	0	0	64	403
5:15 - 5:30	0	0	29	0	29	1	0	63	1	65	0	4	0	2	6	0	0	0	0	0	100	448
5:30 - 5:45	0	1	33	0	34	1	0	71	0	72	0	0	0	3	3	0	0	0	0	0	109	461
5:45 - 6:00	0	0	37	0	37	1	0	88	1	90	0	1	0	2	3	0	0	0	0	0	130	499
6:00 - 6:15	0	3	35	0	38	1	0	63	0	64	0	1	0	6	7	0	0	0	0	0	109	543
6:15 - 6:30	0	2	46	0	48	3	0	54	0	57	0	3	0	5	8	0	0	0	0	0	113	659
6:30 - 6:45	0	2	53	0	55	0	0	85	1	86	0	3	0	3	6	0	0	0	0	0	147	774
6:45 - 7:00	0	1	67	0	68	2	0	85	5	92	0	7	0	7	14	0	0	0	0	0	174	929
7:00 - 7:15	1	3	96	0	100	1	0	102	6	109	0	9	0	7	16	0	0	0	0	0	225	1083
7:15 - 7:30	0	6	88	0	94	0	0	117	7	124	0	2	0	8	10	0	0	0	0	0	228	1113
7:30 - 7:45	0	3	123	0	126	3	0	151	2	156	0	5	0	15	20	0	0	0	0	0	302	1123
7:45 - 8:00	0	12	118	0	130	2	0	174	3	179	0	9	0	10	19	0	0	0	0	0	328	1009
8:00 - 8:15	1	15	101	0	117	1	0	123	6	130	0	5	0	3	8	0	0	0	0	0	255	855
8:15 - 8:30	0	10	93	0	103	3	0	116	6	125	0	3	0	7	10	0	0	0	0	0	238	759
8:30 - 8:45	1	3	88	0	92	3	0	87	3	93	0	1	0	2	3	0	0	0	0	0	188	680
8:45 - 9:00	1	1	90	0	92	3	0	72	1	76	0	3	0	3	6	0	0	0	0	0	174	698
9:00 - 9:15	1	0	79	0	80	1	0	66	3	70	0	7	0	2	9	0	0	0	0	0	159	713
9:15 - 9:30	0	4	64	0	68	0	0	76	4	80	0	7	0	4	11	0	0	0	0	0	159	711
9:30 - 9:45	0	4	101	0	105	1	0	89	2	92	0	4	0	5	9	0	0	0	0	0	206	727
9:45 - 10:00	1	1	91	0	93	3	0	86	1	90	0	1	0	5	6	0	0	0	0	0	189	685
10:00 - 10:15	3	3	70	0	76	1	0	68	3	72	0	4	0	5	9	0	0	0	0	0	157	678
10:15 - 10:30	1	3	70	0	74	0	0	89	2	91	0	5	0	5	10	0	0	0	0	0	175	691
10:30 - 10:45	0	1	62	0	63	1	0	88	5	94	0	1	0	6	7	0	0	0	0	0	164	709
10:45 - 11:00	0	4	65	0	69	1	0	96	7	104	0	4	0	5	9	0	0	0	0	0	182	721
11:00 - 11:15	0	3	80	0	83	3	0	76	2	81	0	3	0	3	6	0	0	0	0	0	170	731
11:15 - 11:30	2	3	91	0	96	4	0	84	4	92	0	0	0	5	5	0	0	0	0	0	193	782
11:30 - 11:45	1	3	79	0	83	0	0	78	3	81	0	5	0	7	12	0	0	0	0	0	176	782
11:45 - 12:00	2	5	96	0	103	1	0	82	2	85	0	0	0	4	4	0	0	0	0	0	192	791
12:00 - 12:15	0	1	100	0	101	3	0	100	4	107	0	3	0	10	13	0	0	0	0	0	221	816
12:15 - 12:30	0	1	90	0	91	2	0	83	3	88	0	4	0	10	14	0	0	0	0	0	193	804
12:30 - 12:45	0	2	86	0	88	2	0	84	4	90	0	1	0	6	7	0	0	0	0	0	185	803
12:45 - 13:00	0	3	109	0	112	1	0	93	5	99	0	5	0	1	6	0	0	0	0	0	217	806
13:00 - 13:15	3	3	100	0	106	2	0	92	6	100	0	2	0	1	3	0	0	0	0	0	209	793
13:15 - 13:30	1	2	94	0	97	0	0	88	2	90	0	3	0	2	5	0	0	0	0	0	192	828
13:30 - 13:45	0	8	98	0	106	0	0	76	4	80	0	1	0	1	2	0	0	0	0	0	188	878
13:45 - 14:00	0	2	98	0	100	3	0	93	0	96	0	4	0	4	8	0	0	0	0	0	204	930
14:00 - 14:15	1	4	96	0	101	1	0	125	6	132	0	1	0	10	11	0	0	0	0	0	244	984
14:15 - 14:30	0	0	108	0	108	2	0	113	8	123	0	1	0	10	11	0	0	0	0	0	242	1028
14:30 - 14:45	1	3	126	0	130	1	0	100	2	103	0	2	0	5	7	0	0	0	0	0	240	1082
14:45 - 15:00	0	9	134	0	143	3	0	94	4	101	0	6	0	8	14	0	0	0	0	0	258	1131
15:00 - 15:15	1	7	138	0	146	2	0	124	7	133	0	5	0	4	9	0	0	0	0	0	288	1222
15:15 - 15:30	0	4	136	0	140	0	0	138	6	144	0	3	0	9	12	0	0	0	0	0	296	1202
15:30 - 15:45	1	15	149	0	165	0	0	112	5	117	0	1	0	6	7	0	0	0	0	0	289	1207
15:45 - 16:00	0	8	162	0	170	2	0	157	9	168	0	3	0	8	11	0	0	0	0	0	349	1232
16:00 - 16:15	3	2	136	0	141	1	0	102	11	114	0	5	0	8	13	0	0	0	0	0	268	1158
16:15 - 16:30	1	8	145	0	154	0	0	125	9	134	0	8	0	5	13	0	0	0	0	0	301	1168
16:30 - 16:45	1	5	138	0	144	0	0	151	8	159	0	6	0	5	11	0	0	0	0	0	314	1193
16:45 - 17:00	1	7	135	0	143	2	0	116	4	122	0	4	0	6	10	0	0	0	0	0	275	1147
17:00 - 17:15	1	5	144	0	150	2	0	111	6	119	0	4	0	5	9	0	0	0	0	0	278	1116
17:15 - 17:30	0	6	171	0	177	4	0	130	2	136	0	6	0	7	13	0	0	0	0	0	326	1071
17:30 - 17:45	0	3	118	0	121	2	0	121	13	136	0	6	0	5	11	0	0	0	0	0	268	939
17:45 - 18:00	1	10	113	0	124	3	0	108	3	114	0	4	0	2	6	0	0	0	0	0	244	889
18:00 - 18:15	0	1	112	0	113	1	0	99	4	104	3	6	0	7	16	0	0	0	0	0	233	831
18:15 - 18:30	1	3	92	0	96	1	0	76	13	90	0	3	0	5	8	0	0	0	0	0	194	784
18:30 - 18:45	0	4	98	0	102	2	0	103	4	109	0	3	0	4	7	0	0	0	0	0	218	745
18:45 - 19:00	0	12	78	0	90	4	0	76	9	89	0	3	0	4	7	0	0	0	0	0	186	687
19:00 - 19:15	0	3	87	0	90	0	0	79	9	88	0	4	0	4	8	0	0	0	0	0	186	666
19:15 - 19:30	1	3	85	0	89	1	0	57	3	61	0	2	0	3	5	0	0	0	0	0	155	633
19:30 - 19:45	0	2	74	0	76	0	0	75	5	80	0	2	0	2	4	0	0	0	0	0	160	635
19:45 - 20:00	1	0	79	0	80	0	0	70	7	77	1	3	0	4	8	0	0	0	0	0	165	620
20:00 - 20:15	2	2	88	0	92	1	0	48	8	57	0	3	0	1	4	0	0	0	0	0	153	578
20:15 - 20:30	2	5	68	0	75	3	0	72	2	77	0	4	0	1	5	0	0	0	0	0	157	535
20:30 - 20:45	1	0	76	0	77	1	0	59	1	61	0	1	0	6	7	0	0	0	0	0	145	492
20:45 - 21:00	1	4	59	0	64	0	0	45	8	53	0	4	0	2	6	0	0	0	0	0	123	464
21:00 - 21:15	0	3	46	0	49	0	0	51	4	55	0	4	0	2	6	0	0	0	0	0	110	410
21:15 - 21:30	0	2	55	0	57	3	0	47	1	51	0	2	0	4	6	0	0	0	0	0	114	360
21:30 - 21:45	0	1	52	0	53	0	0	54	5	59	0	5	0	0	5	0	0	0	0	0	117	304
21:45 - 22:00	1	1	44	0	46	0	0	19	2	21	0	0	0	2	2	0	0	0	0	0	69	242
22:00 - 22:15	0	0	36	0	36	0	0	19	2	21	0	1	0	2	3	0	0	0	0	0	60	212
22:15 - 22:30	0	1	27	0	28	0	0	25	3	28	0	2	0	0	2	0	0	0	0	0	58	209
22:30 - 22:45	0	0	28	0	28	0	0	23	3	26	0	1	0	0	1	0	0	0	0	0	55	192
22:45 - 23:00	1	1	15	0	17	0	0	20	1	21	0	0	0	1	1	0	0	0	0	0	39	164
23:00 - 23:15	1	1	26	0	28	0	0	27	1	28	0	1	0	0	1	0	0	0	0	0	57	155
23:15 - 23:30	0	2	19	0	21	1	0	18	0	19	0	0	0	1	1	0	0	0	0	0	41	
23:30 - 23:45	0	0	13	0	13	0	0	11	1	12	0	0	0	2	2	0	0	0	0	0	27	1232
23:45 - 0:00	0	1	15	0	16	0	0	13	1	14	0	0	0	0	0	0	0	0	0	0	30	
Total	43	269	6507	0	6819	99	0	6485	314	6898	4	255	0	343	602	0	0	0	0	0	14319	

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
PEAK HOUR	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	PHF
7:30-8:30	1	40	435	0	476	9	0	564	17	590	0	22	0	35	57	0	0	0	0	0	1123	0.856
15:45 - 16:45	5	23	581	0	609	3	0	535	37	575	0	22	0	26	48	0	0	0	0	0	1232	0.883

	Total	Percent
Heavy Vehicles	505	3.5%

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report
(Total)

Prepared For:

Provost & Pritchard Consulting Group
130 North Garden Street
Visalia, CA 93291

LOCATION Lovers Ln @ Cherry Ave
CITY/COUNTY Visalia, Tulare
COLLECTION DATE Tuesday, May 17, 2022
LATITUDE 36.3090927
LONGITUDE -119.2605984
WEATHER Clear

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
Time	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	
0:00 - 0:15	0	1	7	0	8	0	1	19	3	23	0	0	0	0	0	0	0	0	0	0	31	85
0:15 - 0:30	0	0	8	0	8	0	2	8	0	10	0	0	0	0	0	0	0	0	0	0	18	69
0:30 - 0:45	0	0	8	0	8	0	1	9	0	10	0	0	0	0	0	0	0	0	0	0	18	65
0:45 - 1:00	0	0	6	0	6	0	1	8	3	12	0	0	0	0	0	0	0	0	0	0	18	56
1:00 - 1:15	0	0	8	1	9	0	0	5	0	5	0	0	0	1	1	0	0	0	0	0	15	43
1:15 - 1:30	0	0	4	1	5	0	0	8	1	9	0	0	0	0	0	0	0	0	0	0	14	33
1:30 - 1:45	0	0	5	0	5	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	9	22
1:45 - 2:00	0	0	1	0	1	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	5	22
2:00 - 2:15	0	0	4	0	4	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	5	28
2:15 - 2:30	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	3	39
2:30 - 2:45	0	0	2	0	2	0	0	6	0	6	0	0	0	0	0	0	0	0	1	1	9	52
2:45 - 3:00	0	0	5	0	5	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	11	56
3:00 - 3:15	0	0	6	1	7	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	16	69
3:15 - 3:30	0	0	5	0	5	0	0	11	0	11	0	0	0	0	0	0	0	0	0	0	16	68
3:30 - 3:45	0	0	6	0	6	0	0	6	1	7	0	0	0	0	0	0	0	0	0	0	13	87
3:45 - 4:00	0	0	8	0	8	0	0	15	0	15	0	0	0	1	1	0	0	0	0	0	24	124
4:00 - 4:15	0	0	6	0	6	0	0	6	0	6	0	0	0	1	1	0	0	0	2	2	15	160
4:15 - 4:30	0	0	14	0	14	0	0	17	2	19	0	0	0	1	1	0	0	0	1	1	35	216
4:30 - 4:45	0	0	25	0	25	0	0	21	0	21	0	0	0	3	3	0	0	0	1	1	50	286
4:45 - 5:00	0	0	22	0	22	0	0	33	1	34	0	0	0	0	0	0	1	0	3	4	60	354
5:00 - 5:15	0	0	22	0	22	0	1	42	0	43	0	0	0	3	3	0	2	0	1	3	71	432
5:15 - 5:30	0	0	40	0	40	1	1	60	0	62	0	0	0	3	3	0	0	0	0	0	105	463
5:30 - 5:45	0	0	30	0	30	0	0	76	2	78	0	0	0	6	6	0	0	0	4	4	118	474
5:45 - 6:00	0	1	42	0	43	0	2	85	1	88	0	0	0	3	3	0	0	0	4	4	138	505
6:00 - 6:15	0	1	35	2	38	0	1	55	1	57	0	0	0	6	6	0	0	0	1	1	102	545
6:15 - 6:30	0	2	47	7	56	0	0	51	0	51	0	0	0	8	8	0	0	1	0	1	116	667
6:30 - 6:45	0	1	52	0	53	0	2	85	2	89	0	0	0	4	4	0	0	0	3	3	149	786
6:45 - 7:00	1	0	64	5	70	0	3	91	1	95	0	0	0	4	4	0	2	0	7	9	178	941
7:00 - 7:15	0	0	100	5	105	0	1	93	6	100	0	0	0	11	11	0	0	0	8	8	224	1110
7:15 - 7:30	0	3	87	2	92	0	2	117	4	123	0	0	0	1	1	0	0	0	19	19	235	1161
7:30 - 7:45	0	1	120	6	127	0	2	141	5	148	0	0	0	11	11	0	0	0	18	18	304	1160
7:45 - 8:00	0	4	126	1	131	1	8	152	12	173	0	0	0	20	20	0	0	0	23	23	347	1082
8:00 - 8:15	0	10	96	2	108	0	5	125	4	134	0	0	0	16	16	0	0	0	17	17	275	909
8:15 - 8:30	0	7	84	5	96	0	8	106	6	120	0	0	0	12	12	0	1	0	5	6	234	795
8:30 - 8:45	0	3	95	0	98	1	3	85	5	94	0	0	0	27	27	0	0	0	7	7	226	728
8:45 - 9:00	0	4	89	3	96	0	2	66	1	69	0	0	0	5	5	0	0	0	4	4	174	711
9:00 - 9:15	0	2	79	1	82	1	2	64	1	68	0	0	0	1	1	0	0	0	10	10	161	726
9:15 - 9:30	0	3	60	1	64	0	8	79	6	93	0	0	0	4	4	0	0	0	6	6	167	719
9:30 - 9:45	0	0	100	5	105	0	2	91	3	96	0	0	0	3	3	0	0	0	5	5	209	738
9:45 - 10:00	0	1	91	4	96	0	3	78	2	83	0	0	0	3	3	0	0	0	7	7	189	701
10:00 - 10:15	0	4	65	6	75	0	4	63	3	70	0	0	0	2	2	0	0	0	7	7	154	687
10:15 - 10:30	0	0	78	2	80	0	2	92	4	98	0	0	0	4	4	0	0	0	4	4	186	708
10:30 - 10:45	0	0	62	0	62	0	1	98	4	103	0	0	0	2	2	0	0	0	5	5	172	722
10:45 - 11:00	1	1	64	4	70	1	0	96	1	98	0	0	0	3	3	0	0	0	4	4	175	725
11:00 - 11:15	0	1	77	4	82	0	0	80	4	84	0	0	0	4	4	0	0	0	5	5	175	747
11:15 - 11:30	0	3	88	3	94	0	8	83	2	93	0	0	0	8	8	0	0	0	5	5	200	800
11:30 - 11:45	0	4	79	3	86	0	2	79	4	85	0	0	0	1	1	0	1	0	2	3	175	791
11:45 - 12:00	0	1	91	3	95	0	6	87	4	97	0	0	0	3	3	0	0	0	2	2	197	812
12:00 - 12:15	0	1	101	4	106	0	8	97	5	110	0	0	0	4	4	0	0	0	8	8	228	827
12:15 - 12:30	0	1	93	2	96	0	4	81	4	89	0	0	0	3	3	0	0	0	3	3	191	803
12:30 - 12:45	0	0	87	3	90	0	3	88	4	95	0	0	0	4	4	0	0	0	7	7	196	813
12:45 - 13:00	0	1	108	4	113	0	2	92	1	95	0	0	0	2	2	0	0	0	2	2	212	810
13:00 - 13:15	0	1	99	3	103	0	6	89	1	96	0	0	0	3	3	0	0	0	2	2	204	824
13:15 - 13:30	1	4	89	2	96	0	7	89	3	99	0	0	0	2	2	0	1	0	3	4	201	867
13:30 - 13:45	1	6	85	5	97	0	10	73	2	85	0	0	0	2	2	0	0	0	9	9	193	910
13:45 - 14:00	0	1	100	3	104	0	5	89	6	100	0	0	0	7	7	0	0	0	15	15	226	960
14:00 - 14:15	0	4	98	4	106	0	5	115	6	126	0	0	0	8	8	0	1	0	6	7	247	997
14:15 - 14:30	0	3	95	7	105	0	11	106	4	121	0	0	0	11	11	0	0	0	7	7	244	1040
14:30 - 14:45	0	3	118	5	126	0	4	98	5	107	0	0	0	5	5	0	0	0	5	5	243	1074
14:45 - 15:00	0	5	135	5	145	0	5	91	5	101	0	0	0	6	6	0	0	0	11	11	263	1156
15:00 - 15:15	0	5	126	5	136	1	9	117	2	129	0	0	0	15	15	0	0	0	10	10	290	1219
15:15 - 15:30	1	7	124	2	134	0	7	120	3	130	0	1	0	8	9	0	1	0	4	5	278	1209
15:30 - 15:45	0	5	140	5	150	0	18	138	12	168	0	0	0	3	3	0	0	0	4	4	325	1243
15:45 - 16:00	0	8	144	14	166	0	11	137	2	150	0	0	0	5	5	0	0	0	5	5	326	1228
16:00 - 16:15	0	5	134	6	145	0	11	115	4	130	0	0	0	2	2	0	0	0	3	3	280	1192
16:15 - 16:30	1	1	148	4	154	0	12	134	4	150	0	0	1	1	2	0	0	1	5	6	312	1221
16:30 - 16:45	0	8	120	11	139	3	9	142	4	158	0	0	0	4	4	0	0	1	8	9	310	1249
16:45 - 17:00	0	6	138	6	150	0	10	120	3	133	0	0	0	4	4	0	0	0	3	3	290	1222
17:00 - 17:15	0	2	136	11	149	0	10	129	6	145	0	0	0	6	6	0	0	0	9	9	309	1203
17:15 - 17:30	0	3	167	10	180	0	12	127	8	147	0	0	0	8	8	0	0	0	5	5	340	1137
17:30 - 17:45	1	0	117	7	125	0	12	122	7	141	0	0	0	8	8	0	0	0	9	9	283	1007
17:45 - 18:00	0	1	119	7	127	0	8	109	15	132	0	0	2	2	4	0	0	0	8	8	271	954
18:00 - 18:15	0	4	104	11	119	0	7	100	7	114	0	0	0	3	3	0	0	0	7	7	243	874
18:15 - 18:30	0	3	88	7	98	2	8	88	7	105	0	0	0	4	4	0	0	0	3	3	210	828
18:30 - 18:45	0	1	90	10	101	0	10	107	8	125	0	0	0	1	1	0	0	0	3	3	230	773
18:45 - 19:00	0	7	74	6	87	0	8	84	5	97	0	0	0	5	5	0	0	0	2	2	191	720
19:00 - 19:15	0	3	82	4	89	0	8	86	6	100	0	0	0	4	4	0	0	0	4	4	197	703
19:15 - 19:30	0	5	77	6	88	0	2	54	5	61	0	0	0	2	2	0	0	0	4	4	155	675
19:30 - 19:45	0	0	68	10	78	0	9	81	7	97	0	0	0	0	0	0	1	0	1	2	177	671
19:45 - 20:00	0	2	66	9	77	1	5	79	5	90	0	0	0	1	1	0	0	0	6	6	174	657
20:00 - 20:15	1	1	87	5	94	0	5	65	1	71	0	0	0	2	2	0	0	0	2	2	169	624
20:15 - 20:30	0	5	66	4	75	0	4	60	3	67	0	0	0	5	5	0	0	0	4	4	151	577
20:30 - 20:45	0	2	74	2	78	0	4	66	5	75	0	0	0	5	5	0	0	0	5	5	163	552
20:45 - 21:00	0	1	64	4	69	1	7	53	4	65	0	0	0	0	0	0	0	0	7	7	141	511
21:00 - 21:15	0	0	55	1	56	0	6	59	0	65	0	0	0	1	1	0	0	0	0	0	122	448
21:15 - 21:30	0	3	59	3	65	0	7	47	4	58	0	0	0	3	3	0	0	0	0	0	126	390
21:30 - 21:45	0	1	54	6	61	0	3	48	2	53	0	0	0	5	5	0	0	0	3	3	122	335
21:45 - 22:00	0	1	43	0	44	0	6	24	1	31	0	0	0	2	2	0	0	0	1	1	78	280
22:00 - 22:15	0	0	35	1	36	0	3	22	2	27	0	0	0	1	1	0	0	0	0	0	64	241
22:15 - 22:30	0	0	29	0	29	0	5	34	1	40	0	0	0	0	0	0	0	0	2	2	71	236
22:30 - 22:45	0	1	27	3	31	0	2	28	2	32	0	0	0	3	3	0	0	0	1	1	67	203
22:45 - 23:00	0	0	12	3	15	0	1	23	0	24	0	0	0	0	0	0	0	0	0	0	39	164
23:00 - 23:15	0	0	26	1	27	0	2	29	0	31	0	0	0	0	0	0	0	0	1	1	59	159
23:15 - 23:30	0	0	17	2	19	0	1	18	0	19	0	0	0	0	0	0	0	0	0	0	38	
23:30 - 23:45	0	0	11	1	12	0	1	12	0	13	0	0	0	1	1	0	0	0	2	2	28	1249
23:45 - 0:00	0	0	19	0	19	0	2	13	0	15	0	0	0	0	0	0	0	0	0	0	34	
Total	8	179	6361	311	6859	13	399	6517	290	7219	0	1	3	356	360	0	11	3	400	414	14852	

