FOR THE FAMILY FOODLAND SERVICE STATION

INITIAL STUDY – MITIGATED NEGATIVE DECLARATION

June 2020

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City of Tulare
Community and Economic Development Department
411 East Kern Avenue
Tulare, CA 93274

Executive Summary

Project Title: Family Foodland Service Station

Project Location

The project site is located in Tulare County in the northwestern area of the City of Tulare, on the southeast corner of West Street and Prosperity Avenue. The project area is composed of one parcel with Assessor Parcel Number 169-360-041, totaling approximately 7.5 acres.

The City of Tulare General Plan designates the project site as Community Commercial and the existing zoning is C-3 (Retail Commercial). The project site is bordered by low density residential (single-family houses) to the south, to the east, single-family houses and an existing service station to the west, and larger lot residential estate single-family residential properties to the north.

Project Overview

The proposed project involves the construction of a service station and convenience store with lease space for a future tenant. The service station will include one fuel canopy with eight pumps (sixteen fueling stations) for vehicle fueling. A 4,200 sq. ft. commercial building will be constructed and will include space for a convenience store space associated with the service station and space for a future tenant lease space. Construction is proposed to begin January 2021 and continue through August 2021.

Summary of IS/ND Findings

The analysis in Section 3 of this Initial Study and Proposed Mitigated Negative Declaration (IS/MND) evaluates the potential environmental impacts associated with project implementation. It was found that implementation of the proposed project would not result in potentially significant impacts on the environment with mitigation, as detailed in Section 3.

Mitigation Monitoring and Reporting Program

As required by Public Resources Code Section 21081.6, subd. (a)(1), a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the project in order to monitor the implementation of the mitigation measures that have been adopted for the project. This Mitigation Monitoring and Reporting Program (MMRP) has been created based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed service station and convenience store with lease space for a future tenant.

The first column of the table identifies the mitigation measure. The second column names the party responsible for carrying out the required action. The third column, “Timing of Mitigation Measure” identifies the time the mitigation measure should be initiated. The fourth column, “Responsible Party for Monitoring,” names the party ensuring that the mitigation measure is implemented. The last column will be used by the City to ensure that the individual mitigation measures have been monitored. Plan checking and verification of mitigation compliance shall be the responsibility of the City of Tulare.

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring	Verification (name/date)
Mitigation Measure AQ-1: The proposed project is subject to Rule 9510, as required by the SJVAPCD. The project applicant shall pay the Indirect Source Review Rule fee for any required reductions that have not been accomplished through project mitigation commitments, prior to issuance of building permits. The fee calculations will be conducted by the SJVAPCD.	Project Applicant	Prior to Issuance of building permits	City of Tulare	
Mitigation Measure CUL-1: If cultural resources are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of Interior's Professional Qualifications Standards for archaeology (NPS 1983) shall be contacted immediately to evaluate the find. If the discovery proves to be significant, additional work such as data recovery, excavation, and Native American consultation may be warranted until the qualified archaeologist has determined that ground-disturbing activities may resume in the area of the find, or in alternate locations on the	Construction Contractor	During ground-disturbing construction activities	City of Tulare	

site, as approved by the project's qualified archaeologist, in consultation with any required federal, state, local, or Tribal authorities.			
Mitigation Measure CUL-2: The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.	Construction Contractor	During ground-disturbing construction activities	City of Tulare
Mitigation Measure GEO-1: If fossils are encountered during ground-disturbing activities, work in the immediate area must halt and a qualified paleontologist	Construction Contractor	During ground-disturbing construction activities	City of Tulare

shall be contacted immediately to evaluate the find. If the discovery proves to be significant, additional work such as data recovery and excavation, may be warranted until the qualified paleontologist has determined that ground-disturbing activities may resume in the area of the find or in alternate locations on the site, as approved by the project's qualified paleontologist, in consultation with any required federal, state, or local authorities.			
Mitigation Measure HAZ -1: Prior to the commencement of a business operation that involves the transport, storage, use, or disposal of a significant quantity hazardous material within the Project site, the business owner shall submit a Hazardous Materials Business Plan (HMBP) for review and approval by the Tulare County Health and Human Services Agency, Environmental Health Division. The HMBP shall establish management practices for handling, storing, and disposal of hazardous materials, including fuels, paints, cleaners, solvents, pesticides, fertilizers, etc., during operations to reduce the potential for spills and to direct the safe handling of these materials if encountered. The areas shall be designed with spillage catchments such that any accidental spillage is prevented from entering waterways. The	Project Applicant and Business Operator	Prior to Issuance of Certificate of Occupancy	City of Tulare

business owner shall also consult with the Tulare County Health and Human Services Agency, Environmental Health Division to ensure that the particular business operations are compliant with all local, state, and federal regulations relative to their operations (i.e. proper permits for the installation and use of an underground storage of hazardous substances (USTs)). The approved HMBP and any other permit deemed to be required in order to commence the specific business operations shall be maintained onsite and all personnel shall acknowledge that they have reviewed and understand the HMBP and any other permit requirements.			
Mitigation Measure TRA-1: Prior to opening day of the proposed project, the project applicant shall coordinate with the City to construct the recommended roadway/intersection improvements for the intersection of Pleasant Avenue and West Street to achieve acceptable LOS at this intersection. The applicant's fair share of the costs of these improvements, subsequently adjusted to account for fees paid towards these improvements by the project to the City's Development Impact Fee Program, shall be identified and acceptable to the City Engineer.	Project Applicant	Prior to Issuance of Certificate of Occupancy	City of Tulare

City of Tulare
Community and Economic Development Department
411 East Kern Avenue
Tulare, CA 93274

Introduction

Project Title: Family Foodland Service Station

This Initial Study/Mitigated Negative Declaration has been prepared for the City of Tulare to address the environmental effects of the construction of a service station and convenience store with lease space for a future tenant on an approximately 1.02-acre portion of a 7.52-acre parcel located on the southeast corner of Prosperity Avenue and West Street within the City of Tulare, California. This document has been prepared in accordance with the California Environmental Quality Act (CEQA) Guidelines. The City of Tulare is the CEQA lead agency for this project.

The project site is located within Tulare County in the northwestern area of the City of Tulare, on the southeast corner of Prosperity Avenue and West Street.

This Initial Study document for the **Family Foodland Service Station**, is organized as follows:

Section 1: Environmental Review Process
The Environmental Review Process covers the procedures, under the California Environmental Quality Act (CEQA), for evaluating the environmental effects of the proposed project including the CEQA guidelines, Initial Study, Environmental Checklist, and Notice of Intent to adopt a Mitigated Negative Declaration, Mitigated Negative Declaration, and the Notice of Determination.

Section 2: Project Description
The Project Description identifies the project location, provides a background to the project, and describes the project.

Section 3: Evaluation of Environmental Impacts
Evaluation of Environmental Impacts contains the CEQA Environmental Checklist, Environmental Factors Potentially Affected, Evaluation of Environmental Impacts, Draft Notice of Intent to Adopt Initial Study/Mitigated Negative Declaration, Draft Mitigated Negative Declaration, Notice of Completion and Environmental Document Transmittal form, Draft Notice of Determination, and a Schedule of Compliance with CEQA for a Mitigated Negative Declaration.

Section 4: References
References provides a list of reference material used during the preparation of the Initial Study.

Section 5: List of Report Preparers
The List of Report Preparers provides a list of key personnel involved in the preparation of the Initial Study.

Appendices
The Appendices contain the Traffic Impact Study completed, as well as CalEEMod modeling output sheets for potential Air Quality, Greenhouse Gas, and Energy impacts for the proposed project.

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SECTON 1
CEQA Environmental Review Process

Project Title: Family Foodland Service Station

1.1 California Environmental Quality Act Guidelines

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

> *(1) Provide the lead agency with information to use as the basis for deciding whether to prepare an EIR or negative declaration;*
>
> *(2) Enable an applicant or lead agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a negative declaration;*
>
> *(3) Assist the preparation of an EIR, if one is required, by:*
>
> > *(A) Focusing the EIR on the effects determined to be significant,*
> >
> > *(B) Identifying the effects determined not to be significant,*
> >
> > *(C) Explaining the reasons for determining that potentially significant effects would not be significant, and*
> >
> > *(D) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.*
>
> *(4) Facilitate environmental assessment early in the design of a project;*
>
> *(5) Provide documentation of the factual basis for the finding in a negative declaration that a project will not have a significant effect on the environment;*

(6)Eliminate unnecessary EIRs;

(7)Determine whether a previously prepared EIR could be used with the project.

1.2 Initial Study

The Initial Study provided herein covers the potential environmental effects of the construction of a service station and convenience store with lease space for a future tenant. on an approximately 1.02-acre portion of a 7.52-acre parcel within the City of Tulare, California.