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
PEAK HOUR	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	PHF
16:30 - 17:30	0	18	429	11	458	1	17	535	25	578	0	0	0	48	48	0	0	0	77	77	1161	0.836
16:30 - 17:30	0	19	561	38	618	3	41	518	21	583	0	0	0	22	22	0	0	1	25	26	1249	0.918

	Total	Percent
Heavy Vehicles	527	3.5%

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
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Turning Movement Report
(Total)

Prepared For:
Provost & Pritchard Consulting Group
130 North Garden Street
Visalia, CA 93291

LOCATION Lovers Ln @ Walnut Ave
CITY/COUNTY Visalia, Tulare
COLLECTION DATE Tuesday, May 17, 2022
LATITUDE 36.3127057
LONGITUDE -119.2605956
WEATHER Clear

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
Time	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	
0:00 - 0:15	0	0	7	2	9	0	4	22	5	31	0	4	1	0	5	0	0	1	1	2	47	133
0:15 - 0:30	0	0	8	0	8	0	2	11	3	16	0	3	3	0	6	0	0	2	1	3	33	102
0:30 - 0:45	0	0	6	1	7	0	2	9	0	11	0	3	4	0	7	0	0	1	2	3	28	83
0:45 - 1:00	0	0	5	2	7	0	2	11	1	14	0	1	0	1	2	1	0	1	0	2	25	67
1:00 - 1:15	0	0	8	0	8	0	0	3	0	3	0	1	2	1	4	0	1	0	0	1	16	49
1:15 - 1:30	0	0	3	1	4	0	0	5	0	5	0	1	0	1	2	0	3	0	0	3	14	46
1:30 - 1:45	0	0	2	2	4	0	0	3	0	3	0	0	1	0	1	0	0	3	1	4	12	38
1:45 - 2:00	0	0	1	0	1	0	0	3	0	3	0	1	0	1	2	0	0	0	1	1	7	40
2:00 - 2:15	0	0	2	1	3	0	0	1	0	1	0	3	4	0	7	0	0	1	1	2	13	47
2:15 - 2:30	0	0	0	0	0	0	0	1	1	2	0	2	0	0	2	0	1	1	0	2	6	53
2:30 - 2:45	0	0	3	0	3	0	1	4	0	5	0	0	1	2	3	0	0	3	0	3	14	64
2:45 - 3:00	0	0	5	0	5	0	1	4	1	6	0	0	0	0	0	0	1	1	1	3	14	76
3:00 - 3:15	0	0	5	0	5	0	0	8	1	9	0	0	0	1	1	0	0	1	3	4	19	97
3:15 - 3:30	0	0	6	2	8	0	0	5	0	5	0	0	0	0	0	0	1	0	3	4	17	103
3:30 - 3:45	0	0	3	1	4	0	1	8	0	9	0	2	2	0	4	0	2	4	3	9	26	127
3:45 - 4:00	0	0	6	2	8	0	0	11	1	12	0	2	3	1	6	0	2	3	4	9	35	170
4:00 - 4:15	0	0	9	0	9	0	2	5	1	8	0	0	1	1	2	0	2	1	3	6	25	211
4:15 - 4:30	0	1	10	2	13	0	1	13	2	16	0	2	0	0	2	0	4	3	3	10	41	272
4:30 - 4:45	0	0	24	3	27	0	3	15	4	22	0	5	0	2	7	0	3	5	5	13	69	367
4:45 - 5:00	0	0	24	0	24	0	2	30	1	33	0	2	1	0	3	0	3	10	3	16	76	442
5:00 - 5:15	0	0	24	2	26	0	0	29	2	31	0	4	2	0	6	0	10	9	4	23	86	533
5:15 - 5:30	0	1	36	2	39	0	6	53	2	61	0	4	0	6	10	0	6	13	7	26	136	575
5:30 - 5:45	0	0	30	4	34	0	3	60	1	64	0	5	11	2	18	0	14	10	4	28	144	600
5:45 - 6:00	0	4	36	5	45	0	9	70	3	82	0	7	3	8	18	0	4	12	6	22	167	654
6:00 - 6:15	0	0	31	5	36	1	5	43	3	52	0	2	9	5	16	0	6	9	9	24	128	733
6:15 - 6:30	1	4	40	7	52	1	8	35	4	48	0	8	17	9	34	0	7	8	12	27	161	897
6:30 - 6:45	1	2	49	5	57	1	5	65	3	74	1	8	12	12	33	0	12	8	14	34	198	1066
6:45 - 7:00	1	5	60	8	74	1	12	57	7	77	0	9	16	9	34	0	26	22	13	61	246	1289
7:00 - 7:15	5	16	82	5	108	0	12	72	9	93	0	12	13	8	33	0	15	29	14	58	292	1556
7:15 - 7:30	3	8	89	8	108	0	16	81	13	110	0	15	14	8	37	0	31	31	13	75	330	1685
7:30 - 7:45	3	24	94	14	135	3	15	90	19	127	0	20	26	24	70	0	32	43	14	89	421	1715
7:45 - 8:00	7	29	94	22	152	2	20	113	35	170	0	20	37	25	82	0	27	67	15	109	513	1585
8:00 - 8:15	1	36	77	10	124	1	18	99	22	140	0	19	24	26	69	0	10	66	12	88	421	1370
8:15 - 8:30	2	14	60	9	85	2	16	88	23	129	0	18	47	14	79	0	14	40	13	67	360	1218
8:30 - 8:45	0	15	80	8	103	1	10	67	17	95	0	9	26	10	45	0	12	24	12	48	291	1125
8:45 - 9:00	1	9	70	15	95	3	18	59	14	94	0	20	25	8	53	0	9	30	17	56	298	1153
9:00 - 9:15	0	6	78	9	93	5	14	54	8	81	0	9	19	7	35	0	13	27	20	60	269	1166
9:15 - 9:30	2	10	45	9	66	1	12	69	18	100	0	13	18	9	40	0	14	32	15	61	267	1149
9:30 - 9:45	0	14	77	11	102	1	18	69	16	104	0	22	13	9	44	0	20	35	14	69	319	1193
9:45 - 10:00	4	12	71	10	97	1	17	54	28	100	0	17	20	10	47	0	19	32	16	67	311	1182
10:00 - 10:15	0	8	61	6	75	0	11	57	20	88	0	9	24	7	40	0	8	32	9	49	252	1170
10:15 - 10:30	1	10	69	8	88	0	14	82	18	114	0	12	27	7	46	0	10	37	16	63	311	1217
10:30 - 10:45	1	8	53	7	69	0	23	80	21	124	0	14	23	10	47	0	13	39	16	68	308	1229
10:45 - 11:00	1	6	57	10	74	1	22	77	18	118	0	21	25	10	56	0	7	32	12	51	299	1218
11:00 - 11:15	2	13	60	5	80	0	14	67	24	105	0	17	34	15	66	0	8	31	9	48	299	1237
11:15 - 11:30	0	14	74	13	101	1	18	77	20	116	0	24	22	7	53	0	10	27	16	53	323	1288
11:30 - 11:45	1	10	52	15	78	2	17	55	25	99	0	15	27	12	54	0	17	37	12	66	297	1271
11:45 - 12:00	1	13	67	8	89	1	18	66	28	113	0	10	28	6	44	0	20	35	17	72	318	1291
12:00 - 12:15	1	11	76	18	106	2	17	84	25	128	0	13	33	7	53	0	15	35	13	63	350	1293
12:15 - 12:30	2	10	74	19	105	0	14	72	20	106	0	15	20	8	43	0	10	33	9	52	306	1275
12:30 - 12:45	0	9	79	9	97	2	20	73	20	115	0	6	24	7	37	0	18	37	13	68	317	1300
12:45 - 13:00	0	9	87	14	110	3	13	72	17	105	0	12	26	9	47	0	16	27	15	58	320	1311
13:00 - 13:15	0	12	68	13	93	1	19	76	21	117	0	20	34	6	60	0	15	37	10	62	332	1357
13:15 - 13:30	0	8	79	9	96	4	25	76	24	129	0	12	31	9	52	0	11	30	13	54	331	1404
13:30 - 13:45	3	12	76	12	103	2	14	67	17	100	0	16	34	8	58	0	11	34	22	67	328	1459
13:45 - 14:00	5	9	69	18	101	2	18	75	25	120	0	28	29	9	66	0	14	53	12	79	366	1515
14:00 - 14:15	2	6	88	10	106	1	21	87	17	126	0	23	45	27	95	0	14	29	9	52	379	1559
14:15 - 14:30	2	6	75	16	99	2	20	89	23	134	0	20	39	18	77	0	20	45	11	76	386	1633
14:30 - 14:45	0	11	108	17	136	3	20	77	19	119	0	17	31	11	59	0	23	35	12	70	384	1654
14:45 - 15:00	3	17	95	24	139	1	21	73	21	116	0	13	35	10	58	0	13	65	19	97	410	1782
15:00 - 15:15	3	15	105	17	140	2	25	102	26	155	0	25	47	21	93	0	15	39	11	65	453	1838
15:15 - 15:30	2	12	80	24	118	3	24	92	27	146	0	23	39	17	79	0	16	36	12	64	407	1799
15:30 - 15:45	2	16	113	23	154	1	38	119	25	183	0	16	49	19	84	0	24	46	21	91	512	1889
15:45 - 16:00	1	15	100	26	142	2	28	110	17	157	0	31	37	22	90	0	22	33	22	77	466	1811
16:00 - 16:15	3	17	89	20	129	1	26	93	22	142	0	15	36	12	63	0	20	44	16	80	414	1784
16:15 - 16:30	2	7	124	28	161	0	40	127	28	195	0	25	38	9	72	0	17	35	17	69	497	1848
16:30 - 16:45	3	13	90	29	135	0	26	109	19	154	0	13	31	24	68	0	22	37	18	77	434	1853
16:45 - 17:00	1	10	87	32	130	1	26	98	24	149	0	19	46	16	81	0	22	45	12	79	439	1859
17:00 - 17:15	0	16	115	26	157	1	25	109	23	158	0	30	50	18	98	0	12	41	12	65	478	1827
17:15 - 17:30	0	17	130	34	181	1	32	109	36	178	0	15	53	19	87	0	18	32	6	56	502	1725
17:30 - 17:45	3	12	92	18	125	1	31	89	31	152	0	17	47	19	83	0	28	33	19	80	440	1575
17:45 - 18:00	2	7	86	17	112	0	21	101	23	145	0	25	42	10	77	0	23	44	6	73	407	1505
18:00 - 18:15	4	12	84	17	117	0	19	83	24	126	0	23	34	10	67	0	12	47	7	66	376	1387
18:15 - 18:30	1	10	66	22	99	0	21	77	26	124	0	12	49	15	76	0	15	27	11	53	352	1318
18:30 - 18:45	2	6	63	18	89	2	21	99	20	142	0	24	36	9	69	0	24	30	16	70	370	1231
18:45 - 19:00	2	5	66	14	87	0	13	64	15	92	0	12	33	11	56	0	11	32	11	54	289	1141
19:00 - 19:15	0	8	63	15	86	0	12	79	15	106	0	18	32	9	59	0	11	33	12	56	307	1143
19:15 - 19:30	1	4	54	16	75	0	23	48	19	90	0	12	37	3	52	0	10	27	11	48	265	1102
19:30 - 19:45	1	3	54	11	69	0	17	63	11	91	0	13	33	6	52	0	24	34	10	68	280	1083
19:45 - 20:00	1	14	48	19	82	0	17	75	18	110	0	9	33	4	46	0	9	38	6	53	291	1033
20:00 - 20:15	1	9	56	22	88	1	24	49	15	89	0	10	20	6	36	0	12	30	11	53	266	964
20:15 - 20:30	3	4	52	12	71	0	17	54	11	82	0	9	25	7	41	0	9	35	8	52	246	910
20:30 - 20:45	1	7	52	11	71	0	9	53	10	72	0	17	26	7	50	0	11	21	5	37	230	836
20:45 - 21:00	1	2	52	13	68	0	11	43	11	65	0	10	34	7	51	0	9	19	10	38	222	764
21:00 - 21:15	0	3	35	12	50	0	25	43	13	81	0	13	27	5	45	0	10	23	3	36	212	657
21:15 - 21:30	0	5	34	9	48	0	13	53	6	72	0	9	14	6	29	0	7	11	5	23	172	559
21:30 - 21:45	2	5	35	13	55	1	8	42	13	64	0	3	16	2	21	0	5	9	4	18	158	485
21:45 - 22:00	2	5	23	11	41	0	8	23	7	38	0	11	7	3	21	0	0	11	4	15	115	429
22:00 - 22:15	0	1	18	11	30	1	11	19	7	38	0	7	18	2	27	0	2	10	7	19	114	375
22:15 - 22:30	0	2	22	5	29	0	7	29	6	42	0	5	7	3	15	0	2	6	4	12	98	336
22:30 - 22:45	0	2	20	8	30	0	6	22	3	31	0	5	16	4	25	0	5	8	3	16	102	293
22:45 - 23:00	0	1	11	0	12	0	6	12	6	24	0	2	6	3	11	0	3	10	1	14	61	229
23:00 - 23:15	0	1	14	8	23	0	4	22	2	28	0	3	10	3	16	0	4	2	2	8	75	217
23:15 - 23:30	0	1	15	2	18	0	2	15	3	20	0	3	6	1	10	0	4	2	1	7	55	
23:30 - 23:45	0	2	8	0	10	0	2	11	1	14	0	1	4	0	5	0	1	6	2	9	38	1889
23:45 - 0:00	0	2	14	1	17	0	2	15	5	22	0	4	2	0	6	0	2	1	1	4	49	
Total	100	683	4997	1002	6782	70	1254	5332	1259	7915	1	1079	2006	755	3841	1	1038	2255	871	4165	22703	

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
PEAK HOUR	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	PHF
7:30 - 8:30	13	103	325	55	496	8	69	390	99	566	0	77	134	89	300	0	83	216	54	353	1715	0.836
15:30 - 16:30	8	55	426	97	586	4	132	449	92	677	0	87	160	62	309	0	83	158	76	317	1889	0.922

	Total	Percent
Heavy Vehicles	784	3.5%

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report
(Total)

Prepared For:
Provost & Pritchard Consulting Group
130 North Garden Street
Visalia, CA 93291

LOCATION McAuliff St @ Walnut Ave
CITY/COUNTY Visalia, Tulare
COLLECTION DATE Tuesday, May 17, 2022
LATITUDE 36.3126418
LONGITUDE -119.2516071
WEATHER Clear