The City of Tulare will act as the Lead Agency for processing the Initial Study/Mitigated Negative Declaration pursuant to the CEQA and the CEQA Guidelines.

1.3 Environmental Checklist

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

1.4 Notice of Intent to Adopt a Negative Declaration

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

Prior to approving the project, the Lead Agency shall consider the proposed Negative Declaration together with any comments received during the public review process, and shall adopt the proposed Negative Declaration only if it finds on the basis of the whole record before it, that there is no substantial evidence that the project will have a significant effect on the environment and that the Negative Declaration reflects the Lead Agency's independent judgment and analysis.

The written and oral comments received during the public review period will be considered by the City of Tulare prior to adopting the Negative Declaration.

Regardless of the type of CEQA document that must be prepared, the overall purpose of the CEQA process is to:

1) Assure that the environment and public health and safety are protected in the face of discretionary projects initiated by public agencies or private concerns;

2) Provide for full disclosure of the project's environmental effects to the public, the agency decision-makers who will approve or deny the project, and the responsible trustee agencies charged with managing resources (e.g. wildlife, air quality) that may be affected by the project; and

3) Provide a forum for public participation in the decision-making process pertaining to potential environmental effects.

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

The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment. Less than significant impacts have been identified.

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

1.5 Negative Declaration or Mitigated Negative Declaration

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

The proposed Negative Declaration or Mitigated Negative Declaration circulated for public review shall include the following:

(a) A brief description of the project, including a commonly used name for the project.

(b) The location of the project, preferably shown on a map.

(c) A proposed finding that the project will not have a significant effect on the environment.

(d) An attached copy of the Initial Study documenting reasons to support the finding.

(e) Mitigation measures, if any.

1.6 Intended Uses of Initial Study/Negative Declaration Documents

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

The City of Tulare, as Lead Agency, will make a determination, based on the environmental review for the Initial Study and comments from the general public, if there are less than significant impacts from the proposed project and the requirements of CEQA can be met by adoption of a Negative Declaration.

1.7 Notice of Determination (NOD)

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

> *(1) An identification of the project including the project title as identified on the proposed negative declaration, its location, and the State Clearinghouse identification number for the proposed negative declaration if the notice of determination is filed with the State Clearinghouse.*
>
> *(2) A brief description of the project.*
>
> *(3) The agency's name and the date on which the agency approved the project.*
>
> *(4) The determination of the agency that the project will not have a significant effect on the environment.*
>
> *(5) A statement that a negative declaration or a mitigated negative declaration was adopted pursuant to the provisions of CEQA.*
>
> *(6) A statement indicating whether mitigation measures were made a condition of the approval of the project, and whether a mitigation monitoring plan/program was adopted.*
>
> *(7) The address where a copy of the negative declaration or mitigated negative declaration may be examined.*

(8) The Notice of Determination filed with the County Clerk shall be available for public inspection and shall be posted by the County Clerk within 24 hours of receipt for a period of at least 30 days. Thereafter, the clerk shall return the Notice to the Lead Agency with a notation of the period posted.

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City of Tulare
Community and Economic Development Department
411 East Kern Avenue
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SECTON 2
Project Description

Project Title: Family Foodland Service Station

2.1 Project Location

The project site is located in Tulare County in the northwestern area of the City of Tulare, on the southeast corner of Prosperity Avenue and West Street. The project area is composed of one parcel that has been assigned Assessor Parcel Number (APN 169-390-041). The project is proposed to occupy an approximately 1.02-acre portion of the 7.52-acre parcel.

The City of Tulare General Plan designates the project site as Community Commercial and the existing zoning designation is C-3 (Retail Commercial). The project site is bordered by residential properties to the south and east. Prosperity Avenue and residential properties are established to the north. West Street, residential properties as well as an existing service station and convenience store currently exist to the west.

2.2 Project Description

The proposed project involves the construction of a service station and convenience store with lease space for a future tenant. The service station will include one fuel canopy with eight pumps (sixteen fueling stations) for vehicle fueling. A 4,200 sq. ft. commercial building will be constructed and will include 3,319 sq. ft. for convenience store space associated with the service station. The commercial building will also include an approximately 881 sq. ft future tenant lease space.

Access to the site will be from two new drive approaches. One drive approach will be established off of Prosperity Avenue while the other drive approach will be established off of West Street. The proposed project will establish improvements such as curb, gutter, and sidewalk along both Prosperity Avenue and West Street as well and will be requirements for the establishment of parking, landscaping and a City standard trash enclosure.

Project Construction

Construction of the Project is expected to begin in January 2021 and be completed in August 2021. Construction activities would generally follow these steps:

1. Mobilization of equipment, materials and staffing resources.

2. Site preparation and grading. Site will be graded and prepared for construction. The site will be graded to neutral compaction 95% or better (no exiting improvements onsite).

3. Construction and paving. Installation of fuel storage tanks, fuel pumps, fuel canopies, construction of commercial building (convenience store and future lease space), construction of parking lot facilities, and installation of new City standard drive approaches.

4. Operations

Operations

A 4,200 sq. ft. commercial building will be constructed and will include 3,400 sq. ft. for convenience store space associated with the service station. The operating hours of the service station and convenience store will be from 6:00 a.m. to 11:00 p.m. seven days per week. The service station and convenience store will employ 6 employees working 2 shifts, with 3 employees per shift. It is anticipated that 1 fuel tanker per week will deliver diesel fuel and gasoline to the service station. Additional truck deliveries will also be required weekly in order to provide inventory for the associated convenience store and future leased space.

The commercial building will also include one future tenant lease space totaling 800 sq. ft. A possible future tenant of the lease space will be limited to a permitted use within the C-3 (Retail Commercial) zone that can operate in conjunction with the proposed service station and convenience store. The most likely tenant for this space is a fast food or retail commercial type use such as a sandwich shop. Future tenants will be required to apply for a City of Tulare business license, at which time City of Tulare staff will review the proposed use to ensure that it is a permitted use, is compatible with the proposed service station, and meets all required development standards of the C-3 zone. Since the proposed project will be developing the site fully, including the lease space, the exterior should be consistent with the C-3 development standards, similarly applicable to the convenience store and service station.