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
Time	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	
0:00 - 0:15	0	0	0	0	0	0	2	0	1	3	0	3	3	0	6	0	0	2	0	2	11	33
0:15 - 0:30	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	0	0	1	1	2	5	28
0:30 - 0:45	0	0	1	0	1	0	2	0	0	2	0	2	3	0	5	0	0	3	0	3	11	28
0:45 - 1:00	0	0	0	0	0	0	0	0	0	0	0	1	3	1	5	0	0	1	0	1	6	25
1:00 - 1:15	0	0	0	0	0	0	1	0	2	3	0	0	2	0	2	0	0	0	1	1	6	19
1:15 - 1:30	0	1	1	0	2	0	0	0	1	1	0	0	1	0	1	0	0	1	0	1	5	24
1:30 - 1:45	0	1	1	0	2	0	2	0	0	2	0	0	2	1	3	0	0	1	0	1	8	23
1:45 - 2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
2:00 - 2:15	0	0	2	0	2	0	1	0	2	3	0	1	4	0	5	0	1	0	0	1	11	25
2:15 - 2:30	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	2	3	4	18
2:30 - 2:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	3	1	4	6	24
2:45 - 3:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	3	0	3	4	35
3:00 - 3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4	48
3:15 - 3:30	0	1	1	0	2	0	1	0	0	1	0	2	2	0	4	0	0	2	1	3	10	55
3:30 - 3:45	0	2	5	0	7	0	0	0	0	0	0	2	2	0	4	0	0	6	0	6	17	60
3:45 - 4:00	0	4	2	0	6	0	1	0	0	1	0	0	5	0	5	0	0	5	0	5	17	74
4:00 - 4:15	0	1	1	1	3	0	0	0	1	1	0	0	4	0	4	0	0	3	0	3	11	78
4:15 - 4:30	0	3	1	0	4	0	1	0	1	2	0	0	2	0	2	0	0	6	1	7	15	95
4:30 - 4:45	0	2	3	1	6	0	3	0	4	7	0	3	8	0	11	0	0	5	2	7	31	118
4:45 - 5:00	0	3	2	0	5	0	1	0	2	3	0	0	3	2	5	0	0	6	2	8	21	139
5:00 - 5:15	0	2	1	1	4	0	1	0	4	5	0	2	3	0	5	0	0	12	2	14	28	170
5:15 - 5:30	0	2	3	1	6	0	0	0	2	2	0	1	6	0	7	0	0	21	2	23	38	196
5:30 - 5:45	0	2	5	0	7	0	4	0	1	5	0	3	14	0	17	0	0	22	1	23	52	233
5:45 - 6:00	0	3	6	0	9	0	7	0	2	9	0	1	13	0	14	0	0	16	4	20	52	261
6:00 - 6:15	0	2	6	0	8	0	6	0	2	8	0	5	11	3	19	0	0	15	4	19	54	324
6:15 - 6:30	0	3	8	1	12	0	5	2	4	11	0	3	20	3	26	0	0	19	7	26	75	371
6:30 - 6:45	0	5	5	2	12	0	1	1	8	10	0	3	20	1	24	1	1	22	10	34	80	432
6:45 - 7:00	0	2	13	2	17	0	5	2	13	20	0	6	22	3	31	0	2	35	10	47	115	543
7:00 - 7:15	0	7	16	1	24	0	2	1	12	15	0	1	23	5	29	0	0	29	4	33	101	652
7:15 - 7:30	0	5	10	5	20	0	5	0	13	18	0	7	30	2	39	0	1	43	15	59	136	743
7:30 - 7:45	1	6	13	4	24	0	9	1	22	32	0	8	44	0	52	1	0	61	21	83	191	767
7:45 - 8:00	0	11	11	1	23	0	17	3	15	35	0	16	64	3	83	1	1	62	19	83	224	676
8:00 - 8:15	0	4	9	2	15	0	7	3	15	25	0	14	34	4	52	0	1	64	35	100	192	568
8:15 - 8:30	0	5	6	1	12	0	12	3	12	27	0	14	42	3	59	0	1	41	20	62	160	488
8:30 - 8:45	0	6	5	0	11	0	7	2	10	19	0	9	20	2	31	0	0	34	5	39	100	433
8:45 - 9:00	0	1	3	0	4	0	5	2	11	18	1	14	39	1	55	0	2	32	5	39	116	447
9:00 - 9:15	0	2	5	1	8	0	7	3	8	18	0	10	30	3	43	0	0	36	7	43	112	450
9:15 - 9:30	0	4	9	0	13	0	3	0	14	17	0	6	23	2	31	0	1	37	6	44	105	436
9:30 - 9:45	0	5	7	0	12	0	4	2	12	18	0	5	27	2	34	0	2	43	5	50	114	462
9:45 - 10:00	0	8	3	2	13	0	7	0	10	17	0	12	21	4	37	0	0	45	7	52	119	452
10:00 - 10:15	0	2	3	2	7	0	7	2	7	16	0	5	26	4	35	0	0	32	8	40	98	445
10:15 - 10:30	0	4	5	1	10	0	8	2	7	17	0	10	32	3	45	1	1	49	8	59	131	453
10:30 - 10:45	0	5	5	0	10	0	4	0	6	10	0	7	29	1	37	1	0	37	9	47	104	436
10:45 - 11:00	0	4	3	0	7	0	6	0	8	14	0	9	41	2	52	0	0	35	4	39	112	468
11:00 - 11:15	0	6	1	1	8	0	4	2	7	13	0	8	35	3	46	0	0	34	5	39	106	490
11:15 - 11:30	0	1	4	0	5	0	5	0	11	16	0	6	36	1	43	0	0	39	11	50	114	514
11:30 - 11:45	0	6	6	1	13	0	8	2	12	22	0	11	38	0	49	0	1	43	8	52	136	526
11:45 - 12:00	0	3	7	0	10	0	5	4	11	20	0	11	38	2	51	0	1	45	7	53	134	530
12:00 - 12:15	0	3	1	0	4	0	4	1	14	19	0	17	39	0	56	0	0	44	7	51	130	509
12:15 - 12:30	0	3	6	0	9	0	11	2	8	21	0	18	40	3	61	0	1	29	5	35	126	526
12:30 - 12:45	0	7	3	1	11	0	8	3	11	22	0	6	42	2	50	1	1	42	13	57	140	545
12:45 - 13:00	0	7	1	2	10	0	3	1	10	14	0	16	30	1	47	0	1	35	6	42	113	553
13:00 - 13:15	0	5	3	1	9	0	10	3	14	27	0	15	41	2	58	0	1	41	11	53	147	584
13:15 - 13:30	0	6	8	0	14	0	7	4	16	27	0	12	47	2	61	0	2	34	7	43	145	591
13:30 - 13:45	0	3	4	2	9	0	8	3	9	20	0	14	37	3	54	0	0	53	12	65	148	602
13:45 - 14:00	0	6	5	0	11	0	13	4	7	24	0	10	43	1	54	0	1	43	11	55	144	624
14:00 - 14:15	0	4	8	0	12	0	7	1	16	24	0	14	48	5	67	0	3	32	16	51	154	659
14:15 - 14:30	0	6	4	2	12	0	10	1	12	23	0	14	55	1	70	0	0	45	6	51	156	667
14:30 - 14:45	0	4	5	1	10	0	13	3	15	31	0	17	41	3	61	0	4	49	15	68	170	700
14:45 - 15:00	0	2	3	1	6	0	8	1	13	22	0	18	55	1	74	0	1	64	12	77	179	761
15:00 - 15:15	0	6	4	1	11	0	8	0	5	13	0	17	57	1	75	2	2	44	15	63	162	786
15:15 - 15:30	0	3	7	2	12	0	16	3	13	32	0	17	64	1	82	0	1	49	13	63	189	815
15:30 - 15:45	0	6	4	4	14	0	12	2	8	22	0	22	71	5	98	2	0	72	23	97	231	823
15:45 - 16:00	0	10	7	2	19	0	13	4	19	36	0	21	53	5	79	0	4	49	17	70	204	776
16:00 - 16:15	0	7	3	2	12	0	14	4	16	34	0	23	52	2	77	0	1	48	19	68	191	772
16:15 - 16:30	0	5	9	0	14	0	15	5	8	28	0	13	74	7	94	1	2	49	9	61	197	762
16:30 - 16:45	0	3	3	0	6	0	14	3	22	39	0	14	54	6	74	0	0	51	14	65	184	777
16:45 - 17:00	0	2	8	2	12	0	19	4	10	33	0	21	66	4	91	0	2	55	7	64	200	794
17:00 - 17:15	0	2	3	1	6	0	10	3	18	31	0	20	71	2	93	0	1	44	6	51	181	769
17:15 - 17:30	0	2	12	2	16	0	15	5	14	34	0	30	75	3	108	0	0	36	18	54	212	748
17:30 - 17:45	0	7	9	2	18	0	13	6	16	35	0	19	57	4	80	0	2	51	15	68	201	702
17:45 - 18:00	0	7	6	0	13	0	10	4	9	23	0	14	63	1	78	0	0	48	13	61	175	643
18:00 - 18:15	0	6	6	1	13	0	8	2	11	21	0	12	53	1	66	1	1	50	8	60	160	604
18:15 - 18:30	0	3	8	3	14	0	10	3	16	29	0	16	60	3	79	2	1	31	10	44	166	569
18:30 - 18:45	0	5	4	2	11	0	6	2	11	19	0	12	46	3	61	0	1	43	7	51	142	538
18:45 - 19:00	0	6	7	0	13	0	13	3	13	29	0	17	37	3	57	0	1	25	11	37	136	541
19:00 - 19:15	0	3	3	1	7	0	12	1	9	22	0	14	36	0	50	3	0	36	7	46	125	545
19:15 - 19:30	0	5	1	1	7	0	6	3	7	16	0	16	48	3	67	0	0	39	6	45	135	546
19:30 - 19:45	0	8	5	1	14	0	8	2	9	19	0	13	38	0	51	0	2	48	11	61	145	526
19:45 - 20:00	0	3	5	0	8	0	13	2	5	20	0	17	46	1	64	0	0	36	12	48	140	472
20:00 - 20:15	0	4	5	1	10	0	11	1	11	23	0	13	41	1	55	0	0	35	3	38	126	447
20:15 - 20:30	0	4	1	0	5	0	6	5	6	17	0	15	37	1	53	0	0	36	4	40	115	427
20:30 - 20:45	0	1	3	0	4	0	2	3	6	11	0	9	30	4	43	0	0	27	6	33	91	384
20:45 - 21:00	0	2	6	1	9	0	3	2	9	14	0	12	39	1	52	0	1	25	14	40	115	362
21:00 - 21:15	0	4	7	0	11	0	4	2	9	15	0	14	34	0	48	0	0	26	6	32	106	289
21:15 - 21:30	0	2	2	0	4	0	5	1	2	8	0	2	36	1	39	0	1	14	6	21	72	239
21:30 - 21:45	0	0	0	1	1	0	6	1	3	10	0	6	27	3	36	0	0	14	8	22	69	203
21:45 - 22:00	0	0	2	0	2	0	6	0	1	7	0	11	11	0	22	0	1	8	2	11	42	179
22:00 - 22:15	0	1	0	0	1	0	2	1	4	7	0	11	18	2	31	0	0	14	3	17	56	164
22:15 - 22:30	0	2	0	0	2	0	2	1	2	5	0	2	14	1	17	0	1	6	5	12	36	141
22:30 - 22:45	0	3	0	0	3	0	1	1	2	4	0	2	22	0	24	0	0	10	4	14	45	130
22:45 - 23:00	0	0	1	0	1	0	4	2	4	10	0	1	7	0	8	0	0	6	2	8	27	106
23:00 - 23:15	0	0	2	0	2	0	2	1	1	4	0	5	16	0	21	0	0	6	0	6	33	88
23:15 - 23:30	0	0	4	0	4	0	1	0	3	4	0	2	8	0	10	0	0	5	2	7	25	
23:30 - 23:45	0	0	0	1	1	0	3	1	2	6	0	2	5	0	7	0	0	5	2	7	21	823
23:45 - 0:00	0	1	0	0	1	0	0	0	2	2	0	2	1	0	3	0	0	1	2	3	9	
Total	1	313	396	72	782	0	571	147	725	1443	1	850	2815	154	3820	17	56	2709	691	3473	9518	

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
PEAK HOUR	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	PHF
7:30 - 8:30	1	26	39	8	74	0	45	10	64	119	0	52	184	10	246	2	3	228	95	328	767	0.856
15:30 - 16:30	0	28	23	8	59	0	54	15	51	120	0	79	250	19	348	3	7	218	68	296	823	0.891

	Total	Percent
Heavy Vehicles	193	2.0%

Turning Movement Report
(Total)

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Prepared For:
Provost & Pritchard Consulting Group
130 North Garden Street
Visalia, CA 93291

LOCATION McAuliff St @ Cherry Ave
CITY/COUNTY Visalia, Tulare
COLLECTION DATE Tuesday, May 17, 2022
LATITUDE 36.3090426
LONGITUDE -119.2517298
WEATHER Clear

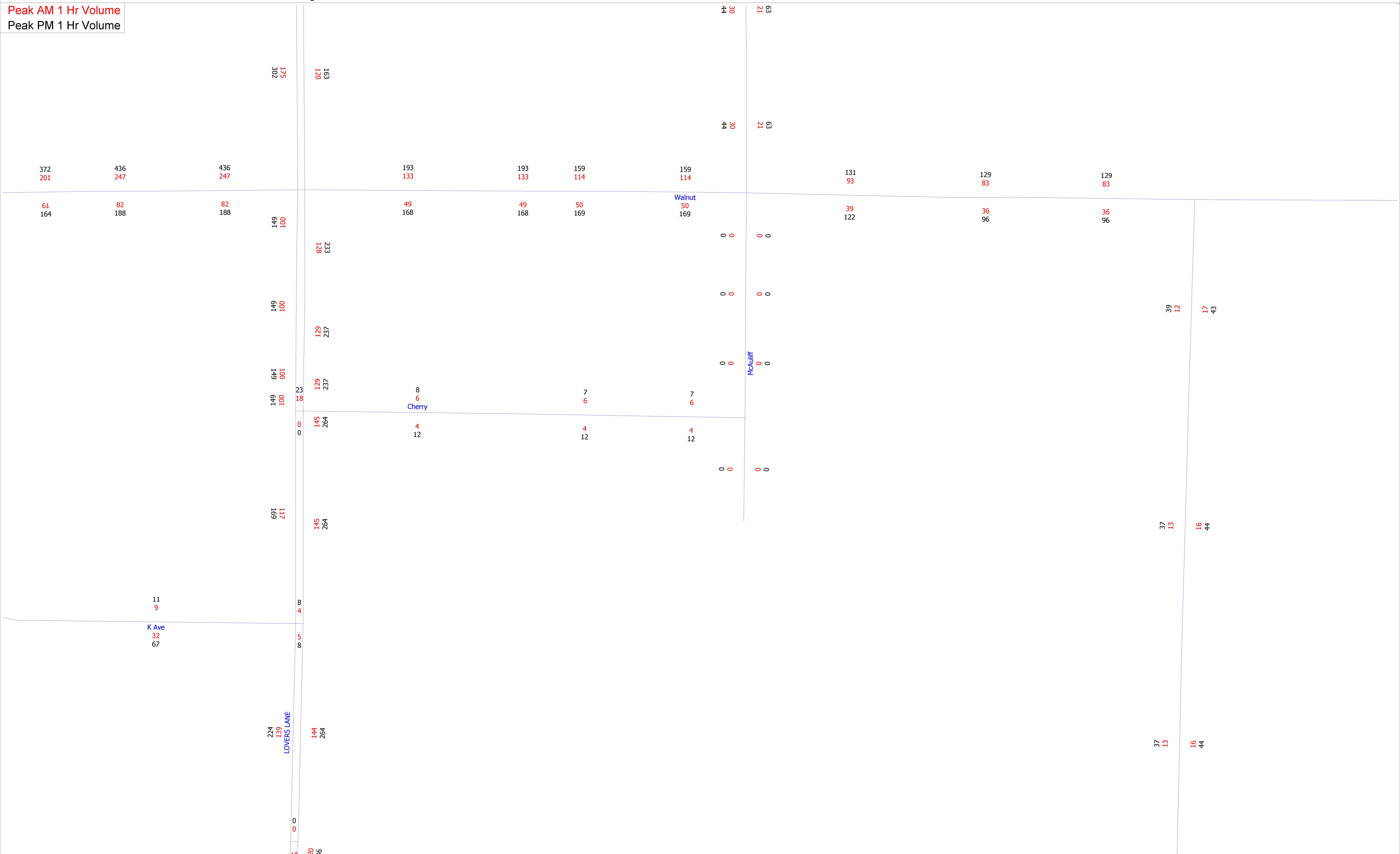
	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
Time	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	
0:00 - 0:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	3
0:15 - 0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	4
0:30 - 0:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	3
0:45 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
1:00 - 1:15	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2	4
1:15 - 1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
1:30 - 1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	5
1:45 - 2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
2:00 - 2:15	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	2	3	3
2:15 - 2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 - 2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2:45 - 3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
3:00 - 3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
3:15 - 3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	9
3:30 - 3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	7
3:45 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	7
4:15 - 4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:30 - 4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	9
4:45 - 5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	15
5:00 - 5:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	21
5:15 - 5:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	3	3	4	25
5:30 - 5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	8	8	32
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	8	8	36
6:00 - 6:15	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	4	4	5	48
6:15 - 6:30	0	0	0	0	0	0	0	0	2	2	0	1	2	0	3	0	0	2	4	6	11	67
6:30 - 6:45	0	0	0	0	0	0	1	0	1	2	0	0	1	0	1	0	0	5	4	9	12	73
6:45 - 7:00	0	0	0	0	0	0	2	0	3	5	0	1	1	0	2	0	0	3	10	13	20	88
7:00 - 7:15	0	0	0	0	0	0	2	0	1	3	0	2	2	0	4	0	0	7	10	17	24	102
7:15 - 7:30	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	7	7	14	17	103
7:30 - 7:45	0	0	0	0	0	0	1	0	3	4	0	3	3	0	6	0	0	11	6	17	27	103
7:45 - 8:00	0	0	0	0	0	0	0	0	9	9	0	2	5	0	7	0	0	9	9	18	34	94
8:00 - 8:15	0	0	0	0	0	0	2	0	4	6	1	1	10	0	12	0	0	5	2	7	25	70
8:15 - 8:30	0	0	0	0	0	0	1	0	2	3	0	1	5	0	6	0	0	3	5	8	17	53
8:30 - 8:45	0	0	0	0	0	0	2	0	0	2	0	3	4	0	7	0	0	5	4	9	18	48
8:45 - 9:00	0	0	0	0	0	0	2	0	2	4	0	1	1	0	2	0	0	1	3	4	10	45
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	8	8	53
9:15 - 9:30	0	0	0	0	0	0	1	0	2	3	0	3	1	0	4	0	0	1	4	5	12	67
9:30 - 9:45	0	0	0	0	0	0	2	0	1	3	0	2	2	0	4	0	0	5	3	8	15	72
9:45 - 10:00	0	0	0	0	0	0	3	0	0	3	0	4	2	0	6	0	0	4	5	9	18	68
10:00 - 10:15	0	3	0	0	3	0	5	0	1	6	0	1	4	0	5	0	0	6	2	8	22	69
10:15 - 10:30	0	0	0	0	0	0	2	0	1	3	0	3	4	0	7	0	0	2	5	7	17	67
10:30 - 10:45	0	1	0	0	1	0	1	0	0	1	0	1	1	0	2	0	0	1	6	7	11	65
10:45 - 11:00	0	0	0	0	0	0	11	0	1	12	0	0	4	0	4	0	0	0	3	3	19	69
11:00 - 11:15	0	0	0	0	0	0	3	0	0	3	0	5	5	1	11	0	0	3	3	6	20	64
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	1	6	2	9	0	0	3	3	6	15	60
11:30 - 11:45	0	1	0	0	1	0	0	0	3	3	0	1	3	0	4	0	0	2	5	7	15	56
11:45 - 12:00	0	0	0	0	0	0	2	0	2	4	1	1	4	0	6	0	0	0	4	4	14	54
12:00 - 12:15	0	0	0	0	0	0	1	0	1	2	0	2	6	0	8	0	0	5	1	6	16	49
12:15 - 12:30	0	0	1	0	1	0	2	0	1	3	0	1	1	0	2	0	0	2	3	5	11	46
12:30 - 12:45	0	0	0	0	0	0	5	0	1	6	0	1	1	0	2	0	0	3	2	5	13	52
12:45 - 13:00	0	0	0	0	0	0	1	0	0	1	0	3	2	0	5	0	0	1	2	3	9	60
13:00 - 13:15	0	0	0	0	0	0	3	0	0	3	0	2	3	0	5	0	0	1	4	5	13	71
13:15 - 13:30	0	0	0	0	0	0	3	0	3	6	0	2	3	0	5	0	0	2	4	6	17	77
13:30 - 13:45	0	0	0	0	0	0	2	0	0	2	0	1	7	0	8	0	0	8	3	11	21	81
13:45 - 14:00	0	0	0	0	0	0	1	0	0	1	0	1	7	0	8	0	0	9	2	11	20	76
14:00 - 14:15	0	0	0	0	0	0	5	0	4	9	0	2	2	0	4	0	0	3	3	6	19	73
14:15 - 14:30	0	0	0	0	0	0	1	0	1	2	1	2	11	0	14	0	0	4	1	5	21	79
14:30 - 14:45	0	0	0	0	0	0	1	0	3	4	0	2	3	0	5	0	0	1	6	7	16	75
14:45 - 15:00	0	0	0	0	0	0	1	0	1	2	0	1	3	0	4	0	0	10	1	11	17	88
15:00 - 15:15	0	0	0	0	0	0	1	0	2	3	0	2	11	0	13	0	0	8	1	9	25	102
15:15 - 15:30	0	0	0	0	0	0	3	0	0	3	0	2	4	0	6	0	0	1	7	8	17	99
15:30 - 15:45	0	0	0	0	0	0	6	0	0	6	0	4	12	0	16	0	0	2	5	7	29	106
15:45 - 16:00	0	0	0	0	0	0	4	0	2	6	0	6	13	0	19	0	0	2	4	6	31	98
16:00 - 16:15	0	0	0	0	0	0	2	0	1	3	0	2	11	0	13	0	0	2	4	6	22	85
16:15 - 16:30	0	0	0	0	0	0	6	0	1	7	0	1	8	1	10	0	0	2	5	7	24	84
16:30 - 16:45	0	0	0	0	0	0	3	0	0	3	0	4	5	0	9	0	0	5	4	9	21	91
16:45 - 17:00	0	0	0	0	0	0	4	0	0	4	0	5	4	0	9	0	0	2	3	5	18	92
17:00 - 17:15	0	0	0	0	0	0	3	0	1	4	0	4	8	0	12	0	0	4	1	5	21	100
17:15 - 17:30	0	0	0	0	0	0	2	0	0	2	0	4	13	0	17	0	0	4	8	12	31	101
17:30 - 17:45	0	0	0	0	0	0	2	0	3	5	0	1	4	0	5	0	0	6	6	12	22	94
17:45 - 18:00	0	0	0	0	0	0	1	0	1	2	1	4	9	0	14	0	0	5	5	10	26	97
18:00 - 18:15	0	0	0	0	0	0	0	0	0	0	0	2	11	0	13	0	0	4	5	9	22	90
18:15 - 18:30	0	0	0	0	0	0	4	0	1	5	0	4	9	0	13	0	0	2	4	6	24	81
18:30 - 18:45	0	0	0	0	0	0	3	0	1	4	0	5	10	0	15	0	0	2	4	6	25	74
18:45 - 19:00	0	0	0	0	0	0	3	0	2	5	0	3	6	0	9	0	0	2	3	5	19	68
19:00 - 19:15	0	0	0	0	0	0	1	0	0	1	0	0	7	0	7	0	0	4	1	5	13	65
19:15 - 19:30	0	0	0	0	0	0	2	0	0	2	0	1	8	0	9	0	0	4	2	6	17	60
19:30 - 19:45	0	0	0	0	0	0	0	0	0	0	0	1	11	0	12	0	0	0	7	7	19	60
19:45 - 20:00	0	0	0	0	0	0	2	0	0	2	0	4	5	0	9	0	0	3	2	5	16	59
20:00 - 20:15	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	1	3	4	8	61
20:15 - 20:30	0	0	0	0	0	0	3	0	2	5	0	1	6	0	7	0	0	4	1	5	17	64
20:30 - 20:45	0	0	0	0	0	0	4	0	0	4	0	0	7	0	7	0	1	2	4	7	18	57
20:45 - 21:00	0	0	0	0	0	0	0	0	1	1	0	2	7	0	9	0	0	2	6	8	18	50
21:00 - 21:15	0	0	0	0	0	0	3	0	0	3	0	0	4	0	4	0	0	0	4	4	11	40
21:15 - 21:30	0	0	0	0	0	0	2	0	0	2	0	0	6	0	6	0	0	0	2	2	10	37
21:30 - 21:45	0	0	0	0	0	0	0	0	2	2	0	1	6	0	7	0	0	2	0	2	11	35
21:45 - 22:00	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	0	0	2	1	3	8	27
22:00 - 22:15	0	0	0	0	0	0	0	0	1	1	0	1	3	0	4	0	0	1	2	3	8	23
22:15 - 22:30	0	0	0	0	0	0	2	0	0	2	0	0	3	0	3	0	0	1	2	3	8	20
22:30 - 22:45	0	0	0	0	0	0	0	0	1	1	0	1	1	0	2	0	0	0	0	0	3	16
22:45 - 23:00	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	0	0	1	1	4	16
23:00 - 23:15	0	0	0	0	0	0	1	0	0	1	0	1	1	0	2	0	0	1	1	2	5	13
23:15 - 23:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	2	2	4	
23:30 - 23:45	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	3	106
23:45 - 0:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	
Total	0	6	1	0	7	0	139	0	76	215	4	125	353	4	486	0	1	226	287	514	1222	

	Northbound Vehicles					Southbound Vehicles					Eastbound Vehicles					Westbound Vehicles					Grand	
PEAK HOUR	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	U-Turn	Left	Thru	Right	Total	Total	PHF
7:15-8:15	0	1	0	0	1	0	3	0	16	19	1	6	20	0	27	0	0	32	24	56	103	0.757
15:30 - 16:30	0	0	0	0	0	0	18	0	4	22	0	13	44	1	58	0	0	8	18	26	106	0.855

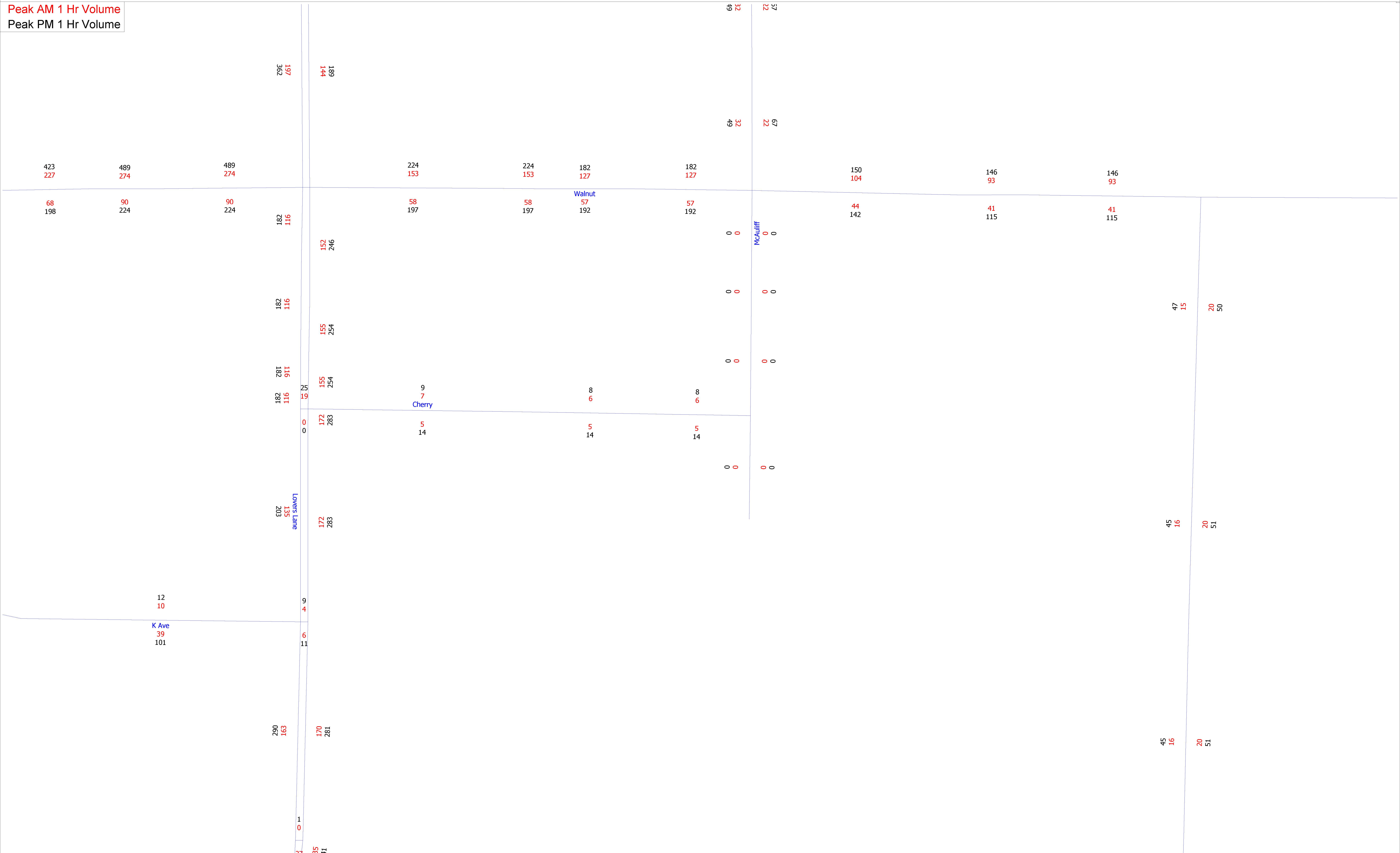
	Total	Percent
Heavy Vehicles	8	0.7%

Appendix B – TCAG Models

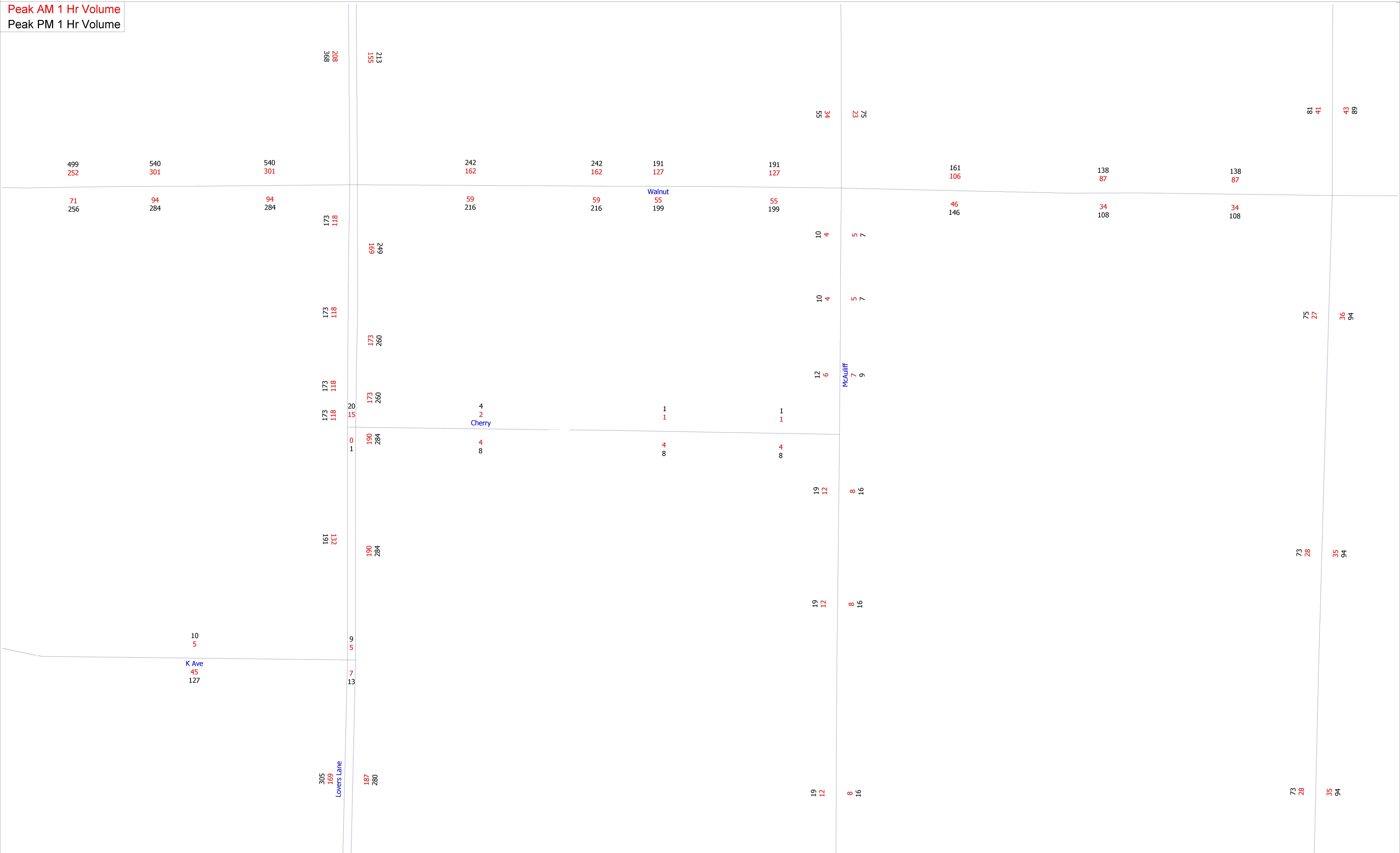
TCAG 2022 Travel Demand Model - No Project



TCAG 2027 Travel Demand Model - No Project



TCAG 2032 Travel Demand Model - No Project



Appendix C – Synchro Analysis Reports

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	22	35	41	435	9	573	17
Future Vol, veh/h	22	35	41	435	9	573	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	26	41	48	506	10	666	20

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1045	343	686	0	506	-	0
Stage 1	696	-	-	-	-	-	-
Stage 2	349	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	224	653	904	-	686	-	-
Stage 1	456	-	-	-	-	-	-
Stage 2	685	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	209	653	904	-	686	-	-
Mov Cap-2 Maneuver	209	-	-	-	-	-	-
Stage 1	432	-	-	-	-	-	-
Stage 2	675	-	-	-	-	-	-

Approach	EB		NB		SB
HCM Control Delay, s	16.2		0.8		0.2
HCM LOS	C				

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	904	-	209	653	686	-	-
HCM Lane V/C Ratio	0.053	-	0.122	0.062	0.015	-	-
HCM Control Delay (s)	9.2	-	24.6	10.9	10.3	-	-
HCM Lane LOS	A	-	C	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.4	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	48	0	0	77	18	429	11	18	535	25
Future Vol, veh/h	0	0	48	0	0	77	18	429	11	18	535	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	57	0	0	92	21	511	13	21	637	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	334	-	-	262	667	0	0	524	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	662	0	0	737	919	-	-	1039	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	662	-	-	737	919	-	-	1039	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	10.6	0.4	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	919	-	-	662	737	1039	-	-
HCM Lane V/C Ratio	0.023	-	-	0.086	0.124	0.021	-	-
HCM Control Delay (s)	9	-	-	11	10.6	8.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.4	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	77	134	89	83	216	54	13	103	325	55	77	390	99
Future Volume (vph)	77	134	89	83	216	54	13	103	325	55	77	390	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.979				0.978			0.970	
Flt Protected		0.982			0.988			0.950			0.950		
Satd. Flow (prot)	0	1794	1553	0	1767	0	0	1736	3395	0	1736	3367	0
Flt Permitted		0.982			0.988			0.950			0.950		
Satd. Flow (perm)	0	1794	1553	0	1767	0	0	1736	3395	0	1736	3367	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			106		5				14			24	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1927				1292			1374	
Travel Time (s)		12.0			29.2				14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	92	160	106	99	257	64	15	123	387	65	92	464	118
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	252	106	0	420	0	0	138	452	0	92	582	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.69	0.27		1.16			0.77	0.36		0.51	0.46	
Control Delay		66.5	10.1		147.9			92.4	34.2		74.6	35.7	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		66.5	10.1		147.9			92.4	34.2		74.6	35.7	
LOS		E	B		F			F	C		E	D	
Approach Delay		49.8			147.9				47.8			41.0	
Approach LOS		D			F				D			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

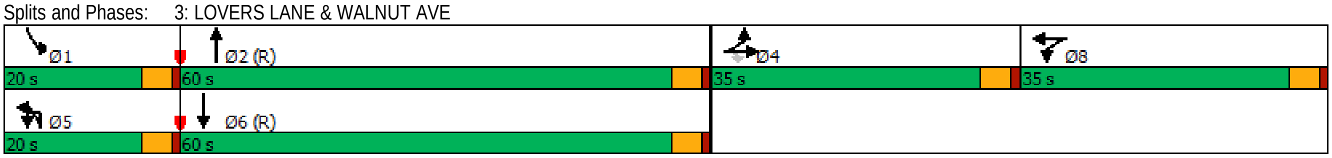
Control Type: Pretimed

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 66.5 Intersection LOS: E

Intersection Capacity Utilization 65.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection												
Int Delay, s/veh	4.2											
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations												
Traffic Vol, veh/h	52	184	10	5	228	95	27	39	8	45	10	64
Future Vol, veh/h	52	184	10	5	228	95	27	39	8	45	10	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	214	12	6	265	110	31	45	9	52	12	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	375	0	0	226	0	0	485	721	214	644	623	133
Stage 1	-	-	-	-	-	-	334	334	-	277	277	-
Stage 2	-	-	-	-	-	-	151	387	-	367	346	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1182	-	-	1341	-	-	479	353	825	372	402	892
Stage 1	-	-	-	-	-	-	679	642	-	707	680	-
Stage 2	-	-	-	-	-	-	837	609	-	652	635	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1182	-	-	1341	-	-	411	334	825	316	380	892
Mov Cap-2 Maneuver	-	-	-	-	-	-	411	334	-	316	380	-
Stage 1	-	-	-	-	-	-	644	609	-	671	677	-
Stage 2	-	-	-	-	-	-	751	607	-	566	603	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0.1	15.6	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	411	372	1182	-	-	1341	-	-	316	755
HCM Lane V/C Ratio	0.076	0.147	0.051	-	-	0.004	-	-	0.166	0.114
HCM Control Delay (s)	14.5	16.3	8.2	-	-	7.7	-	-	18.6	10.4
HCM Lane LOS	B	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0.5	0.2	-	-	0	-	-	0.6	0.4

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	20	32	24	3	16
Future Vol, veh/h	7	20	32	24	3	16
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	26	42	32	4	21
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	7.3	7.1	7.1
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	26%	0%	100%	0%
Vol Thru, %	74%	57%	0%	0%
Vol Right, %	0%	43%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	27	56	3	16
LT Vol	7	0	3	0
Through Vol	20	32	0	0
RT Vol	0	24	0	16
Lane Flow Rate	36	74	4	21
Geometry Grp	2	2	7	7
Degree of Util (X)	0.04	0.077	0.006	0.024
Departure Headway (Hd)	4.085	3.748	5.224	4.022
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	877	956	684	887
Service Time	2.109	1.769	2.962	1.76
HCM Lane V/C Ratio	0.041	0.077	0.006	0.024
HCM Control Delay	7.3	7.1	8	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	22	26	28	581	3	538	37
Future Vol, veh/h	22	26	28	581	3	538	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	25	30	32	660	3	611	42

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1032	327	653	0	660	-	0
Stage 1	638	-	-	-	-	-	-
Stage 2	394	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	229	669	930	-	548	-	-
Stage 1	488	-	-	-	-	-	-
Stage 2	650	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	220	669	930	-	548	-	-
Mov Cap-2 Maneuver	220	-	-	-	-	-	-
Stage 1	471	-	-	-	-	-	-
Stage 2	647	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.5	0.4	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	930	-	220	669	548	-	-
HCM Lane V/C Ratio	0.034	-	0.114	0.044	0.006	-	-
HCM Control Delay (s)	9	-	23.5	10.6	11.6	-	-
HCM Lane LOS	A	-	C	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	22	0	0	25	19	561	38	44	518	21
Future Vol, veh/h	0	0	22	0	0	25	19	561	38	44	518	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	24	0	0	27	21	610	41	48	563	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	293	-	-	326	586	0	0	651	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	703	0	0	670	985	-	-	931	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	703	-	-	670	985	-	-	931	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	10.6	0.3	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	985	-	-	703	670	931	-	-
HCM Lane V/C Ratio	0.021	-	-	0.034	0.041	0.051	-	-
HCM Control Delay (s)	8.7	-	-	10.3	10.6	9.1	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	87	160	62	83	158	76	8	55	426	97	136	449	92
Future Volume (vph)	87	160	62	83	158	76	8	55	426	97	136	449	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.968				0.972			0.974	
Flt Protected		0.983			0.987			0.950			0.950		
Satd. Flow (prot)	0	1796	1553	0	1745	0	0	1736	3374	0	1736	3381	0
Flt Permitted		0.983			0.987			0.950			0.950		
Satd. Flow (perm)	0	1796	1553	0	1745	0	0	1736	3374	0	1736	3381	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			76		10				21			18	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1927				1292			1374	
Travel Time (s)		12.0			29.2				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	95	174	67	90	172	83	9	60	463	105	148	488	100
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	269	67	0	345	0	0	69	568	0	148	588	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.74	0.18		0.95			0.39	0.45		0.83	0.47	
Control Delay		69.2	8.9		93.5			69.7	35.7		99.2	36.3	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		69.2	8.9		93.5			69.7	35.7		99.2	36.3	
LOS		E	A		F			E	D		F	D	
Approach Delay		57.2			93.5				39.4			48.9	
Approach LOS		E			F				D			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

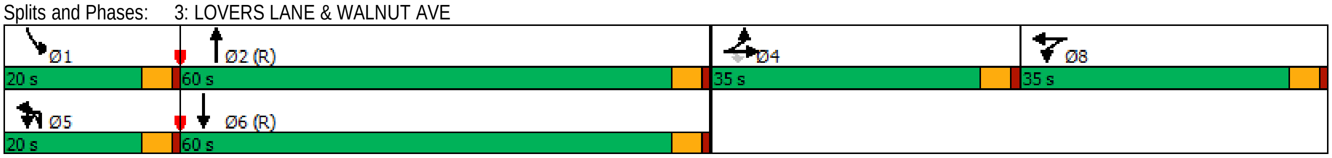
Control Type: Pretimed

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 54.8 Intersection LOS: D

Intersection Capacity Utilization 68.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	250	19	10	218	68	28	23	8	54	15	51
Future Vol, veh/h	79	250	19	10	218	68	28	23	8	54	15	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	281	21	11	245	76	31	26	9	61	17	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	321	0	0	302	0	0	612	802	281	754	747	123
Stage 1	-	-	-	-	-	-	459	459	-	267	267	-
Stage 2	-	-	-	-	-	-	153	343	-	487	480	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1237	-	-	1257	-	-	391	317	757	311	341	905
Stage 1	-	-	-	-	-	-	581	566	-	716	687	-
Stage 2	-	-	-	-	-	-	835	637	-	561	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1237	-	-	1257	-	-	330	292	757	269	314	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	330	292	-	269	314	-
Stage 1	-	-	-	-	-	-	539	525	-	664	681	-
Stage 2	-	-	-	-	-	-	756	631	-	489	514	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.3	16.8	16.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	330	347	1237	-	-	1257	-	-	269	634
HCM Lane V/C Ratio	0.095	0.1	0.072	-	-	0.009	-	-	0.226	0.117
HCM Control Delay (s)	17.1	16.5	8.1	-	-	7.9	-	-	22.2	11.4
HCM Lane LOS	C	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0.3	0.2	-	-	0	-	-	0.8	0.4