Figure 2-1 Location

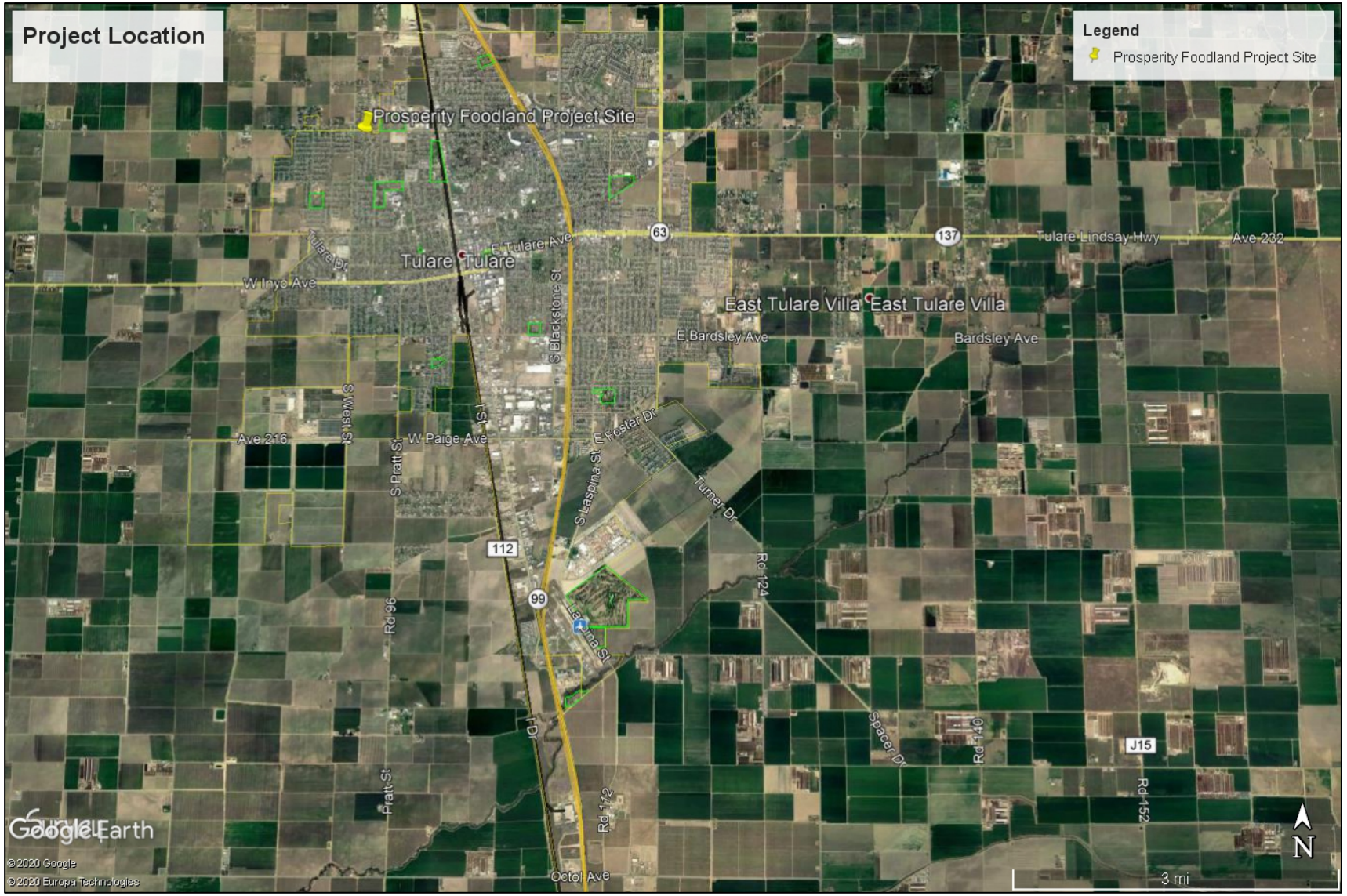
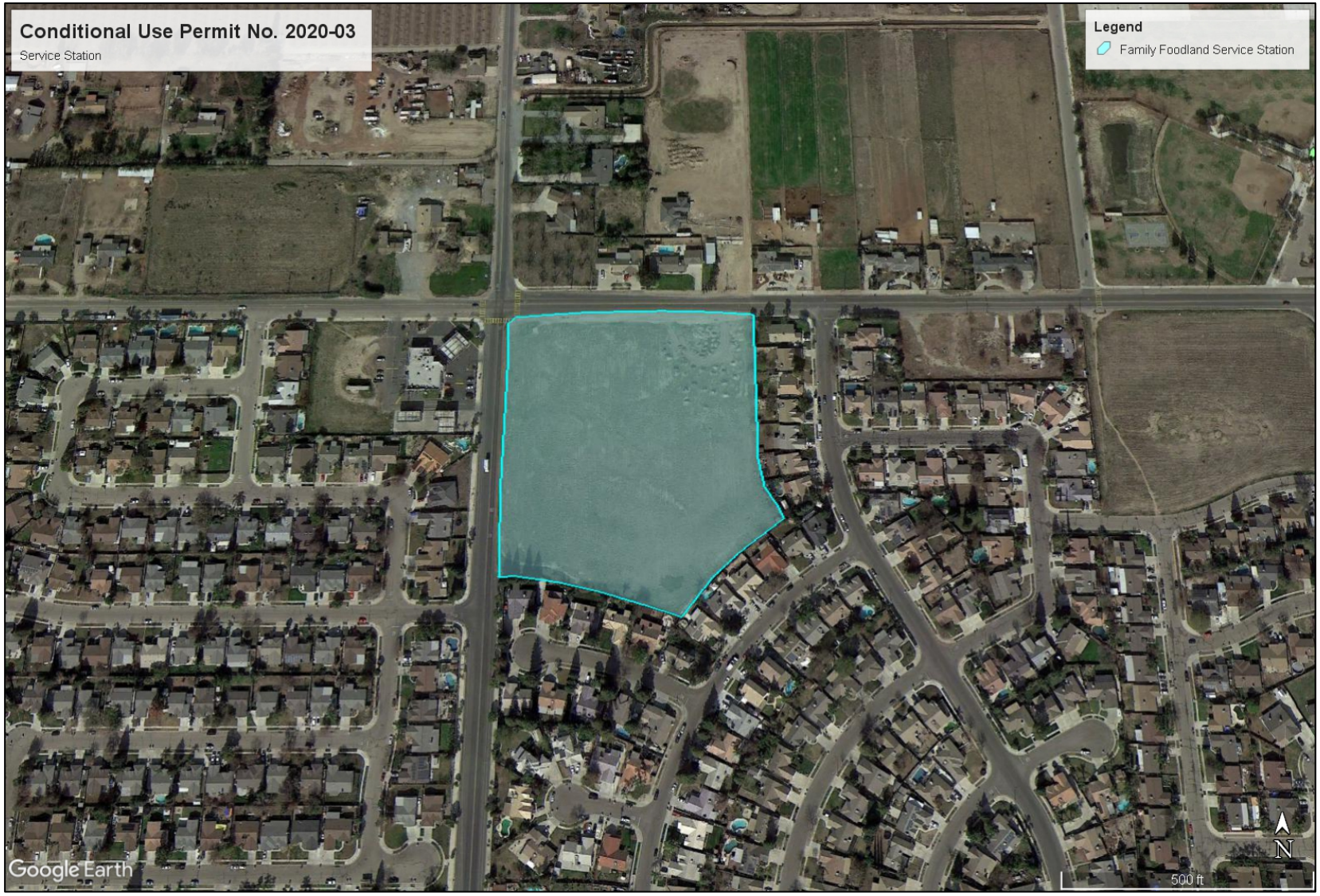


Figure 2-2 Project Vicinity



Photos of Site

1. View of proposed Project site from West Street looking to the northeast.

2. View of proposed Project site from West Street looking to the east.

3. View from the northwest corner of the proposed Project site looking to the south along West Street.

4. View of proposed Project site from north side of property (Prosperity Avenue) looking to the southwest.

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SECTON 3
Evaluation of Environmental Impacts

Project Title: Family Foodland Service Station

This document is the Initial Study/Mitigated Negative Declaration for the proposed construction of a service station and convenience store with lease space for a future tenant on approximately 1.02 acres. The City of Tulare will act as the Lead Agency for this project pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines.

3.1 PROJECT PURPOSE

The purpose of this environmental document is to implement the California Environmental Quality Act (CEQA). Section 15002(a) of the CEQA Guidelines describes the basic purposes of CEQA as follows.

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

This Initial Study of environmental impacts has been prepared to conform to the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.).

According to Section 15070(a), a Negative Declaration is appropriate if it is determined that: (1) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment.

INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

1. **Project Title:** South 'K' Street Service Station

2. **Lead Agency:** City of Tulare
   411 E. Kern Avenue
   Tulare, Ca 93274
   (559) 684-4217 FAX 685-2339

3. **Applicant:** TAE Inc., on behalf of Darshan Singh
   P.O. Box 1177
   Tulare, CA 93275

4. **Contact Person:** Steven Sopp
   City of Tulare
   411 East Kern Avenue
   Tulare, CA 93274
   (559) 684-4223

5. **Project Location:**
   The project site is located in Tulare County in the northwestern area of the City of Tulare, on the southeast corner of West Street and Prosperity Avenue. The project area is composed of one parcel (APN 169-360-041) totaling approximately 7.50 acres.

6. **General Plan Designation:**
   Tulare General Plan designates the site as Community Commercial.

7. **Zoning Designation:**
   Tulare Zoning Map designates the site as C-3 (Retail Commercial).

8. **Surrounding Land Uses and Settings:**

North	R-1-8	Single-family homes
South	R-1-6	Single-family homes
East	R-M-2	Single-family homes
West	C-3 & R-1-6	Service Station w/ convenience store and single-family homes

9. **Project Description:**
   The proposed project involves the construction of a service station and convenience store with lease space for a future tenant. The service station will include one fuel canopy with eight pumps (sixteen fueling stations) for vehicle fueling. A 4,200 sq. ft. commercial building will be constructed and will include 3,319 sq. ft. for convenience store space associated with the service station. The commercial building will also

include an approximately 881 sq. ft future tenant lease space.

10. **Parking and access:**
    Access to the site will be through two new drive approaches. Two drive approaches will be established, one off of Prosperity Avenue and the other providing access from West Street. New parking spaces would be provided to serve the convenience store and future lease spaces. A total of 22 spaces would be provided to serve the project. The number of parking spaces provided meets the minimum number required of the proposed project by the City of Tulare zoning ordinance.

11. **Landscaping and Design**:
    All landscaping and design components will comply with the City of Tulare Code of Ordinances §10.52 for Retail Commercial Districts. The landscape and design plans will be required at time the project submits for building permit on the project and will be subject to the City's Water Efficient Landscape Ordinance (WELO).

12. **Utilities and Electrical Services:**
    All City services (water, sewer, law enforcement, fire protection etc.) will be extended to the proposed project area upon development. Sewer lines currently run along Prosperity Avenue and West Street, and a water supply line runs along West Street. Storm water generated on the site will be drained to the existing stormwater drainage system servicing this area.