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	44	8	18	18	4
Future Vol, veh/h	13	44	8	18	18	4
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	51	9	21	21	5
Number of Lanes	0	1	1	0	1	1

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	2	1
HCM Control Delay	7.4	6.8	7.9
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	23%	0%	100%	0%
Vol Thru, %	77%	31%	0%	0%
Vol Right, %	0%	69%	0%	100%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	26	18	4
LT Vol	13	0	18	0
Through Vol	44	8	0	0
RT Vol	0	18	0	4
Lane Flow Rate	66	30	21	5
Geometry Grp	2	2	7	7
Degree of Util (X)	0.075	0.03	0.03	0.005
Departure Headway (Hd)	4.047	3.613	5.202	4.001
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	885	987	688	892
Service Time	2.073	1.65	2.939	1.737
HCM Lane V/C Ratio	0.075	0.03	0.031	0.006
HCM Control Delay	7.4	6.8	8.1	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.1	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	26	41	48	511	11	662	20
Future Vol, veh/h	26	41	48	511	11	662	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	30	48	56	594	13	770	23

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1217	397	793	0	594	-	0
Stage 1	808	-	-	-	-	-	-
Stage 2	409	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	173	602	824	-	603	-	-
Stage 1	399	-	-	-	-	-	-
Stage 2	639	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	158	602	824	-	603	-	-
Mov Cap-2 Maneuver	158	-	-	-	-	-	-
Stage 1	372	-	-	-	-	-	-
Stage 2	625	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.9	0.8	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	824	-	158	602	603	-	-
HCM Lane V/C Ratio	0.068	-	0.191	0.079	0.021	-	-
HCM Control Delay (s)	9.7	-	33.1	11.5	11.1	-	-
HCM Lane LOS	A	-	D	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	56	0	0	90	21	504	13	21	629	29
Future Vol, veh/h	0	0	56	0	0	90	21	504	13	21	629	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	67	0	0	107	25	600	15	25	749	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	392	-	-	308	784	0	0	615	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	607	0	0	688	830	-	-	961	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	607	-	-	688	830	-	-	961	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	11.2	0.4	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	830	-	-	607	688	961	-	-
HCM Lane V/C Ratio	0.03	-	-	0.11	0.156	0.026	-	-
HCM Control Delay (s)	9.5	-	-	11.7	11.2	8.8	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.5	0.1	-	-

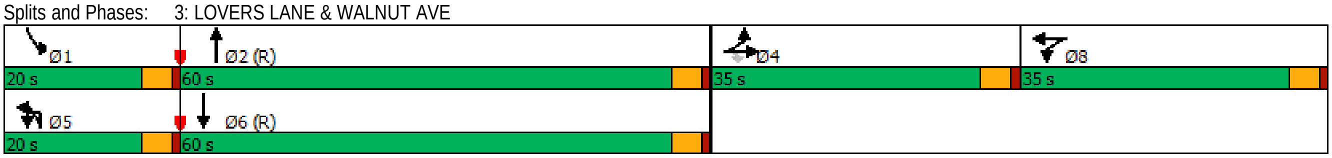
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	88	153	102	95	247	62	15	118	371	63	88	446	113
Future Volume (vph)	88	153	102	95	247	62	15	118	371	63	88	446	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.979				0.978			0.970	
Flt Protected		0.982			0.988			0.950			0.950		
Satd. Flow (prot)	0	1794	1553	0	1767	0	0	1736	3395	0	1736	3367	0
Flt Permitted		0.982			0.988			0.950			0.950		
Satd. Flow (perm)	0	1794	1553	0	1767	0	0	1736	3395	0	1736	3367	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			121		5				15			24	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			2649				1292			1374	
Travel Time (s)		12.0			40.1				14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	105	182	121	113	294	74	18	140	442	75	105	531	135
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	287	121	0	481	0	0	158	517	0	105	666	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.79	0.29		1.33			0.88	0.41		0.59	0.53	
Control Delay		73.0	9.8		208.8			107.9	35.7		78.2	37.4	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		73.0	9.8		208.8			107.9	35.7		78.2	37.4	
LOS		E	A		F			F	D		E	D	
Approach Delay		54.2			208.8				52.6			43.0	
Approach LOS		D			F				D			D	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.33
Intersection Signal Delay: 81.9 Intersection LOS: F

Intersection Capacity Utilization 73.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	205	11	5	254	106	30	44	9	50	11	71
Future Vol, veh/h	58	205	11	5	254	106	30	44	9	50	11	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	238	13	6	295	123	35	51	10	58	13	83

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	418	0	0	251	0	0	538	802	238	716	692	148
Stage 1	-	-	-	-	-	-	372	372	-	307	307	-
Stage 2	-	-	-	-	-	-	166	430	-	409	385	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1139	-	-	1313	-	-	440	317	800	331	366	873
Stage 1	-	-	-	-	-	-	648	618	-	679	660	-
Stage 2	-	-	-	-	-	-	820	583	-	619	610	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1139	-	-	1313	-	-	368	297	800	270	343	873
Mov Cap-2 Maneuver	-	-	-	-	-	-	368	297	-	270	343	-
Stage 1	-	-	-	-	-	-	610	582	-	639	657	-
Stage 2	-	-	-	-	-	-	725	580	-	524	574	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.1	17.4	15
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	368	333	1139	-	-	1313	-	-	270	723
HCM Lane V/C Ratio	0.095	0.185	0.059	-	-	0.004	-	-	0.215	0.132
HCM Control Delay (s)	15.8	18.3	8.4	-	-	7.8	-	-	22	10.7
HCM Lane LOS	C	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0.7	0.2	-	-	0	-	-	0.8	0.5

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	25	0	0	40	30	0	0	0	4	0	20
Future Vol, veh/h	9	25	0	0	40	30	0	0	0	4	0	20
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	33	0	0	53	39	0	0	0	5	0	26
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.4	7.2	0	7.1
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	26%	0%	100%	0%
Vol Thru, %	100%	74%	57%	0%	0%
Vol Right, %	0%	0%	43%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	34	70	4	20
LT Vol	0	9	0	4	0
Through Vol	0	25	40	0	0
RT Vol	0	0	30	0	20
Lane Flow Rate	0	45	92	5	26
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0	0.051	0.096	0.008	0.03
Departure Headway (Hd)	4.297	4.111	3.765	5.272	4.07
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	870	951	677	875
Service Time	2.355	2.142	1.793	3.02	1.818
HCM Lane V/C Ratio	0	0.052	0.097	0.007	0.03
HCM Control Delay	7.4	7.4	7.2	8.1	6.9
HCM Lane LOS	N	A	A	A	A
HCM 95th-tile Q	0	0.2	0.3	0	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	26	30	33	680	4	626	43
Future Vol, veh/h	26	30	33	680	4	626	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	30	34	38	773	5	711	49

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1209	380	760	0	773	-	0
Stage 1	746	-	-	-	-	-	-
Stage 2	463	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	175	618	848	-	464	-	-
Stage 1	430	-	-	-	-	-	-
Stage 2	600	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	165	618	848	-	464	-	-
Mov Cap-2 Maneuver	165	-	-	-	-	-	-
Stage 1	411	-	-	-	-	-	-
Stage 2	593	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.6	0.4	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	848	-	165	618	464	-	-
HCM Lane V/C Ratio	0.044	-	0.179	0.055	0.01	-	-
HCM Control Delay (s)	9.4	-	31.5	11.2	12.8	-	-
HCM Lane LOS	A	-	D	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	25	0	0	29	21	632	43	49	583	24
Future Vol, veh/h	0	0	25	0	0	29	21	632	43	49	583	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	27	0	0	32	23	687	47	53	634	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	330	-	-	367	660	0	0	734	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	666	0	0	630	924	-	-	867	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	666	-	-	630	924	-	-	867	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	11	0.3	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	924	-	-	666	630	867	-	-
HCM Lane V/C Ratio	0.025	-	-	0.041	0.05	0.061	-	-
HCM Control Delay (s)	9	-	-	10.6	11	9.4	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0.2	-	-

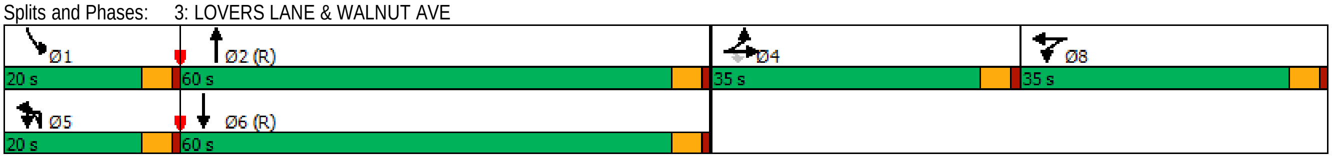
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	100	184	71	96	182	88	9	63	491	112	157	518	106
Future Volume (vph)	100	184	71	96	182	88	9	63	491	112	157	518	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.967				0.972			0.975	
Flt Protected		0.983			0.987			0.950			0.950		
Satd. Flow (prot)	0	1796	1553	0	1744	0	0	1736	3374	0	1736	3384	0
Flt Permitted		0.983			0.987			0.950			0.950		
Satd. Flow (perm)	0	1796	1553	0	1744	0	0	1736	3374	0	1736	3384	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			77		10				21			18	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			2649				1292			1374	
Travel Time (s)		12.0			40.1				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	109	200	77	104	198	96	10	68	534	122	171	563	115
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	309	77	0	398	0	0	78	656	0	171	678	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.85	0.20		1.10			0.44	0.52		0.96	0.54	
Control Delay		78.6	11.2		129.2			71.4	37.4		122.1	38.0	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		78.6	11.2		129.2			71.4	37.4		122.1	38.0	
LOS		E	B		F			E	D		F	D	
Approach Delay		65.1			129.2				41.0			54.9	
Approach LOS		E			F				D			D	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 64.8 Intersection LOS: E

Intersection Capacity Utilization 76.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	90	284	22	11	248	77	32	26	9	61	17	58
Future Vol, veh/h	90	284	22	11	248	77	32	26	9	61	17	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	319	25	12	279	87	36	29	10	69	19	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	344	0	0	694	911	319	856	849	140
Stage 1	-	-	-	-	-	-	521	521	-	303	303	-
Stage 2	-	-	-	-	-	-	173	390	-	553	546	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1191	-	-	1213	-	-	343	273	721	264	297	883
Stage 1	-	-	-	-	-	-	538	531	-	682	663	-
Stage 2	-	-	-	-	-	-	812	607	-	516	517	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1191	-	-	1213	-	-	279	247	721	220	269	883
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	247	-	220	269	-
Stage 1	-	-	-	-	-	-	492	486	-	624	656	-
Stage 2	-	-	-	-	-	-	723	601	-	438	473	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.3	19.4	19.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	279	297	1191	-	-	1213	-	-	220	582
HCM Lane V/C Ratio	0.129	0.132	0.085	-	-	0.01	-	-	0.312	0.145
HCM Control Delay (s)	19.8	19	8.3	-	-	8	-	-	28.6	12.2
HCM Lane LOS	C	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.4	0.5	0.3	-	-	0	-	-	1.3	0.5

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	51	1	0	9	21	0	0	0	21	0	5
Future Vol, veh/h	15	51	1	0	9	21	0	0	0	21	0	5
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	59	1	0	10	24	0	0	0	24	0	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.5	6.8	0	7.9
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	22%	0%	100%	0%
Vol Thru, %	100%	76%	30%	0%	0%
Vol Right, %	0%	1%	70%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	67	30	21	5
LT Vol	0	15	0	21	0
Through Vol	0	51	9	0	0
RT Vol	0	1	21	0	5
Lane Flow Rate	0	78	35	24	6
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0	0.088	0.035	0.035	0.007
Departure Headway (Hd)	4.253	4.048	3.624	5.23	4.028
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	883	981	683	884
Service Time	2.312	2.081	1.67	2.974	1.772
HCM Lane V/C Ratio	0	0.088	0.036	0.035	0.007
HCM Control Delay	7.3	7.5	6.8	8.2	6.8
HCM Lane LOS	N	A	A	A	A
HCM 95th-tile Q	0	0.3	0.1	0.1	0

Intersection						
Int Delay, s/veh	0					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	26	41	48	511	11	662	20
Future Vol, veh/h	26	41	48	527	11	710	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	30	48	56	613	13	826	28

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1285	427	854	0	613	-	0
Stage 1	866	-	-	-	-	-	-
Stage 2	419	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	156	576	781	-	587	-	-
Stage 1	372	-	-	-	-	-	-
Stage 2	632	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	142	576	781	-	587	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-	-
Stage 1	345	-	-	-	-	-	-
Stage 2	618	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.6	0.8	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	781	-	142	576	587	-	-
HCM Lane V/C Ratio	0.071	-	0.213	0.083	0.022	-	-
HCM Control Delay (s)	10	-	37.1	11.8	11.3	-	-
HCM Lane LOS	A	-	E	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	56	0	0	90	21	504	13	21	629	29
Future Vol, veh/h	0	0	56	0	0	156	21	504	29	49	681	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	67	0	0	186	25	600	35	58	811	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	423	-	-	318	846	0	0	635	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	579	0	0	678	787	-	-	944	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	579	-	-	678	787	-	-	944	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	12.3	0.4	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	787	-	-	579	678	944	-	-
HCM Lane V/C Ratio	0.032	-	-	0.115	0.274	0.062	-	-
HCM Control Delay (s)	9.7	-	-	12	12.3	9.1	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	1.1	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	88	153	102	95	247	62	15	118	371	63	88	446	113
Future Volume (vph)	88	153	114	134	274	62	28	127	415	63	88	462	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.982				0.980			0.970	
Flt Protected		0.982			0.986			0.950			0.950		
Satd. Flow (prot)	0	1794	1553	0	1769	0	0	1736	3402	0	1736	3367	0
Flt Permitted		0.982			0.986			0.950			0.950		
Satd. Flow (perm)	0	1794	1553	0	1769	0	0	1736	3402	0	1736	3367	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			136		5				13			23	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			2649				1292			1374	
Travel Time (s)		12.0			40.1				14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	105	182	136	160	326	74	33	151	494	75	105	550	135
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	287	136	0	560	0	0	184	569	0	105	685	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.79	0.32		1.54			1.03	0.45		0.59	0.54	
Control Delay		73.0	9.5		296.0			138.6	36.2		78.2	37.9	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		73.0	9.5		296.0			138.6	36.2		78.2	37.9	
LOS		E	A		F			F	D		E	D	
Approach Delay		52.6			296.0				61.2			43.2	
Approach LOS		D			F				E			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 100

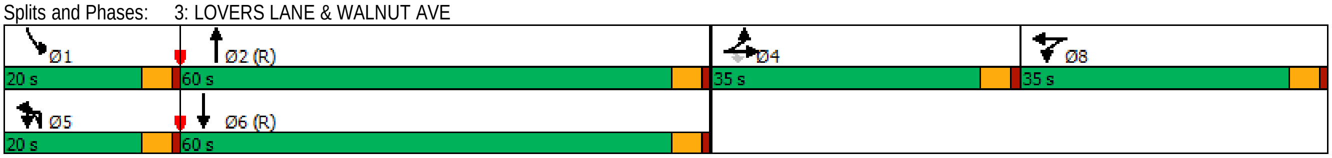
Control Type: Pretimed

Maximum v/c Ratio: 1.54

Intersection Signal Delay: 106.2 Intersection LOS: F

Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	205	11	5	254	106	30	44	9	50	11	71
Future Vol, veh/h	58	205	11	9	254	106	96	48	17	50	11	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	238	13	10	295	123	112	56	20	58	13	83

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	418	0	0	251	0	0	546	810	238	732	700	148
Stage 1	-	-	-	-	-	-	372	372	-	315	315	-
Stage 2	-	-	-	-	-	-	174	438	-	417	385	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1139	-	-	1313	-	-	434	313	800	323	363	873
Stage 1	-	-	-	-	-	-	648	618	-	671	655	-
Stage 2	-	-	-	-	-	-	811	578	-	612	610	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1139	-	-	1313	-	-	362	292	800	255	339	873
Mov Cap-2 Maneuver	-	-	-	-	-	-	362	292	-	255	339	-
Stage 1	-	-	-	-	-	-	610	582	-	631	650	-
Stage 2	-	-	-	-	-	-	714	573	-	508	574	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.2	18.8	15.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	362	350	1139	-	-	1313	-	-	255	721
HCM Lane V/C Ratio	0.308	0.216	0.059	-	-	0.008	-	-	0.228	0.132
HCM Control Delay (s)	19.3	18.1	8.4	-	-	7.8	-	-	23.2	10.8
HCM Lane LOS	C	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.3	0.8	0.2	-	-	0	-	-	0.9	0.5

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	25	0	0	40	30	0	0	0	4	0	20
Future Vol, veh/h	12	25	33	0	40	30	33	75	0	4	3	21
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	33	43	0	53	39	43	99	0	5	4	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.7	7.7	8.6	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	31%	17%	0%	57%	0%
Vol Thru, %	69%	36%	57%	43%	0%
Vol Right, %	0%	47%	43%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	70	70	7	21
LT Vol	33	12	0	4	0
Through Vol	75	25	40	3	0
RT Vol	0	33	30	0	21
Lane Flow Rate	142	92	92	9	28
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.18	0.108	0.107	0.014	0.033
Departure Headway (Hd)	4.555	4.202	4.194	5.345	4.354
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	793	855	857	671	824
Service Time	2.555	2.219	2.211	3.063	2.072
HCM Lane V/C Ratio	0.179	0.108	0.107	0.013	0.034
HCM Control Delay	8.6	7.7	7.7	8.1	7.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0.4	0	0.1

Intersection						
Int Delay, s/veh	2.9					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	33	11	1	33	33	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	12	1	36	36	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	48	0	80	42
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1559	-	922	1029
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1559	-	921	1029
Mov Cap-2 Maneuver	-	-	-	-	921	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	983	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	929	-	-	1559	-
HCM Lane V/C Ratio	0.042	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	36	0	0	72	24	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	0	78	26	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	111	33	39	0	-	0
Stage 1	33	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	886	1041	1571	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	886	1041	1571	-	-	-
Mov Cap-2 Maneuver	886	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1571	-	886	-	-
HCM Lane V/C Ratio	-	-	0.044	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	4.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	36	36	0	12	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	39	0	13	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	78	39	0	0	39	0
Stage 1	39	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	925	1033	-	-	1571	-
Stage 1	983	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	918	1033	-	-	1571	-
Mov Cap-2 Maneuver	918	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	975	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1033	1571	-
HCM Lane V/C Ratio	-	-	0.038	0.008	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	36	0	0	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	0	0	0	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	7	7	13	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1014	1075	1606	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1014	1075	1606	-	-	-
Mov Cap-2 Maneuver	1014	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1606	-	1014	-	-
HCM Lane V/C Ratio	-	-	0.039	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	26	30	33	680	4	626	43
Future Vol, veh/h	30	30	33	736	4	658	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	34	34	38	836	5	748	49

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1277	399	797	0	836	-	0
Stage 1	783	-	-	-	-	-	-
Stage 2	494	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	158	601	821	-	423	-	-
Stage 1	411	-	-	-	-	-	-
Stage 2	579	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	149	601	821	-	423	-	-
Mov Cap-2 Maneuver	149	-	-	-	-	-	-
Stage 1	392	-	-	-	-	-	-
Stage 2	572	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.8	0.4	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	821	-	149	601	423	-	-
HCM Lane V/C Ratio	0.046	-	0.229	0.057	0.011	-	-
HCM Control Delay (s)	9.6	-	36.2	11.4	13.6	-	-
HCM Lane LOS	A	-	E	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	25	0	0	29	21	632	43	49	583	24
Future Vol, veh/h	0	0	25	0	0	71	21	632	103	137	615	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	27	0	0	77	23	687	112	149	668	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	347	-	-	400	694	0	0	799	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	649	0	0	600	897	-	-	819	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	649	-	-	600	897	-	-	819	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	11.9	0.3	1.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	897	-	-	649	600	819	-	-
HCM Lane V/C Ratio	0.025	-	-	0.042	0.129	0.182	-	-
HCM Control Delay (s)	9.1	-	-	10.8	11.9	10.4	-	-
HCM Lane LOS	A	-	-	B	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	100	184	71	96	182	88	9	63	491	112	157	518	106
Future Volume (vph)	100	184	111	120	200	88	17	69	519	112	157	566	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.971				0.973			0.976	
Flt Protected		0.983			0.986			0.950			0.950		
Satd. Flow (prot)	0	1796	1553	0	1749	0	0	1736	3377	0	1736	3388	0
Flt Permitted		0.983			0.986			0.950			0.950		
Satd. Flow (perm)	0	1796	1553	0	1749	0	0	1736	3377	0	1736	3388	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			121		8				19			16	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			2649				1292			1374	
Travel Time (s)		12.0			40.1				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	109	200	121	130	217	96	18	75	564	122	171	615	115
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	309	121	0	443	0	0	93	686	0	171	730	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.85	0.29		1.22			0.52	0.54		0.96	0.58	
Control Delay		78.6	9.7		170.7			74.8	38.1		122.1	39.2	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		78.6	9.7		170.7			74.8	38.1		122.1	39.2	
LOS		E	A		F			E	D		F	D	
Approach Delay		59.2			170.7				42.5			54.9	
Approach LOS		E			F				D			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

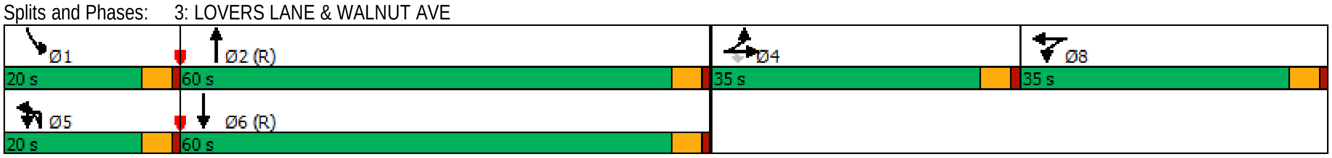
Control Type: Pretimed

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 71.9 Intersection LOS: E

Intersection Capacity Utilization 76.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	90	284	22	11	248	77	32	26	9	61	17	58
Future Vol, veh/h	90	284	22	19	248	77	74	26	13	61	21	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	319	25	21	279	87	83	29	15	69	24	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	366	0	0	344	0	0	715	929	319	877	867	140
Stage 1	-	-	-	-	-	-	521	521	-	321	321	-
Stage 2	-	-	-	-	-	-	194	408	-	556	546	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1191	-	-	1213	-	-	332	267	721	255	290	883
Stage 1	-	-	-	-	-	-	538	531	-	666	651	-
Stage 2	-	-	-	-	-	-	790	596	-	515	517	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1191	-	-	1213	-	-	265	240	721	209	261	883
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	240	-	209	261	-
Stage 1	-	-	-	-	-	-	492	486	-	609	640	-
Stage 2	-	-	-	-	-	-	693	586	-	434	473	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.4	22.6	20.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	265	309	1191	-	-	1213	-	-	209	541
HCM Lane V/C Ratio	0.314	0.142	0.085	-	-	0.018	-	-	0.328	0.164
HCM Control Delay (s)	24.7	18.6	8.3	-	-	8	-	-	30.4	13
HCM Lane LOS	C	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	1.3	0.5	0.3	-	-	0.1	-	-	1.4	0.6

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	51	1	0	9	21	0	0	0	21	0	5
Future Vol, veh/h	16	51	112	0	9	21	21	45	0	21	9	8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	59	130	0	10	24	24	52	0	24	10	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.1	7.2	8.2	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	32%	9%	0%	70%	0%
Vol Thru, %	68%	28%	30%	30%	0%
Vol Right, %	0%	63%	70%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	179	30	30	8
LT Vol	21	16	0	21	0
Through Vol	45	51	9	9	0
RT Vol	0	112	21	0	8
Lane Flow Rate	77	208	35	35	9
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.099	0.226	0.039	0.053	0.011
Departure Headway (Hd)	4.661	3.915	4.017	5.459	4.404
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	771	922	894	658	815
Service Time	2.676	1.921	2.029	3.175	2.119
HCM Lane V/C Ratio	0.1	0.226	0.039	0.053	0.011
HCM Control Delay	8.2	8.1	7.2	8.5	7.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.3	0.9	0.1	0.2	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	111	37	3	21	21	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	121	40	3	23	23	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	161	0	170	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	29	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1418	-	820	907
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	994	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1418	-	818	907
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	992	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	822	-	-	1418	-
HCM Lane V/C Ratio	0.029	-	-	0.002	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	22	0	0	44	80	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	0	48	87	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	157	109	130	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	834	945	1455	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	974	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	834	945	1455	-	-	-
Mov Cap-2 Maneuver	834	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	9.4		0		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1455	-	834	-	-
HCM Lane V/C Ratio	-	-	0.029	-	-
HCM Control Delay (s)	0	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	3.9					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	22	22	0	40	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	24	0	43	43

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	153	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	839	1052	-	-	1591	-
Stage 1	999	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	816	1052	-	-	1591	-
Mov Cap-2 Maneuver	816	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	872	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1052	1591	-
HCM Lane V/C Ratio	-	-	0.023	0.027	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	22	0	0	0	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	0	0	0	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	22	22	43	0	-	0
Stage 1	22	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	995	1055	1566	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	995	1055	1566	-	-	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	8.7		0		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1566	-	995	-	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	27	43	51	540	11	701	21
Future Vol, veh/h	27	43	51	540	11	701	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	31	50	59	628	13	815	24

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1285	420	839	0	628	-	0
Stage 1	853	-	-	-	-	-	-
Stage 2	432	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	156	582	791	-	574	-	-
Stage 1	378	-	-	-	-	-	-
Stage 2	622	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	141	582	791	-	574	-	-
Mov Cap-2 Maneuver	141	-	-	-	-	-	-
Stage 1	350	-	-	-	-	-	-
Stage 2	608	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.8	0.9	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	791	-	141	582	574	-	-
HCM Lane V/C Ratio	0.075	-	0.223	0.086	0.022	-	-
HCM Control Delay (s)	9.9	-	37.7	11.8	11.4	-	-
HCM Lane LOS	A	-	E	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	59	0	0	95	22	530	14	22	661	31
Future Vol, veh/h	0	0	59	0	0	95	22	530	14	22	661	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	70	0	0	113	26	631	17	26	787	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	412	-	-	324	824	0	0	648	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	589	0	0	672	802	-	-	934	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	589	-	-	672	802	-	-	934	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	11.4	0.4	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	802	-	-	589	672	934	-	-
HCM Lane V/C Ratio	0.033	-	-	0.119	0.168	0.028	-	-
HCM Control Delay (s)	9.6	-	-	11.9	11.4	9	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.6	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	94	164	109	101	264	66	16	126	397	67	94	477	121
Future Volume (vph)	94	164	109	101	264	66	16	126	397	67	94	477	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.979				0.978			0.970	
Flt Protected		0.982			0.988			0.950			0.950		
Satd. Flow (prot)	0	1794	1553	0	1767	0	0	1736	3395	0	1736	3367	0
Flt Permitted		0.982			0.988			0.950			0.950		
Satd. Flow (perm)	0	1794	1553	0	1767	0	0	1736	3395	0	1736	3367	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			130		5				14			24	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			2649				1292			1374	
Travel Time (s)		12.0			40.1				14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	112	195	130	120	314	79	19	150	473	80	112	568	144
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	307	130	0	513	0	0	169	553	0	112	712	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.84	0.31		1.41			0.94	0.44		0.63	0.57	
Control Delay		78.3	9.6		243.5			119.8	36.4		80.6	38.4	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		78.3	9.6		243.5			119.8	36.4		80.6	38.4	
LOS		E	A		F			F	D		F	D	
Approach Delay		57.8			243.5				55.9			44.1	
Approach LOS		E			F				E			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

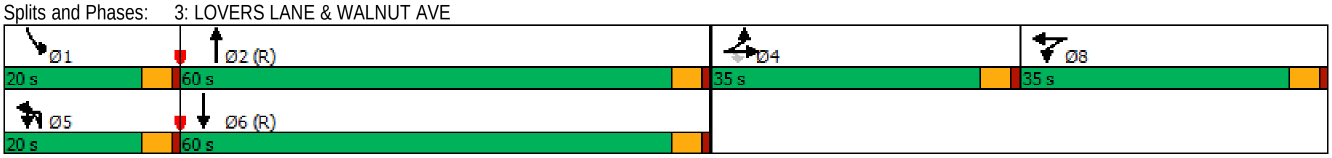
Control Type: Pretimed

Maximum v/c Ratio: 1.41

Intersection Signal Delay: 90.9 Intersection LOS: F

Intersection Capacity Utilization 77.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	213	12	5	264	110	31	45	9	52	12	74
Future Vol, veh/h	60	213	12	5	264	110	31	45	9	52	12	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	248	14	6	307	128	36	52	10	60	14	86

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	435	0	0	262	0	0	561	835	248	745	721	154
Stage 1	-	-	-	-	-	-	388	388	-	319	319	-
Stage 2	-	-	-	-	-	-	173	447	-	426	402	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1123	-	-	1301	-	-	424	303	790	316	353	865
Stage 1	-	-	-	-	-	-	635	608	-	668	652	-
Stage 2	-	-	-	-	-	-	812	573	-	606	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1123	-	-	1301	-	-	351	283	790	254	329	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	351	283	-	254	329	-
Stage 1	-	-	-	-	-	-	596	570	-	627	649	-
Stage 2	-	-	-	-	-	-	712	570	-	509	563	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.1	18.1	15.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	351	317	1123	-	-	1301	-	-	254	705
HCM Lane V/C Ratio	0.103	0.198	0.062	-	-	0.004	-	-	0.238	0.142
HCM Control Delay (s)	16.4	19.1	8.4	-	-	7.8	-	-	23.5	10.9
HCM Lane LOS	C	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0.7	0.2	-	-	0	-	-	0.9	0.5

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	26	0	0	42	31	0	0	0	4	0	21
Future Vol, veh/h	9	26	0	0	42	31	0	0	0	4	0	21
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	34	0	0	55	41	0	0	0	5	0	28
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.4	7.2	0	7.2
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	26%	0%	100%	0%
Vol Thru, %	100%	74%	58%	0%	0%
Vol Right, %	0%	0%	42%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	35	73	4	21
LT Vol	0	9	0	4	0
Through Vol	0	26	42	0	0
RT Vol	0	0	31	0	21
Lane Flow Rate	0	46	96	5	28
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0	0.053	0.101	0.008	0.031
Departure Headway (Hd)	4.307	4.116	3.772	5.28	4.078
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	869	949	675	872
Service Time	2.369	2.147	1.799	3.034	1.831
HCM Lane V/C Ratio	0	0.053	0.101	0.007	0.032
HCM Control Delay	7.4	7.4	7.2	8.1	7
HCM Lane LOS	N	A	A	A	A
HCM 95th-tile Q	0	0.2	0.3	0	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB		NB		SB
HCM Control Delay, s	0		0		0
HCM LOS	A				

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	26	31	34	695	4	640	44
Future Vol, veh/h	26	31	34	695	4	640	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	30	35	39	790	5	727	50

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1235	389	777	0	790	-	0
Stage 1	762	-	-	-	-	-	-
Stage 2	473	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	169	610	835	-	453	-	-
Stage 1	421	-	-	-	-	-	-
Stage 2	593	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	159	610	835	-	453	-	-
Mov Cap-2 Maneuver	159	-	-	-	-	-	-
Stage 1	401	-	-	-	-	-	-
Stage 2	586	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.1	0.4	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	835	-	159	610	453	-	-
HCM Lane V/C Ratio	0.046	-	0.186	0.058	0.01	-	-
HCM Control Delay (s)	9.5	-	32.7	11.3	13	-	-
HCM Lane LOS	A	-	D	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	26	0	0	31	22	662	45	52	611	25
Future Vol, veh/h	0	0	26	0	0	31	22	662	45	52	611	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	28	0	0	34	24	720	49	57	664	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	346	-	-	385	691	0	0	769	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	650	0	0	613	900	-	-	841	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	650	-	-	613	900	-	-	841	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	11.2	0.3	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	900	-	-	650	613	841	-	-
HCM Lane V/C Ratio	0.027	-	-	0.043	0.055	0.067	-	-
HCM Control Delay (s)	9.1	-	-	10.8	11.2	9.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	109	200	77	104	197	95	10	69	532	121	170	560	115
Future Volume (vph)	109	200	77	104	197	95	10	69	532	121	170	560	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.968				0.972			0.974	
Flt Protected		0.983			0.987			0.950			0.950		
Satd. Flow (prot)	0	1796	1553	0	1745	0	0	1736	3374	0	1736	3381	0
Flt Permitted		0.983			0.987			0.950			0.950		
Satd. Flow (perm)	0	1796	1553	0	1745	0	0	1736	3374	0	1736	3381	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			84		9				21			18	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			2649				1292			1374	
Travel Time (s)		12.0			40.1				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	118	217	84	113	214	103	11	75	578	132	185	609	125
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	335	84	0	430	0	0	86	710	0	185	734	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.92	0.22		1.19			0.48	0.56		1.03	0.58	
Control Delay		88.5	10.9		159.1			73.1	38.5		139.8	39.2	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		88.5	10.9		159.1			73.1	38.5		139.8	39.2	
LOS		F	B		F			E	D		F	D	
Approach Delay		73.0			159.1				42.2			59.4	
Approach LOS		E			F				D			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

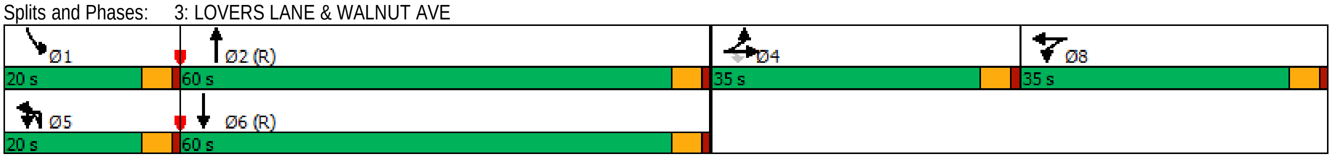
Control Type: Pretimed

Maximum v/c Ratio: 1.19

Intersection Signal Delay: 73.0 Intersection LOS: E

Intersection Capacity Utilization 81.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	307	23	13	267	83	34	28	10	66	18	63
Future Vol, veh/h	97	307	23	13	267	83	34	28	10	66	18	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	345	26	15	300	93	38	31	11	74	20	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	393	0	0	371	0	0	753	986	345	927	919	150
Stage 1	-	-	-	-	-	-	563	563	-	330	330	-
Stage 2	-	-	-	-	-	-	190	423	-	597	589	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1164	-	-	1186	-	-	312	247	697	236	270	870
Stage 1	-	-	-	-	-	-	510	508	-	658	645	-
Stage 2	-	-	-	-	-	-	794	587	-	489	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1164	-	-	1186	-	-	247	221	697	191	241	870
Mov Cap-2 Maneuver	-	-	-	-	-	-	247	221	-	191	241	-
Stage 1	-	-	-	-	-	-	462	460	-	596	637	-
Stage 2	-	-	-	-	-	-	697	579	-	406	448	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.3	21.5	22.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	247	269	1164	-	-	1186	-	-	191	551
HCM Lane V/C Ratio	0.155	0.159	0.094	-	-	0.012	-	-	0.388	0.165
HCM Control Delay (s)	22.2	20.9	8.4	-	-	8.1	-	-	35.3	12.8
HCM Lane LOS	C	C	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	0.5	0.6	0.3	-	-	0	-	-	1.7	0.6

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	55	0	0	10	22	0	0	0	22	0	5
Future Vol, veh/h	16	55	0	0	10	22	0	0	0	22	0	5
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	64	0	0	12	26	0	0	0	26	0	6
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.5	6.8	0	7.9
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	23%	0%	100%	0%
Vol Thru, %	100%	77%	31%	0%	0%
Vol Right, %	0%	0%	69%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	71	32	22	5
LT Vol	0	16	0	22	0
Through Vol	0	55	10	0	0
RT Vol	0	0	22	0	5
Lane Flow Rate	0	83	37	26	6
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0	0.093	0.038	0.037	0.007
Departure Headway (Hd)	4.266	4.061	3.637	5.241	4.039
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	880	977	681	881
Service Time	2.329	2.097	1.685	2.99	1.787
HCM Lane V/C Ratio	0	0.094	0.038	0.038	0.007
HCM Control Delay	7.3	7.5	6.8	8.2	6.8
HCM Lane LOS	N	A	A	A	A
HCM 95th-tile Q	0	0.3	0.1	0.1	0

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1021	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	1021	1084
Mov Cap-2 Maneuver	-	-	-	-	1021	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB		NB		SB
HCM Control Delay, s	0		0		0
HCM LOS	A				

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1	0	0	0	0	0
Stage 1	0	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1022	-	-	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection						
Int Delay, s/veh	0					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1	1	1	0	-	0
Stage 1	1	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1022	1084	1622	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1022	1084	1622	-	-	-
Mov Cap-2 Maneuver	1022	-	-	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	27	43	51	540	11	701	21
Future Vol, veh/h	27	43	51	556	11	749	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	31	50	59	647	13	871	29

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1354	450	900	0	647	-	0
Stage 1	912	-	-	-	-	-	-
Stage 2	442	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	141	556	751	-	558	-	-
Stage 1	352	-	-	-	-	-	-
Stage 2	615	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	127	556	751	-	558	-	-
Mov Cap-2 Maneuver	127	-	-	-	-	-	-
Stage 1	324	-	-	-	-	-	-
Stage 2	601	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.8	0.9	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	751	-	127	556	558	-	-
HCM Lane V/C Ratio	0.079	-	0.247	0.09	0.023	-	-
HCM Control Delay (s)	10.2	-	42.4	12.1	11.6	-	-
HCM Lane LOS	B	-	E	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.9	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	59	0	0	95	22	530	14	22	661	31
Future Vol, veh/h	0	0	59	0	0	161	22	530	30	50	713	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	70	0	0	192	26	631	36	60	849	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	443	-	-	334	886	0	0	667	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	562	0	0	662	760	-	-	919	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	562	-	-	662	760	-	-	919	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	12.6	0.4	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	760	-	-	562	662	919	-	-
HCM Lane V/C Ratio	0.034	-	-	0.125	0.29	0.065	-	-
HCM Control Delay (s)	9.9	-	-	12.3	12.6	9.2	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	1.2	0.2	-	-

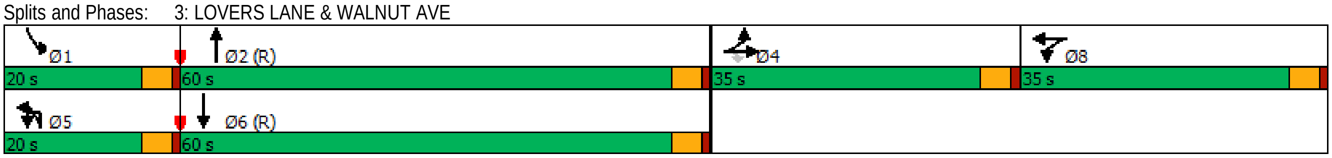
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	94	164	109	101	264	66	16	126	397	67	94	477	121
Future Volume (vph)	94	164	121	140	291	66	29	135	441	67	94	493	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.982				0.980			0.970	
Flt Protected		0.982			0.986			0.950			0.950		
Satd. Flow (prot)	0	1794	1553	0	1769	0	0	1736	3402	0	1736	3367	0
Flt Permitted		0.982			0.986			0.950			0.950		
Satd. Flow (perm)	0	1794	1553	0	1769	0	0	1736	3402	0	1736	3367	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			144		5				13			23	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			2649				1292			1374	
Travel Time (s)		12.0			40.1				14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	112	195	144	167	346	79	35	161	525	80	112	587	144
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	307	144	0	592	0	0	196	605	0	112	731	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.84	0.33		1.63			1.09	0.48		0.63	0.58	
Control Delay		78.3	9.4		332.5			154.7	36.9		80.6	38.8	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		78.3	9.4		332.5			154.7	36.9		80.6	38.8	
LOS		E	A		F			F	D		F	D	
Approach Delay		56.3			332.5				65.7			44.4	
Approach LOS		E			F				E			D	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Pretimed
Maximum v/c Ratio: 1.63
Intersection Signal Delay: 116.2 Intersection LOS: F