13. **Project Components:**
    The discretionary approvals required from the City of Tulare for the proposed project include:

    - Conditional Use Permit

Acronyms

AFY	Acre Feet Per Year
AIA	Air Impact Assessment
APN	Assessor's Parcel Number
BMP	Best Management Practices
CAA	Clean Air Act
CALEEMOD	California Emission Estimator Model
CARB	California Air Resources Board
CCR	California Code of Regulation
CDFW	California Department of Fish and Wildlife
CE	California Endangered
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CO	Carbon Monoxide
CSC	California Species of Special Concern
CT	California Threatened
CWA	California Water Act
DHS	Department of Health Services
DPM	Diesel Particulate Matter
DWR	Department of Water Resources
EHD	Environmental Health Division
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FE	Federally Endangered
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FMBTA	Federal Migratory Bird Treaty Act
FMMP	Farmland Mapping and Monitoring Program
GHG	Greenhouse Gases
GPD	Gallons Per Day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HMBP	Hazardous Materials Business Plan
ISMND	Initial Study Mitigated Negative Declaration
ISR	Indirect Source Review
LOS	Level of Service
MKJPA	Mid-Kaweah Joint Powers Authority
MLD	Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration

MT	Metric Tons
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NDIR	Non-Dispersive Infrared
NO_x	Nitrogen Oxides
NOD	Notice of Determination
NPDES	National Pollutant Discharge Elimination System
PM	Particulate Matter
RWQCB	Regional Water Quality Control Board
SGMA	Sustainable Groundwater Management Act
SJVAPCD	San Joaquin Valley Air Pollution Control District
SPAL	Small Project Analysis Level
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
TCHSA	Tulare County Health and Human Services Agency
TID	Tulare Irrigation District
UBSC	Uniform Building and Safety Code
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
VOC	Volatile Organic Compound
WELO	Water Efficient Landscape Ordinance
WWTP	Wastewater Treatment Plant
WWTT	Wastewater Treatment Train