Intersection Capacity Utilization 77.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	60	213	12	5	264	110	31	45	9	52	12	74
Future Vol, veh/h	60	213	12	9	264	110	97	49	17	52	12	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	248	14	10	307	128	113	57	20	60	14	86

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	435	0	0	262	0	0	569	843	248	761	729	154
Stage 1	-	-	-	-	-	-	388	388	-	327	327	-
Stage 2	-	-	-	-	-	-	181	455	-	434	402	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1123	-	-	1301	-	-	419	300	790	308	349	865
Stage 1	-	-	-	-	-	-	635	608	-	660	647	-
Stage 2	-	-	-	-	-	-	804	568	-	600	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1123	-	-	1301	-	-	346	279	790	240	325	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	346	279	-	240	325	-
Stage 1	-	-	-	-	-	-	596	570	-	619	642	-
Stage 2	-	-	-	-	-	-	703	563	-	494	563	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.2	19.8	16.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	346	335	1123	-	-	1301	-	-	240	702
HCM Lane V/C Ratio	0.326	0.229	0.062	-	-	0.008	-	-	0.252	0.142
HCM Control Delay (s)	20.4	18.9	8.4	-	-	7.8	-	-	25	11
HCM Lane LOS	C	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	1.4	0.9	0.2	-	-	0	-	-	1	0.5

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	26	0	0	42	31	0	0	0	4	0	21
Future Vol, veh/h	12	26	33	0	42	31	33	75	0	4	3	22
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	34	43	0	55	41	43	99	0	5	4	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.7	7.7	8.6	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	31%	17%	0%	57%	0%
Vol Thru, %	69%	37%	58%	43%	0%
Vol Right, %	0%	46%	42%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	71	73	7	22
LT Vol	33	12	0	4	0
Through Vol	75	26	42	3	0
RT Vol	0	33	31	0	22
Lane Flow Rate	142	93	96	9	29
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.18	0.109	0.112	0.014	0.035
Departure Headway (Hd)	4.569	4.215	4.204	5.358	4.367
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	790	852	855	670	822
Service Time	2.569	2.23	2.218	3.075	2.084
HCM Lane V/C Ratio	0.18	0.109	0.112	0.013	0.035
HCM Control Delay	8.6	7.7	7.7	8.2	7.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0.4	0	0.1

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	33	11	1	33	33	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	12	1	36	36	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	48	0	80	42
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1559	-	922	1029
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1559	-	921	1029
Mov Cap-2 Maneuver	-	-	-	-	921	-
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	983	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	929	-	-	1559	-
HCM Lane V/C Ratio	0.042	-	-	0.001	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	36	0	0	72	24	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	0	78	26	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	111	33	39	0	-	0
Stage 1	33	-	-	-	-	-
Stage 2	78	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	886	1041	1571	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	886	1041	1571	-	-	-
Mov Cap-2 Maneuver	886	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1571	-	886	-	-
HCM Lane V/C Ratio	-	-	0.044	-	-
HCM Control Delay (s)	0	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	36	36	0	12	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	39	0	13	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	78	39	0	0	39	0
Stage 1	39	-	-	-	-	-
Stage 2	39	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	925	1033	-	-	1571	-
Stage 1	983	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	918	1033	-	-	1571	-
Mov Cap-2 Maneuver	918	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	975	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1033	1571	-
HCM Lane V/C Ratio	-	-	0.038	0.008	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	36	0	0	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	0	0	0	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	7	7	13	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1014	1075	1606	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1014	1075	1606	-	-	-
Mov Cap-2 Maneuver	1014	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	8.7		0		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1606	-	1014	-	-
HCM Lane V/C Ratio	-	-	0.039	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	26	31	34	695	4	640	44
Future Vol, veh/h	30	31	34	751	4	672	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	-	None
Storage Length	0	290	320	-	100	-	-
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	34	35	39	853	5	764	50

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	1304	407	814	0	853	-	0
Stage 1	799	-	-	-	-	-	-
Stage 2	505	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	152	593	809	-	413	-	-
Stage 1	403	-	-	-	-	-	-
Stage 2	571	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	143	593	809	-	413	-	-
Mov Cap-2 Maneuver	143	-	-	-	-	-	-
Stage 1	384	-	-	-	-	-	-
Stage 2	564	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.5	0.4	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBU	SBT	SBR
Capacity (veh/h)	809	-	143	593	413	-	-
HCM Lane V/C Ratio	0.048	-	0.238	0.059	0.011	-	-
HCM Control Delay (s)	9.7	-	37.9	11.5	13.8	-	-
HCM Lane LOS	A	-	E	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	26	0	0	31	22	662	45	52	611	25
Future Vol, veh/h	0	0	26	0	0	73	22	662	105	140	643	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	85	-	-	95	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	28	0	0	79	24	720	114	152	699	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	363	-	-	417	726	0	0	834	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	634	0	0	585	873	-	-	795	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	634	-	-	585	873	-	-	795	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	12.1	0.3	1.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	873	-	-	634	585	795	-	-
HCM Lane V/C Ratio	0.027	-	-	0.045	0.136	0.191	-	-
HCM Control Delay (s)	9.2	-	-	10.9	12.1	10.6	-	-
HCM Lane LOS	A	-	-	B	B	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0.7	-	-

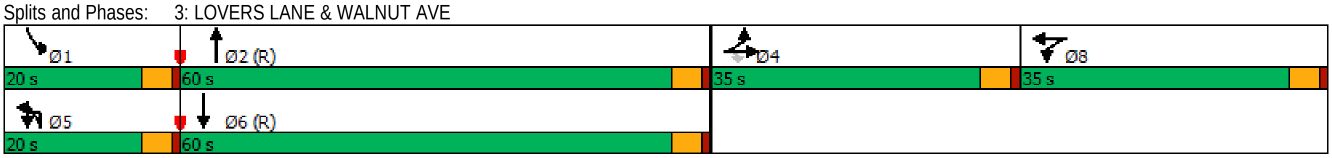
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	109	200	77	104	197	95	10	69	532	121	170	560	115
Future Volume (vph)	109	200	117	128	215	95	18	75	560	121	170	608	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		666	0		0		210		100	245		50
Storage Lanes	0		1	0		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.971				0.973			0.976	
Flt Protected		0.983			0.986			0.950			0.950		
Satd. Flow (prot)	0	1796	1553	0	1749	0	0	1736	3377	0	1736	3388	0
Flt Permitted		0.983			0.986			0.950			0.950		
Satd. Flow (perm)	0	1796	1553	0	1749	0	0	1736	3377	0	1736	3388	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)			127		8				19			16	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			2649				1292			1374	
Travel Time (s)		12.0			40.1				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	118	217	127	139	234	103	20	82	609	132	185	661	125
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	335	127	0	476	0	0	102	741	0	185	786	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases			4										
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5	30.5	30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5	4.5		4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0				0			0	
Act Effct Green (s)		30.5	30.5		30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio		0.20	0.20		0.20			0.10	0.37		0.10	0.37	
v/c Ratio		0.92	0.31		1.31			0.57	0.59		1.03	0.62	
Control Delay		88.5	9.7		204.7			77.3	39.3		139.8	40.4	
Queue Delay		0.0	0.0		0.0			0.0	0.0		0.0	0.0	
Total Delay		88.5	9.7		204.7			77.3	39.3		139.8	40.4	
LOS		F	A		F			E	D		F	D	
Approach Delay		66.9			204.7				43.9			59.4	
Approach LOS		E			F				D			E	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.31
Intersection Signal Delay: 81.0 Intersection LOS: F

Intersection Capacity Utilization 81.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	307	23	13	267	83	34	28	10	66	18	63
Future Vol, veh/h	97	307	23	21	267	83	76	28	14	66	22	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	325	-	100	336	-	50	260	-	-	230	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	345	26	24	300	93	85	31	16	74	25	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	393	0	0	371	0	0	774	1004	345	948	937	150
Stage 1	-	-	-	-	-	-	563	563	-	348	348	-
Stage 2	-	-	-	-	-	-	211	441	-	600	589	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.23	7.33	6.53	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1164	-	-	1186	-	-	302	241	697	228	264	870
Stage 1	-	-	-	-	-	-	510	508	-	642	633	-
Stage 2	-	-	-	-	-	-	772	576	-	487	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1164	-	-	1186	-	-	233	214	697	181	234	870
Mov Cap-2 Maneuver	-	-	-	-	-	-	233	214	-	181	234	-
Stage 1	-	-	-	-	-	-	462	460	-	582	620	-
Stage 2	-	-	-	-	-	-	667	564	-	402	448	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0.5	26.1	24.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	233	278	1164	-	-	1186	-	-	181	511
HCM Lane V/C Ratio	0.366	0.17	0.094	-	-	0.02	-	-	0.41	0.187
HCM Control Delay (s)	29.1	20.6	8.4	-	-	8.1	-	-	38	13.7
HCM Lane LOS	D	C	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	1.6	0.6	0.3	-	-	0.1	-	-	1.8	0.7

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	55	0	0	10	22	0	0	0	22	0	5
Future Vol, veh/h	17	55	111	0	10	22	21	45	0	22	9	8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	64	129	0	12	26	24	52	0	26	10	9
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	1
Approach	EB				WB		NB			SB		
Opposing Approach	WB				EB		SB			NB		
Opposing Lanes	1				1		2			1		
Conflicting Approach Left	SB				NB		EB			WB		
Conflicting Lanes Left	2				1		1			1		
Conflicting Approach Right	NB				SB		WB			EB		
Conflicting Lanes Right	1				2		1			1		
HCM Control Delay	8.1				7.2		8.2			8.2		
HCM LOS	A				A		A			A		

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	32%	9%	0%	71%	0%
Vol Thru, %	68%	30%	31%	29%	0%
Vol Right, %	0%	61%	69%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	183	32	31	8
LT Vol	21	17	0	22	0
Through Vol	45	55	10	9	0
RT Vol	0	111	22	0	8
Lane Flow Rate	77	213	37	36	9
Geometry Grp	5	2	2	7	7
Degree of Util (X)	0.1	0.232	0.042	0.055	0.011
Departure Headway (Hd)	4.678	3.933	4.034	5.48	4.419
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	768	917	890	655	812
Service Time	2.695	1.942	2.048	3.198	2.137
HCM Lane V/C Ratio	0.1	0.232	0.042	0.055	0.011
HCM Control Delay	8.2	8.1	7.2	8.5	7.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.3	0.9	0.1	0.2	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	111	37	3	21	21	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	121	40	3	23	23	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	161	0	170	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	29	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1418	-	820	907
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	994	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1418	-	818	907
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	992	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	822	-	-	1418	-
HCM Lane V/C Ratio	0.029	-	-	0.002	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	22	0	0	44	80	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	0	48	87	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	157	109	130	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	834	945	1455	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	974	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	834	945	1455	-	-	-
Mov Cap-2 Maneuver	834	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1455	-	834	-	-
HCM Lane V/C Ratio	-	-	0.029	-	-
HCM Control Delay (s)	0	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	22	22	0	40	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	24	24	0	43	43

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	153	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	839	1052	-	-	1591	-
Stage 1	999	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	816	1052	-	-	1591	-
Mov Cap-2 Maneuver	816	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	872	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1052	1591	-
HCM Lane V/C Ratio	-	-	0.023	0.027	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	22	0	0	0	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	0	0	0	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	22	22	43	0	-	0
Stage 1	22	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	995	1055	1566	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	995	1055	1566	-	-	-
Mov Cap-2 Maneuver	995	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	8.7		0		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1566	-	995	-	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix D – Synchro Mitigated Analysis Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	88	153	102	95	247	62	15	118	371	63	88	446	113
Future Volume (vph)	88	153	102	95	247	62	15	118	371	63	88	446	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		666	200		0		210		100	245		50
Storage Lanes	1		0	1		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.940			0.970				0.978			0.970	
Flt Protected	0.950			0.950				0.950			0.950		
Satd. Flow (prot)	1736	3263	0	1736	3367	0	0	1736	3395	0	1736	3367	0
Flt Permitted	0.950			0.950				0.950			0.950		
Satd. Flow (perm)	1736	3263	0	1736	3367	0	0	1736	3395	0	1736	3367	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)		96			19				15			24	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1273				1292			1374	
Travel Time (s)		12.0			19.3				14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	105	182	121	113	294	74	18	140	442	75	105	531	135
Shared Lane Traffic (%)													
Lane Group Flow (vph)	105	303	0	113	368	0	0	158	517	0	105	666	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases													
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0				0			0	
Act Effct Green (s)	30.5	30.5		30.5	30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.10	0.37		0.10	0.37	
v/c Ratio	0.30	0.41		0.32	0.53			0.88	0.41		0.59	0.53	
Control Delay	53.4	36.8		53.9	53.6			107.9	35.7		78.2	37.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Delay	53.4	36.8		53.9	53.6			107.9	35.7		78.2	37.4	
LOS	D	D		D	D			F	D		E	D	
Approach Delay		41.1			53.6				52.6			43.0	
Approach LOS		D			D				D			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

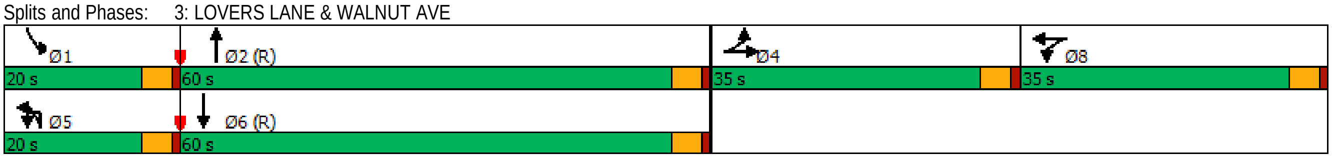
Control Type: Pretimed

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 47.6 Intersection LOS: D

Intersection Capacity Utilization 52.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	100	184	71	96	182	88	9	63	491	112	157	518	106
Future Volume (vph)	100	184	71	96	182	88	9	63	491	112	157	518	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		666	200		0		210		100	245		50
Storage Lanes	1		0	1		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.958			0.951				0.972			0.975	
Flt Protected	0.950			0.950				0.950			0.950		
Satd. Flow (prot)	1736	3325	0	1736	3301	0	0	1736	3374	0	1736	3384	0
Flt Permitted	0.950			0.950				0.950			0.950		
Satd. Flow (perm)	1736	3325	0	1736	3301	0	0	1736	3374	0	1736	3384	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)		34			49				21			18	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1273				1292			1374	
Travel Time (s)		12.0			19.3				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	109	200	77	104	198	96	10	68	534	122	171	563	115
Shared Lane Traffic (%)													
Lane Group Flow (vph)	109	277	0	104	294	0	0	78	656	0	171	678	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases													
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0				0			0	
Act Effct Green (s)	30.5	30.5		30.5	30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.10	0.37		0.10	0.37	
v/c Ratio	0.31	0.39		0.30	0.41			0.44	0.52		0.96	0.54	
Control Delay	53.7	47.1		53.4	45.0			71.4	37.4		122.1	38.0	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Delay	53.7	47.1		53.4	45.0			71.4	37.4		122.1	38.0	
LOS	D	D		D	D			E	D		F	D	
Approach Delay		48.9			47.2				41.0			54.9	
Approach LOS		D			D				D			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

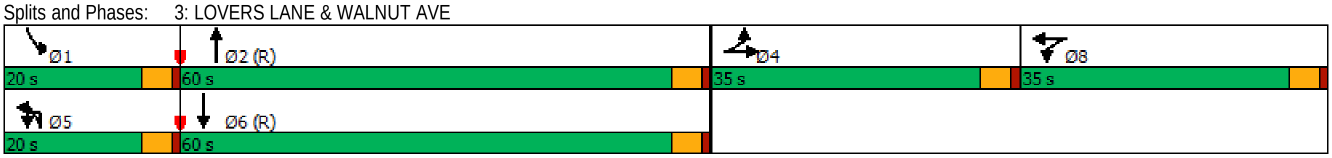
Control Type: Pretimed

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 48.3 Intersection LOS: D

Intersection Capacity Utilization 54.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



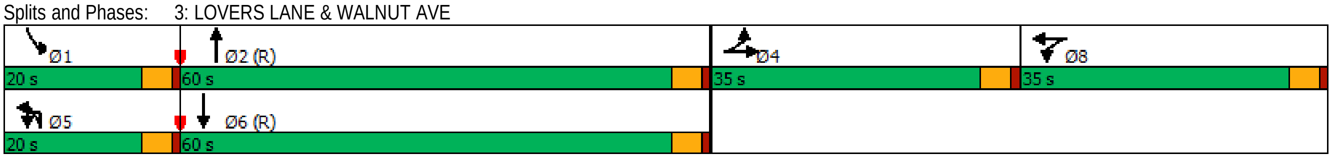
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU
Lane Configurations							
Traffic Volume (vph)	88	153	102	95	247	62	15
Future Volume (vph)	88	153	114	134	274	62	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		666	200		0	
Storage Lanes	1		0	1		0	
Taper Length (ft)	25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95
Frt		0.936			0.972		
Flt Protected	0.950			0.950			
Satd. Flow (prot)	1736	3249	0	1736	3374	0	0
Flt Permitted	0.950			0.950			
Satd. Flow (perm)	1736	3249	0	1736	3374	0	0
Right Turn on Red			Yes			Yes	
Satd. Flow (RTOR)		114			16		
Link Speed (mph)		45			45		
Link Distance (ft)		792			1273		
Travel Time (s)		12.0			19.3		
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	105	182	136	160	326	74	33
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	318	0	160	400	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)		12			12		
Link Offset(ft)		0			0		
Crosswalk Width(ft)		16			16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9
Turn Type	Split	NA		Split	NA		Prot
Protected Phases	4	4		8	8		5
Permitted Phases							
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5
Total Split (s)	35.0	35.0		35.0	35.0		20.0
Total Split (%)	23.3%	23.3%		23.3%	23.3%		13.3%
Maximum Green (s)	30.5	30.5		30.5	30.5		15.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		
Total Lost Time (s)	4.5	4.5		4.5	4.5		
Lead/Lag							Lead
Lead-Lag Optimize?							Yes
Walk Time (s)	7.0	7.0		7.0	7.0		
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		
Pedestrian Calls (#/hr)	0	0		0	0		
Act Effct Green (s)	30.5	30.5		30.5	30.5		
Actuated g/C Ratio	0.20	0.20		0.20	0.20		
v/c Ratio	0.30	0.42		0.45	0.57		
Control Delay	53.4	34.7		57.3	55.4		
Queue Delay	0.0	0.0		0.0	0.0		
Total Delay	53.4	34.7		57.3	55.4		
LOS	D	C		E	E		
Approach Delay		39.4			55.9		
Approach LOS		D			E		

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	118	371	63	88	446	113
Future Volume (vph)	127	415	63	88	462	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	210		100	245		50
Storage Lanes	1		0	1		0
Taper Length (ft)	25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.980			0.970	
Flt Protected	0.950			0.950		
Satd. Flow (prot)	1736	3402	0	1736	3367	0
Flt Permitted	0.950			0.950		
Satd. Flow (perm)	1736	3402	0	1736	3367	0
Right Turn on Red			Yes			Yes
Satd. Flow (RTOR)		13			23	
Link Speed (mph)		60			55	
Link Distance (ft)		1292			1374	
Travel Time (s)		14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	151	494	75	105	550	135
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	569	0	105	685	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12	
Link Offset(ft)		0			0	
Crosswalk Width(ft)		16			16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9
Turn Type	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	
Permitted Phases						
Minimum Split (s)	9.5	22.5		9.5	22.5	
Total Split (s)	20.0	60.0		20.0	60.0	
Total Split (%)	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	
Walk Time (s)		7.0			7.0	
Flash Dont Walk (s)		11.0			11.0	
Pedestrian Calls (#/hr)		0			0	
Act Effct Green (s)	15.5	55.5		15.5	55.5	
Actuated g/C Ratio	0.10	0.37		0.10	0.37	
v/c Ratio	1.03	0.45		0.59	0.54	
Control Delay	138.6	36.2		78.2	37.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	138.6	36.2		78.2	37.9	
LOS	F	D		E	D	
Approach Delay		61.2			43.2	
Approach LOS		E			D	

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 80	
Control Type: Pretimed	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 50.8	Intersection LOS: D

Intersection Capacity Utilization 52.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	100	184	71	96	182	88	9	63	491	112	157	518	106
Future Volume (vph)	100	184	111	120	200	88	17	69	519	112	157	566	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		666	200		0		210		100	245		50
Storage Lanes	1		0	1		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.943			0.954				0.973			0.976	
Flt Protected	0.950			0.950				0.950			0.950		
Satd. Flow (prot)	1736	3273	0	1736	3311	0	0	1736	3377	0	1736	3388	0
Flt Permitted	0.950			0.950				0.950			0.950		
Satd. Flow (perm)	1736	3273	0	1736	3311	0	0	1736	3377	0	1736	3388	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)		76			42				19			16	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1273				1292			1374	
Travel Time (s)		12.0			19.3				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	109	200	121	130	217	96	18	75	564	122	171	615	115
Shared Lane Traffic (%)													
Lane Group Flow (vph)	109	321	0	130	313	0	0	93	686	0	171	730	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases													
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0				0			0	
Act Effct Green (s)	30.5	30.5		30.5	30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.10	0.37		0.10	0.37	
v/c Ratio	0.31	0.44		0.37	0.44			0.52	0.54		0.96	0.58	
Control Delay	53.7	41.6		55.0	47.3			74.8	38.1		122.1	39.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Delay	53.7	41.6		55.0	47.3			74.8	38.1		122.1	39.2	
LOS	D	D		E	D			E	D		F	D	
Approach Delay		44.7			49.6				42.5			54.9	
Approach LOS		D			D				D			D	

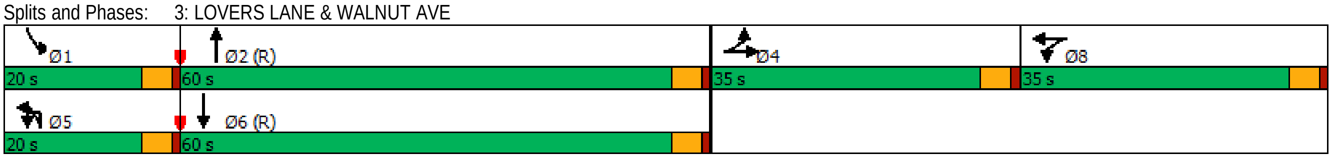
Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 48.5 Intersection LOS: D

Intersection Capacity Utilization 54.2% ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	94	164	109	101	264	66	16	126	397	67	94	477	121
Future Volume (vph)	94	164	109	101	264	66	16	126	397	67	94	477	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		666	200		0		210		100	245		50
Storage Lanes	1		0	1		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.940			0.970				0.978			0.970	
Flt Protected	0.950			0.950				0.950			0.950		
Satd. Flow (prot)	1736	3263	0	1736	3367	0	0	1736	3395	0	1736	3367	0
Flt Permitted	0.950			0.950				0.950			0.950		
Satd. Flow (perm)	1736	3263	0	1736	3367	0	0	1736	3395	0	1736	3367	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)		96			19				14			24	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1273				1292			1374	
Travel Time (s)		12.0			19.3				14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	112	195	130	120	314	79	19	150	473	80	112	568	144
Shared Lane Traffic (%)													
Lane Group Flow (vph)	112	325	0	120	393	0	0	169	553	0	112	712	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases													
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0				0			0	
Act Effct Green (s)	30.5	30.5		30.5	30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.10	0.37		0.10	0.37	
v/c Ratio	0.32	0.44		0.34	0.56			0.94	0.44		0.63	0.57	
Control Delay	53.8	38.4		54.4	54.6			119.8	36.4		80.6	38.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Delay	53.8	38.4		54.4	54.6			119.8	36.4		80.6	38.4	
LOS	D	D		D	D			F	D		F	D	
Approach Delay		42.3			54.6				55.9			44.1	
Approach LOS		D			D				E			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 80

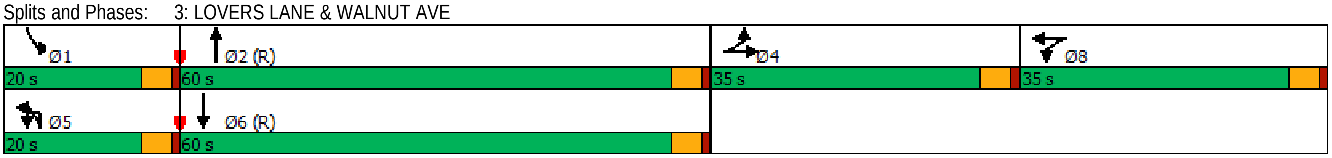
Control Type: Pretimed

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 49.4 Intersection LOS: D

Intersection Capacity Utilization 54.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



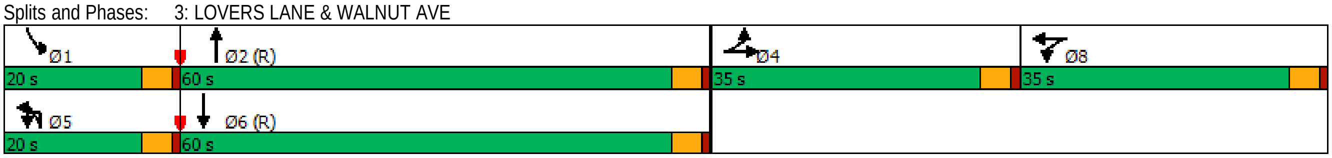
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	109	200	77	104	197	95	10	69	532	121	170	560	115
Future Volume (vph)	109	200	77	104	197	95	10	69	532	121	170	560	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		666	200		0		210		100	245		50
Storage Lanes	1		0	1		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.958			0.951				0.972			0.974	
Flt Protected	0.950			0.950				0.950			0.950		
Satd. Flow (prot)	1736	3325	0	1736	3301	0	0	1736	3374	0	1736	3381	0
Flt Permitted	0.950			0.950				0.950			0.950		
Satd. Flow (perm)	1736	3325	0	1736	3301	0	0	1736	3374	0	1736	3381	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)		34			48				21			18	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1273				1292			1374	
Travel Time (s)		12.0			19.3				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	118	217	84	113	214	103	11	75	578	132	185	609	125
Shared Lane Traffic (%)													
Lane Group Flow (vph)	118	301	0	113	317	0	0	86	710	0	185	734	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases													
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0				0			0	
Act Effct Green (s)	30.5	30.5		30.5	30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.10	0.37		0.10	0.37	
v/c Ratio	0.34	0.43		0.32	0.45			0.48	0.56		1.03	0.58	
Control Delay	54.2	48.2		53.9	46.4			73.1	38.5		139.8	39.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Delay	54.2	48.2		53.9	46.4			73.1	38.5		139.8	39.2	
LOS	D	D		D	D			E	D		F	D	
Approach Delay		49.9			48.4				42.2			59.4	
Approach LOS		D			D				D			E	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 50.7 Intersection LOS: D

Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	94	164	109	101	264	66	16	126	397	67	94	477	121
Future Volume (vph)	94	164	121	140	291	66	29	135	441	67	94	493	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		666	200		0		210		100	245		50
Storage Lanes	1		0	1		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.936			0.972				0.980			0.970	
Flt Protected	0.950			0.950				0.950			0.950		
Satd. Flow (prot)	1736	3249	0	1736	3374	0	0	1736	3402	0	1736	3367	0
Flt Permitted	0.950			0.950				0.950			0.950		
Satd. Flow (perm)	1736	3249	0	1736	3374	0	0	1736	3402	0	1736	3367	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)		111			16				13			23	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1273				1292			1374	
Travel Time (s)		12.0			19.3				14.7			17.0	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	112	195	144	167	346	79	35	161	525	80	112	587	144
Shared Lane Traffic (%)													
Lane Group Flow (vph)	112	339	0	167	425	0	0	196	605	0	112	731	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Split	NA		Split	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	5	2		1	6	
Permitted Phases													
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0				0			0	
Act Effct Green (s)	30.5	30.5		30.5	30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.10	0.37		0.10	0.37	
v/c Ratio	0.32	0.45		0.47	0.61			1.09	0.48		0.63	0.58	
Control Delay	53.8	36.8		57.9	56.4			154.7	36.9		80.6	38.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Delay	53.8	36.8		57.9	56.4			154.7	36.9		80.6	38.8	
LOS	D	D		E	E			F	D		F	D	
Approach Delay		41.1			56.8				65.7			44.4	
Approach LOS		D			E				E			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

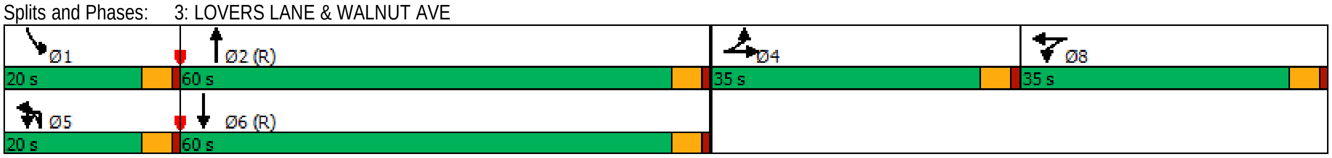
Control Type: Pretimed

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 52.9 Intersection LOS: D

Intersection Capacity Utilization 54.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	109	200	77	104	197	95	10	69	532	121	170	560	115
Future Volume (vph)	109	200	117	104	197	95	18	75	560	121	170	608	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		666	200		0		210		100	245		50
Storage Lanes	1		0	1		0		1		0	1		0
Taper Length (ft)	25			25				25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.945			0.951				0.973			0.976	
Flt Protected	0.950			0.950				0.950			0.950		
Satd. Flow (prot)	1736	3280	0	1736	3301	0	0	1736	3377	0	1736	3388	0
Flt Permitted	0.950			0.950				0.950			0.950		
Satd. Flow (perm)	1736	3280	0	1736	3301	0	0	1736	3377	0	1736	3388	0
Right Turn on Red			Yes			Yes				Yes			Yes
Satd. Flow (RTOR)		71			48				19			16	
Link Speed (mph)		45			45				60			55	
Link Distance (ft)		792			1273				1292			1374	
Travel Time (s)		12.0			19.3				14.7			17.0	
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	0.92
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Adj. Flow (vph)	118	217	127	113	214	103	20	82	609	132	185	661	125
Shared Lane Traffic (%)													
Lane Group Flow (vph)	118	344	0	113	317	0	0	102	741	0	185	786	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12				12			12	
Link Offset(ft)		0			0				0			0	
Crosswalk Width(ft)		16			16				16			16	
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		Prot	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	5	2		1	6	
Permitted Phases													
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	9.5	22.5		9.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		20.0	20.0	60.0		20.0	60.0	
Total Split (%)	23.3%	23.3%		23.3%	23.3%		13.3%	13.3%	40.0%		13.3%	40.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		15.5	15.5	55.5		15.5	55.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes		Yes	Yes	
Walk Time (s)	7.0	7.0		7.0	7.0				7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0				11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0				0			0	
Act Effct Green (s)	30.5	30.5		30.5	30.5			15.5	55.5		15.5	55.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20			0.10	0.37		0.10	0.37	
v/c Ratio	0.34	0.48		0.32	0.45			0.57	0.59		1.03	0.62	
Control Delay	54.2	43.9		53.9	46.4			77.3	39.3		139.8	40.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0	
Total Delay	54.2	43.9		53.9	46.4			77.3	39.3		139.8	40.4	
LOS	D	D		D	D			E	D		F	D	
Approach Delay		46.5			48.4				43.9			59.4	
Approach LOS		D			D				D			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

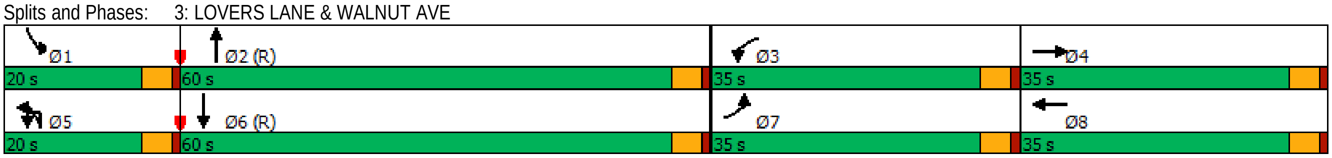
Control Type: Pretimed

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 50.6 Intersection LOS: D

Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: LOVERS LANE & WALNUT AVE



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May 13, 2022

Melody Nohemi Haigh
DR Horton
419 West Murray Avenue
Visalia, CA 93291

RE: Pearl Woods Vehicle Miles Traveled (VMT) Assessment

Dear Ms. Haigh:

The following Vehicle Miles Travelled (VMT) Assessment has been prepared for the Pearl Woods single-family residential development located at Cherry Avenue and McAuliff Street – Assessor's Parcel Number 127-030-038.

BACKGROUND

In December 2018, modifications to the California Environmental Quality Act (CEQA) Guidelines were adopted by the Governor's Office of Planning and Research (OPR), which requires all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the new measure for identifying transportation impacts for land use projects. This statewide mandate, enacted by the State Legislature through Senate Bill 743, took effect July 1, 2020. This analysis relies on the *City of Visalia VMT Thresholds and Implementation Guidelines*, adopted on March 15, 2021. If any guidelines do not apply, the analysis will rely on information prepared by OPR as part of their December 2018 publication entitled *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory), which provides guidance for evaluating transportation impacts based on VMT.[1]

PROJECT SCREENING

The City of Visalia guidelines provide details on appropriate "screening thresholds" that can be used to identify when a proposed land use project is anticipated to result in a less-than-significant impact without conducting a more detailed VMT analysis. Screening thresholds include:

1. Residential and office projects within a Transit Priority Area
2. Locally serving retail projects up to 50,000 square feet
3. Residential, office, or mixed-use projects within low-VMT generating areas
4. 100 percent affordable housing projects
5. Projects that are consistent with the City's General Plan and generating fewer than 1,000 daily trips

A land use project need only meet one of the above screening thresholds to result in a less than significant impact.

[1] (Governor's Office of Planning and Research (OPR) December 2018)

1. Transit Priority Area Screening

The City of Visalia identified the Transit Priority Area as illustrated on Attachment A. The project is not located within the Transit Priority Area.

Transit Priority Area screening threshold is not met.

2. Retail Screening

As the project is residential, this screening is not applicable.

Retail screening threshold is not met.

3. Low VMT-generating Area Screening

The City of Visalia identified the Low VMT-generating Area as illustrated on Attachment A. The project is located within the Low VMT-generating Area.

Low VMT-generating Area screening threshold is met.

4. Affordable Housing Screening

The Technical Advisory asserts that "a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT. Evidence supports a presumption of less than significant impact for a 100 percent affordable residential development (or the residential component of a mixed-use development) in infill locations. Lead agencies may develop their own presumption of less than significant impact for residential projects (or residential portions of mixed-use projects) containing a particular amount of affordable housing, based on local circumstances and evidence."

The Project would not meet Affordable Housing screening as the Project does not provide 100 percent affordable housing in an infill area.

Affordable Housing screening threshold is not met.

5. Trip Generation Screening

The project proposes 273 single-family dwelling units. Per trip generation rates taken from *Trip Generation, 11th Edition – Institute of Traffic Engineers (ITE)*, the project is expected to generate 2,574 daily trips. While the project is consistent with the City's General Plan, this trip generation exceeds the 1,000 daily trip threshold.

Trip Generation screening threshold is not met.

CONCLUSION

One of the five screening criteria was met, specifically No. 3 – Low VMT-generating Area. Because of this, the project is eligible to be screened out based on City of Visalia guidelines, would result in a less than significant impact, and no further VMT analysis or potential mitigation measures are necessary.

If you need additional information, please do not hesitate to contact me at (559) 636-1166 or mhamilton@ppeng.com.

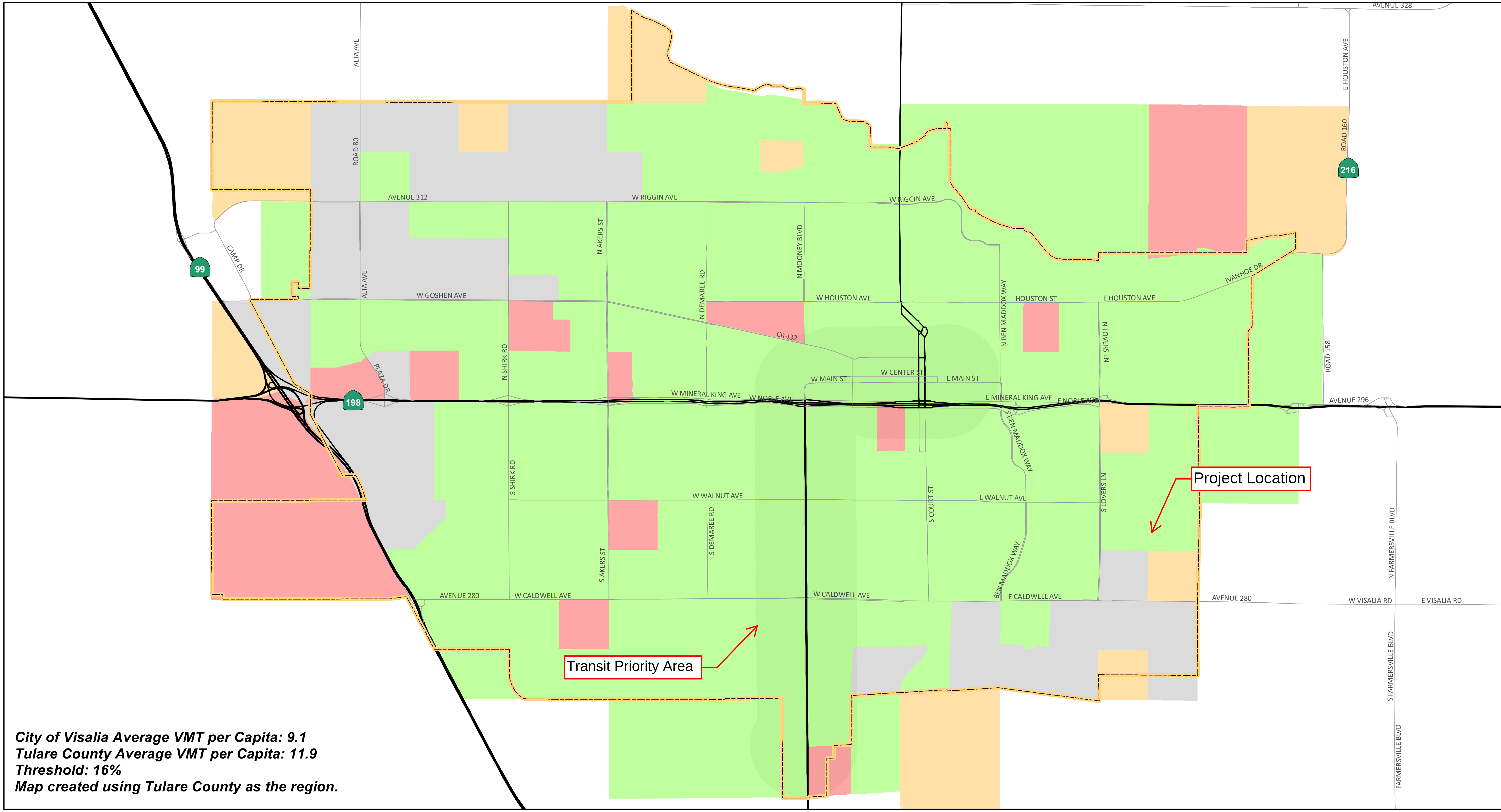
Respectfully,

Matt Hamilton, PE
Senior Engineer

c: Jarred Olsen – Provost & Pritchard
Matt Barnes – Provost & Pritchard

Attachments: One

ATTACHMENT A



LSA

LEGEND

City of Visalia Sphere of Influence

VMT per Capita

No Population

10.0 or Less

More than 10.0, up to 11.9

Greater than 11.9

0 2500 5000

FEET

FIGURE 6

City of Visalia VMT Thresholds and Implementation Guidelines

City of Visalia - Existing VMT per Capita

SOURCE: TCAG Model; City of Visalia;Tulare County (11/20)

R:\VSL2001 Visalia VMT\GIS\VMT_Maps_01-21-2021\fig6_VMT_CAP.mxd (1/21/2021)