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Figure 3-1: Vicinity Map

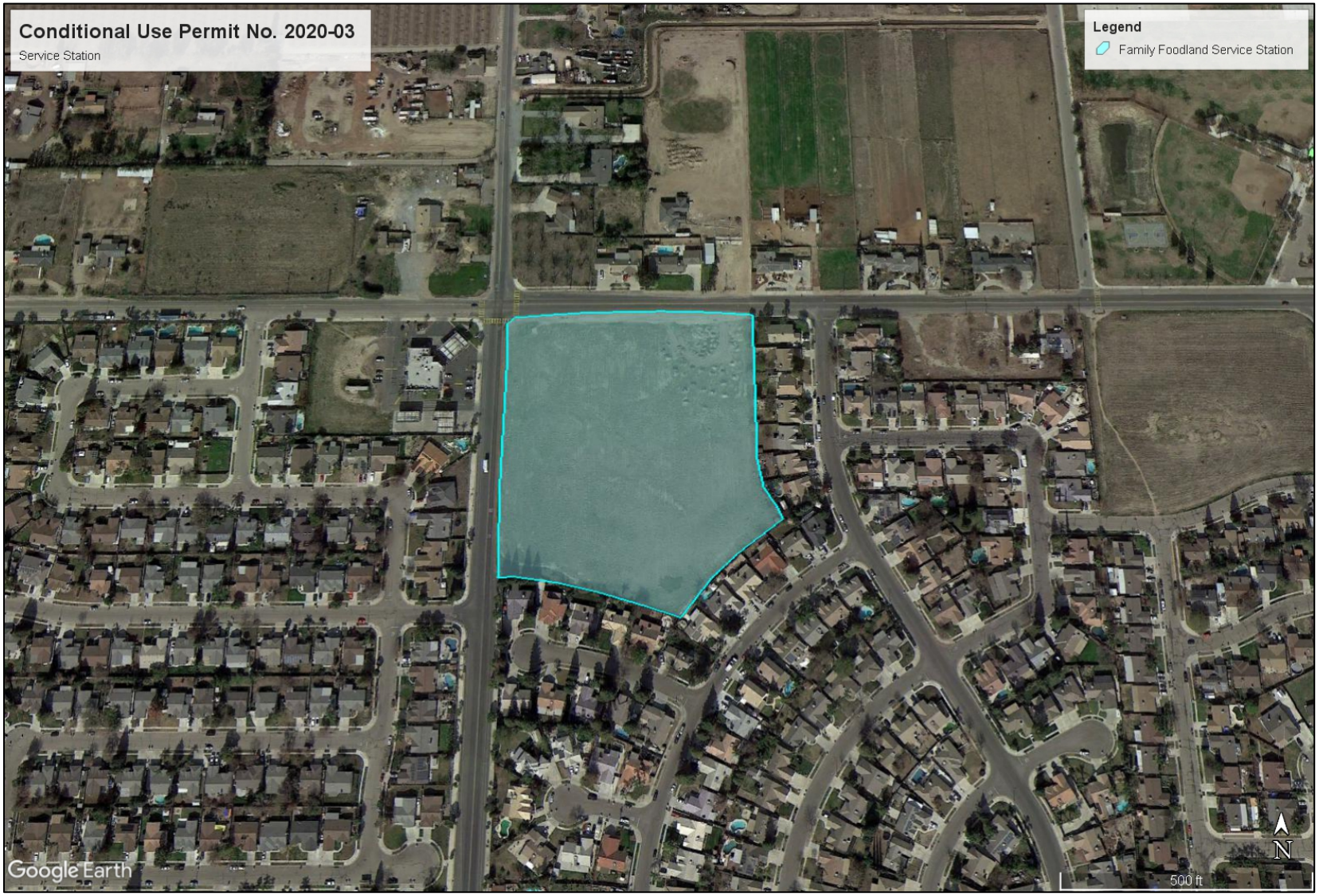


Figure 3-2: Site Plan

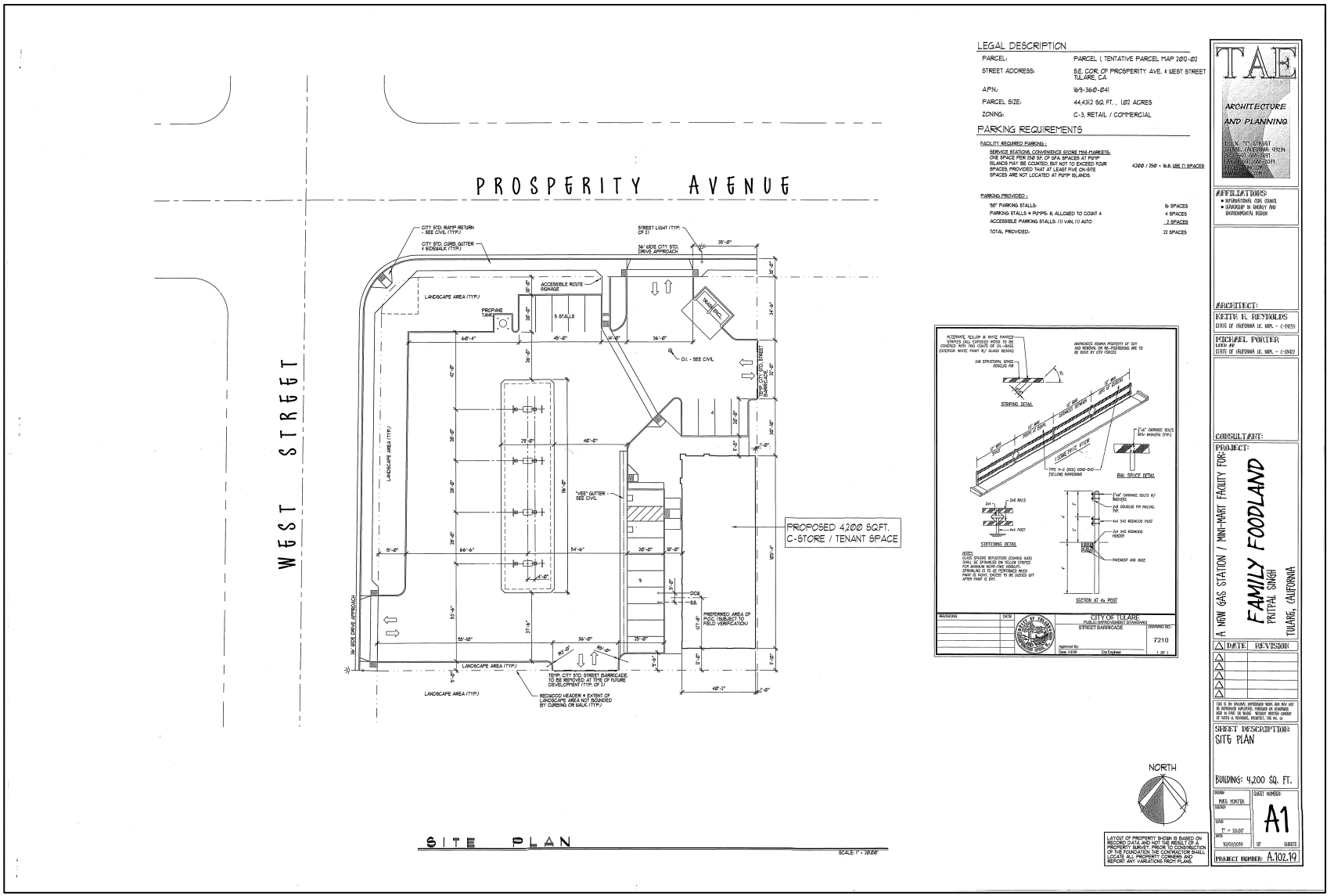


Figure 3-3: Floor Plan

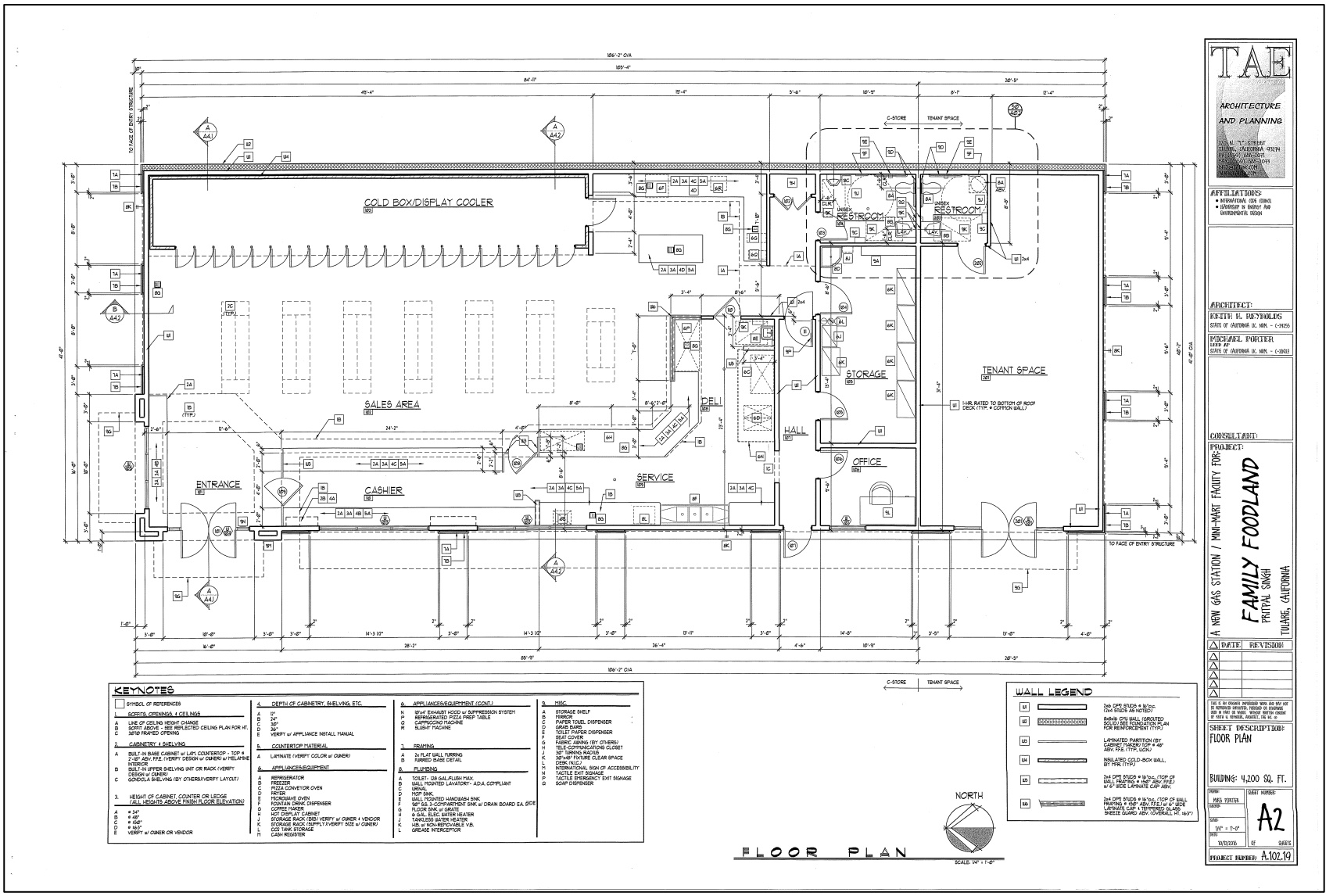
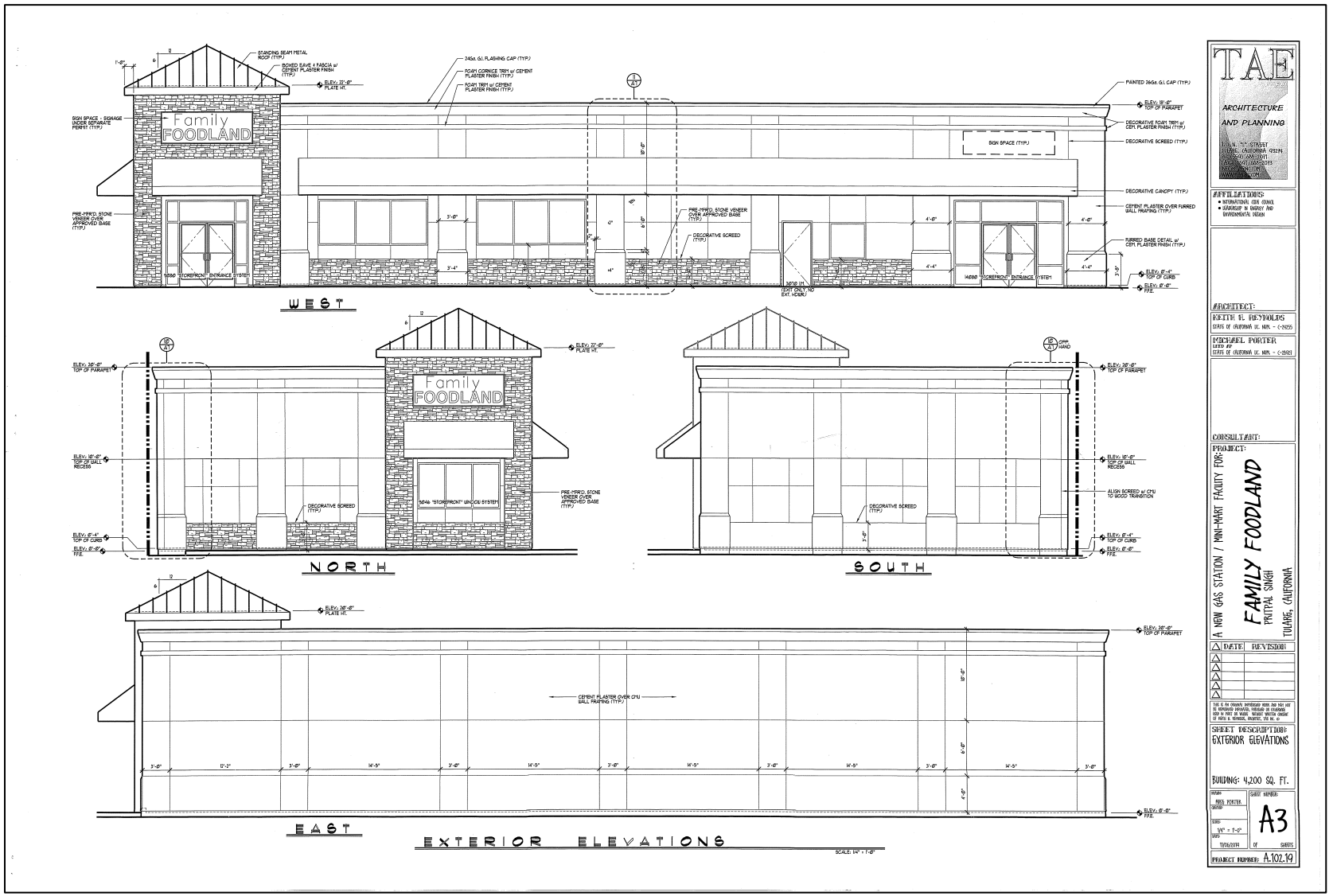


Figure 3-4: Elevation Plan



3.2 EVALUATION OF ENVIRONMENTAL IMPACTS

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

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

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

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

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

    a) Earlier Analysis Used. Identify and state where they are available for review.
    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated." Describe and mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

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

3.3 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

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

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION WILL BE PREPARED.

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

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

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

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

_____ _____

SIGNATURE DATE

Mario A. Anaya, Principal Planner City of Tulare

PRINTED NAME Agency

3.4 ENVIRONMENTAL ANALYSIS

The following section provides an evaluation of the impact categories and questions contained in the checklist and identify mitigation measures, if applicable.

I. AESTHETICS

Except as provided in Public Resources Code Section 21099 would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within state scenic highway?	☐	☐	☐	☑
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from 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?	☐	☐	☑	☐

Discussion:

a) **No Impact:** A scenic vista is defined as a viewpoint that provides expansive views of highly valued landscape for the benefit of the general public. The Sierra Nevada Mountains in the background as well as the flat rural agricultural landscape with Valley Oak trees rising from the Valley floor are the only natural and visual resources in the project area. However, these vistas are found on the edges of the city limits and along the city's east-west transportation corridors. The project would not obstruct vistas on east-west transportation corridors and scenic vistas from the project site are obstructed by trees and telephone poles associated with existing residential development to the east. In addition, due to the distance between the project site and the Sierra Nevada Mountains, in conjunction with the poor air quality of the valley, the Sierra Nevada Mountains can rarely be seen from this location. The project site is zoned for commercial land uses and is surrounded by commercial and residential land uses, as well as vacant land. The proposed development would be compatible with the City's General Plan and Zoning Ordinance for development. For all of these reasons, this project would have *no impact* on scenic vistas.

b) **No Impact:** The site does not contain any rock outcropping or historic buildings. After review of the state route "scenic highways" in Tulare County, it was determined that there are no highways designated by State or local agencies as "Scenic highways" near the project site. Therefore, the proposed project would have *no impact* to any scenic resources.

c) **No Impact:** The proposed project site is surrounded by residential subdivisions and an existing service station and convenience store across the street, therefore the City does not anticipate that the development of the proposed project will create a visually degraded character or quality to the project site or to the properties near and around the project site. Additionally, the proposed development will be required to comply with the site plan review conditions and design standards required by the General Plan and the City's adopted design guidelines and zoning regulations which require setbacks, landscaping and designs to limit impact to neighboring properties. Therefore, the proposed project would have *no impact* on the visual character of the area.

d) **Less Than Significant Impact:** The proposed project will include lighting required of a commercial use and standard for a service station and convenience store. The proposed project will be required to meet the development standards of the C-3 (Retail Commercial) zone district and commercial design guidelines of the City of Tulare zoning ordinance. These provisions require all light fixtures to be shielded to confine the spread of light within the boundaries of the site, particularly where incompatible or sensitive uses are located in close proximity, such as the surrounding residential properties. All signage will be required to adhere to standards established within the City of Tulare zoning ordinance which prohibits any sign that flashes, blinks, moves, changes color, appears to change color, changes intensity or contains any part or attachment which does the same. The proposed project would not create a new source of light or glare so substantial that it would affect day or nighttime views in the area. Therefore, the proposed project would have a *less than significant impact* with regard to existing day or nighttime views in the area of the proposed project.

Mitigation Measures: None required.

II. AGRICULTURE AND FORESTRY RESOURCES:

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California air Resources Board. - -Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned timberland Production (as defined by Government Code section 51104(g)?	☐	☐	☐	☑
d) Result in the loss of forestland or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forestland to non-forest use?	☐	☐	☐	☑

Discussion:

a) **No Impact:** The proposed project site is designated for commercial development and is only considered Farmland of Local Importance by the State Farmland Mapping and Monitoring Program (FMMP). Furthermore the proposed project site consists of vacant land that has not been used for agriculture for several years. The proposed project would not result in the conversion of any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance or land under Williamson Act contracts. Therefore, the project has *no impacts*.

b) **No Impact:** The project site is not under Williamson Act contract and therefore would create *no impacts.*

c) **No Impact:** The project site is not zoned for forest land or timberland and there is no forest land or timberland zone change proposed for the site, therefore *no impacts* would occur.

d) **No Impact:** No conversion of forestland, as defined under Public Resource Code or General Code, will occur as a result of the project and would create *no impacts*.

e) **No Impact:** The project site is located on a parcel zoned for retail commercial land uses. The project is surrounded by other retail commercial and residential zoned properties which are fully within the incorporated boundary of the City of Tulare. The proposed project is not proposing to convert any agriculturally zoned land to another use and would not require or result in conversion of farmland to non-agricultural use or forested to non-forest use. For these reasons, the project has *no impacts*.

Mitigation Measures: None required.

III. AIR QUALITY

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

CURRENT POLICIES AND REGULATIONS

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

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

The state and federal standards for the criteria pollutants are presented in Table 1. These standards are designed to protect public health and welfare. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soils, water, visibility,

materials, vegetation and other aspects of general welfare. The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005, and the annual PM_{10} standard on September 21, 2006, when a new $PM_{2.5}$ 24-hour standard was established.

Air quality is described in terms of emissions rate and concentration of emissions. An emissions rate is the amount of pollutant released into the atmosphere by a given source over a specified time period. Emissions rates are generally expressed in units such as pounds per hour (1lbs/hr) or tons per year. Concentrations of emissions, on the other hand, represent the amount of pollutant in a given space at any time. Concentration is usually expressed in units such as micrograms per cubic meter, kilograms per metric ton, or parts per million. There are 4 primary sources of air pollution within the SJVAB: motor vehicles, stationary sources, agricultural activities, and construction activities.

Criteria air pollutants are classified in each air basin, county, or, in some cases, within a specific urbanized area. The classification is determined by comparing actual monitoring data with state and federal standards. If a pollutant concentration is lower than the standard, the pollutant is classified as “attainment” in that area. If an area exceeds the standard, the pollutant is classified as “non-attainment.” If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified.”

Air quality in the vicinity of the proposed project is regulated by several jurisdictions including the State and Federal Environmental Protection Agency (EPA), California Air Resources Board (CARB), and the San Joaquin Valley Air Pollution Control District (SJVAPCD). Each jurisdiction develops rules, regulations, policies, and/or goals to attain the directives imposed upon them through Federal and State legislation.

The Clean Air Act (CAA) of 1990 requires emission controls on factories, businesses, and automobiles by:

- Lowering the limits on hydrochloric acid and nitrogen oxides (NO_X) emissions, requiring the increased use of alternative-fuel cars, on-board canisters to capture vapors during refueling, and extending emission-control warranties.

- Reducing airborne toxins by requiring factories to install “maximum achievable control technology” and installing urban pollution control programs.

- Reducing Acid rain production by cutting sulfur dioxide emissions for coal-burning power plants.

Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (0_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet 8 Hour Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	20 µg/m^3		-		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	-	Gravimetric or Beta Attenuation	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	12 µg/m^3		12 µg/m^3		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		-		
Nitrogen Dioxide (NO_2)[8]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	-	Gas Phase Chemilumines-cence
	Arithmetic Mean	0.030 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	-	Ultraviolet Fluorescence; Spectrophoto-metry (Pararosaniline Method)
	3 Hour	-		-	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3		0.14 ppm (for certain areas)[9]	-	

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
	Annual Arithmetic Mean	-		0.030 ppm (for certain areas)[9]	-	
Lead[10,11]	30 Day Average	1.5 µg/m^3	Atomic Absorption	-	-	High Volume Sampler and Atomic Absorption
	Calendar Quarter	-		1.5 µg/m^3 (for certain areas)[11]	Same as Primary Standard	
	Rolling 3-month Average	-		0.15 µg/m^3		
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standard		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Flourescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3	Gas Chromatography			

Notes:

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the U.S. EPA.
8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.
9. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm. 10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants. 11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved. 12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.						

In July of 1997, the EPA adopted a PM2.5 standard in recognition of increased concern over particulate matter 2.5 microns in diameter (PM2.5). Ending several years of litigation, EPA's PM2.5 regulations were upheld by the U.S. Supreme Court on February 27, 2001. According to information provided by the EPA, designations for the new PM2.5 standards began in the year 2002 with attainment plans submitted by 2005 for regions that violate the standard. In October 2006, EPA revised the PM2.5 standard to 35 µg/m3. The most recent revision to the PM2.5 standard was in 2012 when the EPA revised the annual PM2.5 standard to 12 µg/m3. The San Joaquin Valley was classified as a moderate nonattainment area for the 2012 PM2.5 standard effective April 15, 2015.

The following rules and regulations have been adopted by the Air District to reduce PM2.5 emissions throughout the San Joaquin Valley and verification by the City of compliance with these rules and regulations will be required, as applicable, to construct and operation of the project.

- Rule 4002 – National Emission Standards for Hazardous Air Pollutants. There are no existing structures located on the proposed site.

- Rule 4102 – Nuisance
  This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that the project or construction of the project creates a public nuisance, it could be in violation and be subject to district enforcement action.

- Rule 4601 – Architectural coatings. The purpose of this rule is to limit volatile organic compound (VOC) emissions from architectural coatings. Emission are reduced by

limits on VOC content and providing requirements on coatings storage, cleanup, and labeling

- Rule 4641- Cutback, slow cure, and emulsified asphalt, paving and maintenance operations. The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641.

- Rule 9510 – Indirect Source Review (ISR) This rule reduces the impact PM10 and NOX emissions from growth on the SJVB. This rule places application and emission reduction requirements on applicable development projects in order to reduce emissions through onsite mitigation, offsite SJVAPCD-administered projects, or a combination of the two. This project will submit an Air Impact Assessment (AIA) application in accordance with Rule 9510's requirements.

- Compliance with SJVAPCD Rule 9510 (ISR) reduces the emissions impact of the project through incorporation of onsite measures as well as payment of an offsite fee that funds emissions reduction projects in the SJVAB. A number of "optional"/Above and Beyond" mitigation measures included in this project can be created as Rule 9510 – onsite mitigation measures.

- Regulation VIII – fugitive PM10 Prohibitions Rules 8011 – 8081 are designed to reduce PM10 emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track-out etc. Among the Regulation VIII Rules applicable to the project are the following:

- Rule 8011 – Fugitive Dust Administrative Requirements for Control of Fine Particulate Matter (PM10)

- Rule 8021 – Fugitive Dust Requirements for Control of fine Particulate Matter (PM10) from Construction, Excavation, and Extraction Activities

- Rule 8030 – Fugitive dust Requirements for Control of Fine Particulate Matter (PM10) from Handling and Storage of Fine Bulk Materials.

- Rule 8060 – Fugitive dust Requirements for Control of fine Particulate Matter (PM10) from Paved and Unpaved Roads.

Discussion:

a) **Less Than Significant Impact with Mitigation Incorporated:** The proposed project is located within the boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD) and would result in air pollutant emissions that are regulated by the air district during both its construction and operational phases. The SJVAPCD is responsible for bringing air quality in Tulare County into compliance with federal and state air quality standards. The air district has Particulate Matter (PM) plans, Ozone Plans, and Carbon Monoxide Plans that serve as the clean air plan for the basin. Together, these plans quantify the required emission reductions to meet federal and state air quality standards and provide strategies to meet these standards.

Construction Phase. Project construction would generate pollutant emissions from the following construction activities: site preparation, grading, building construction, application of architectural coatings, and paving. The construction related emissions from these activities were calculated using the California Emission Estimator Model (CalEEMod). The full CalEEMod Modeling Output Sheets can be found in Appendix A. As shown in Table 2 below, project construction related emissions do not exceed the thresholds established by the SJVAPCD.

Table 2: Estimated Project Construction Emissions in Tons Per Year

	CO	ROG	SO_x	NO_x	PM10	PM2.5
Emissions Generated from Project Construction	0.5568	0.0889	0.009	0.6097	0.0362	0.0319
SJVAPCD Air Quality Thresholds of Significance	100	10	27	10	15	15
*Threshold established by SJVAPCD for SO_x, however emissions are reported as SO2 by CalEEMod.						

Source: SJVAPCD, CalEEMod Analysis (Appendix A)

Operation Phase. Implementation of the proposed project would result in long-term emissions associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, as well as mobile emissions. Operational emissions from these factors were calculated using CalEEMod. The Full CalEEMod Modeling Output Sheets can be found in Appendix A. As shown in Table 3 below, annual emissions of NOx exceed the SJVAPCD thresholds of significance, mostly due to mobile emissions associated with operation of the project.

Table 3: Estimated Project Operational Emissions in Tons Per Year

	CO	ROG	SO_x	NO_x	PM10	PM2.5
Emissions Generated from Project Operations	6.0054	1.0449	0.0226	10.3411	0.8028	0.2288
SJVAPCD Air Quality Thresholds of Significance	100	10	27	10	15	15
*Threshold established by SJVAPCD for SO_x, however emissions are reported as SO2 by CalEEMod.						

Source: SJVAPCD, CalEEMod Analysis (Appendix A)

However, the proposed project would be subject to SJVAPCD Rule 9510, since it is over 2,000 square feet of commercial space. Rule 9510 requires a reduction in the growth of operational NOx emissions by 33.3% when compared to the unmitigated project. These reductions are accomplished by the incorporation of mitigation measures into projects and/or by the payment of an Indirect Source Review (ISR) fee for any required reductions that have not been accomplished through project mitigation commitments. The current fees are $9,350 per ton of NOx. The actual calculations will be accomplished by the SJVAPCD and Project applicant under Rule 9510. Even though the project would include design measures such as a bike rack, planting of new trees, construction of sidewalks and bicycle lanes on Prosperity Avenue and West Street, the project is just over the threshold of operational NOx emissions. Therefore, the project applicant will be responsible to pay their proportional ISR fee based on the SJVAPCD calculation. Therefore, impacts would be *less than significant* with *implementation* of *Mitigation Measure AQ-1.*

Mitigation Measure AQ-1: The proposed project is subject to Rule 9510, as required by the SJVAPCD. The project applicant shall pay the Indirect Source Review Rule fee for any required reductions that have not been accomplished through project mitigation commitments, prior to issuance of building permits. The fee calculations will be conducted by the SJVAPCD.

b) **Less Than Significant Impact With Mitigation Incorporated:** The SJVAPCD accounts for cumulative impacts to air quality in Section 1.8 “Thresholds of Significance – Cumulative Impacts” in its 2015 Guide for Assessing and Mitigating Air Quality Impacts. The SJVAPCD considered basin-wide cumulative impacts to air quality when developing its significance thresholds. Construction emissions are relatively insignificant and can be

mitigated with implementation of air district control measures. During project operation, annual emissions of NOx slightly exceed SJVAPCD thresholds, however with implementation of Mitigation Measure AQ-1, impacts would be mitigated to less than significant. Therefore, impacts regarding cumulative emissions would be *less than significant with mitigation incorporated*.

c) **Less Than Significant Impact With Mitigation Incorporated:** During construction, pollution concentrations will temporarily increase, however construction activities will remain below the thresholds of significance established by the San Joaquin Valley Unified Air Pollution Control District. During operations, annual NOx emissions resulting from the project would slightly exceed significance thresholds established by SJVAPCD, however with implementation of Mitigation Measure AQ-1, impacts would be mitigated to *less than significant with mitigation incorporated*.

d) **Less Than Significant Impact:** The project would create temporary typical construction odors during the construction phase. Since any odors from project construction would be temporary and common to any construction activity, and the project would not create objectionable odors affecting a substantial number of people during facility operations, impacts are *less than significant*.

IV. BIOLOGICAL RESOURCES

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

The California Natural Diversity Database (CNDDB) QuickView Tool was used to evaluate special status species occurrences in the Tulare USGS 7.5 minute quadrangle where the project is located. Five special status animal species and two special status plant species were identified within this search area. These species and their protection status are listed in the tables below:

Table 4: Special Status Animal Species

Common Name	Scientific Name	Status
Swainson's hawk	Buteo swainsoni	CT
burrowing owl	Athene cunicularia	CSC
An andrenid bee	Andrena macswaini	-
San Joaquin kit fox	Vulpes macrotis mutica	FE, CT
Tipton kangaroo rat	Dipodomys nitratoides nitratoides	FE, CE

Status Codes

FE	Federally Endangered	CE	California Endangered
		CT	California Threatened
		CSC	California Species of Special Concern

Source: CNDDB Quickview Tool

Table 5: Special Status Plant Species

Common Name	Scientific Name	Status
San Joaquin adobe sunburst	Pseudobahia peirsonii	FT, CE, 1B
California jewelflower	Caulanthus californicus	FE, CE, 1B

Status Codes

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened		
1B	Plants Rare, Threatened, or Endangered in California and Elsewhere		

Source: CNDDB Quickview Tool

Federal Endangered Species Act (FESA**)**: defines an *endangered species* as "any species or subspecies that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species or subspecies that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712): FMBTA prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States 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 birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Although the United States Fish & Wildlife Service (USFWS) and its parent administration, the U.S. Department of the Interior, have traditionally interpreted the FMBTA as prohibiting incidental as well as intentional "take" of birds, a January 2018 legal opinion issued by the

Department of the Interior now states that incidental take of migratory birds while engaging in otherwise lawful activities is permissible under the FMBTA. However, California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities.

Birds of Prey (CA Fish and Game Code Section 3503.5): Birds of prey are protected in California under provisions of the 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.

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

California Endangered Species Act (CESA): prohibits the take of any state-listed threatened and endangered species. CESA defines *take* as "any action or attempt to hunt, pursue, catch, capture, or kill any listed species." If the proposed project results in a take of a listed species, a permit pursuant to Section 2080 of CESA is required from the California Department of Fish & Wildlife (CDFW).

Discussion:

a) **Less Than Significant Impact:** A search of the CNDDB QuickView Tool identified five special status animal species and two special status plant species have been identified within the Tulare USGS 7.5-minute quadrangle where the project site is located. However, the proposed project site is surrounded by other commercial and residential uses. There are no trees, agricultural land, or substantive vegetation on-site and none will be removed as a result of the project. The proposed project site is in-fill development within a largely developed area within the City of Tulare city limits. There are no indications of wildlife on the site, and no trees, agricultural or native vegetation providing habitat to the identified special status species in the Tulare 7.5-minute quadrangle. As such, it is unlikely that any special status species occur on the site, and the proposed project would have *a less than significant impact* on sensitive or special status species.

b) **No Impact:** As identified in the City's General Plan EIR, the project site in not located within or adjacent to an identified sensitive riparian habitat or other natural community. Therefore, the proposed project would have *no impact* to riparian habitat.

c) **Less Than Significant Impact:** As identified in the City's General Plan EIR, there are no known wetlands located on or adjacent to the project site. A review of the U.S. Fish and Wildlife Service National Wetlands Inventory maps show an intermittent riverine water body, known as Sand Ditch, located about 400 feet northwest of the project site. This appears to be an old irrigation ditch and it would not be affected by the proposed project. The proposed project construction would comply with required measures to minimize runoff and avoid impacts on surrounding surface water bodies. The project distance and gradient from Sand Ditch is such that the project would have *less than significant impacts* on this or other water bodies. Therefore, the project will have *less than significant impacts* on federally protected wetlands as defined in Section 404 of the Clean Water Act.

d) **No Impact:** As identified in the City's General Plan EIR, there are no identified migratory corridors on or near the site. Therefore, the proposed project would have *no impacts*.

e) **No Impact:** The City of Tulare has an oak tree preservation policy according to Tulare Municipal Code 8.52.100 (Preservation of Heritage Trees). There are no oak trees on the project site, therefore there would be *no impacts*.

f) **No Impact:** There are no local or regional habitat conservation plans for the area and *no impacts* would occur.

Mitigation Measures: None required.

V. CULTURAL RESOURCES

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

Discussion:

a) **Less Than Significant Impact with Mitigation Incorporated:** According to the City's Historic Resources Inventory and the General Plan EIR, there are no known historical resources located within the project area and the soils in the project area have been previously disturbed. There would be no excavation in undisturbed soils or in areas with known historical resources. However, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measure CUL-1 would ensure that impacts due to discovery of cultural resources during excavation would be *less than significant with mitigation incorporated*.

Mitigation Measure CUL-1: If cultural resources or bones are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of Interior's Professional Qualifications Standards for archaeology (NPS 1983) shall be contacted immediately to evaluate the find. If the discovery proves to be significant, additional work such as data recovery, excavation, and Native American consultation may be warranted until the qualified archaeologist has determined that ground-disturbing activities may resume in the area of the find, or in alternate locations on the site, as approved by the project's qualified archaeologist, in consultation with any required federal, state, local, or Tribal authorities.

b) **Less Than Significant Impact with Mitigation Incorporated:** There are no known archaeological resources located within the project area and no excavation proposed in undisturbed soils. However, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measure CUL-1 would ensure that impacts due to discovery of cultural resources during excavation would be *less than significant with mitigation incorporated*.

c) **Less Than Significant Impact with Mitigation Incorporated:** There are no known human remains buried in the project vicinity and the soils in the project area have been previously disturbed. No excavation in undisturbed soils is proposed, however if human remains are unearthed during development, there is a potential for a significant impact. As such, implementation of Mitigation Measure CUL-2 would ensure that impacts remain *less than significant with mitigation incorporated*.

Mitigation Measure CUL-2: The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

VI. ENERGY

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

a) **Less Than Significant Impact:** The proposed project would require the use of electricity, natural gas, and use of transportation fuel during the construction phase. The demand for these resources would be supplied from existing services within the proposed project area. The overall construction activities would require minimal consumption of these resources as these activities would be temporary and conclude once the proposed project is complete.

The proposed project consists of a service station that includes fuel pumps, a convenience store, and retail commercial space. Operation of the Project would result in an increase in energy consumption for multiple purposes including, but not limited to, inside and outside lighting, building heating and cooling, and commercial equipment.

The Project includes several facilities that will attract motorists; however, it is not expected to result in an increase in vehicle trips on a regional basis, based on the premise that the proposed Project is being constructed at a location that will capitalize upon existing vehicular traffic traveling on West Street, Prosperity Avenue, and nearby along SR 99. The infill nature of the project and ability to capture some of these existing automobile and truck trips in this area of the City will minimize fuel consumption that would otherwise be required if the development were located further from its planned location.

As such, the proposed Project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use in the region. Therefore, impacts would be *less than significant*.

b) **No Impact:** The proposed project will be required to abide by the requirements of state and local plans for renewable energy or energy efficiency, including Title 24 2013 standards. There would be *no impact*.

VII. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑	☐
d) Be located on expansive soil, as defined in Table 18- 1-B of the Uniform Building Code (1994), creating substantial 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 waste water?	☐	☐	☐	☑
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐

Discussion:

a-i and ii) **Less Than Significant Impact:** According to the state Regulatory Earthquake maps, no active faults underlay the project site, nor are any active faults located in the surrounding project vicinity. The proposed project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone. Although the project is located in an area of low seismic activity, the project could be affected by ground shaking from faults

located a substantial distance away. The potential for strong seismic ground shaking on the project site is not a significant environmental concern due to the infrequent seismic activity of the area and distance (approximately 61 miles) to the nearest fault. Furthermore, the proposed project would not expose people to seismic ground shaking beyond the conditions that currently exist throughout the project area. The project would be constructed to the standards of the most recent seismic Uniform Building and Safety Code (UBSC). Compliance with these design standards will ensure potential impacts related to strong seismic ground shaking would be *less than significant.*

a-iii) **Less Than Significant Impact:** Liquefaction is a phenomenon whereby unconsolidated and/or near-saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil. The 2017 Tulare Multi-Jurisdictional Local Hazard Mitigation Plan identifies the risk of liquefaction within the county as low because the soil types in the area are too coarse or too high in clay content to be suitable for liquefaction. According to the state soils maps, the project site consists mostly of Colpien loam and does not contain soils suitable for liquefaction. The impact would be *less than significant*.

a-iv) **No Impact:** The project site is generally flat and previously disturbed. There are no hill slopes in the area and no potential for landslides. No geologic landforms exist on or near the site that would result in a landslide event. There would be *no impact.*

b) **Less Than Significant Impact:** Because the project site is generally flat, minimal grading would be required to accommodate the construction of the proposed service station and convenience store. The project is within an established urban area and does not include any project features that would result in soil erosion or loss of topsoil. While construction-related activities can increase the probability for erosion to occur, construction activities will be subject to best management practices (BMPs) required by a stormwater pollution prevention plan (SWPPP), which are required as part of construction projects to prevent impacts related to erosion and potential runoff of pollutants and debris as a result of construction activities such as grading and excavation. After construction, the project site would include an increase in impermeable surfaces, however stormwater runoff would be designed as part of the project to be carried into the City's storm drain inlets and stormwater infrastructure system. Therefore, for these reasons, the impacts of the project on soil erosion would be *less than significant*.

c) **Less Than Significant Impact:** Substantial grade change would not occur in the topography to the point where the project would expose people or structures to potential adverse effects on, or offsite, such as landslides, lateral spreading, subsidence, liquefaction or collapse. The City of Tulare's sandy soils are considered to be either too coarse or too clayey to be easily susceptible to liquefaction. Moreover, Tulare and its surrounding area would only very infrequently experience the sort of strong ground-

shaking typically associated with liquefaction. For these reasons, the California Geological Survey has not conducted studies or mapping of liquefaction susceptibility in the Tulare area and as such, any impacts would be *less than significant*.

d) **Less Than Significant Impact:** No subsidence-prone soils exist at the project site and this project would not intensify shrink-swell behavior, promote soil instability or expose people or property to risks associated with expansive soils. Expansive soils contain larger amounts of clay than the project's soils, which would absorb substantial water and cause the soil to increase in volume. Conversely, the soils associated with the proposed project area are more granular, well-draining, and therefore have a more limited ability to absorb water or exhibit expansive behavior. Nevertheless, the project would be designed to comply with applicable building codes and structural improvement requirements to withstand the potential effects of expansive soils. For these reasons, the impact is considered *less than significant*.

e) **No Impact:** This project would connect to City water and sewer. Therefore, the proposed project would not require the use of an alternative sewer system, nor the use of a septic tank and there would be *no impact*.

f) **Less Than Significant Impact with Mitigation:** There are no known paleontological resources located within the project area. However, implementation of Mitigation Measure GEO-1 will ensure that any impacts resulting from project implementation remain *less than significant with mitigation incorporated*.

Mitigation Measure GEO-1: If fossils are encountered during ground-disturbing activities, work in the immediate area must halt and a qualified paleontologist shall be contacted immediately to evaluate the find. If the discovery proves to be significant, additional work such as data recovery and excavation, may be warranted until the qualified paleontologist has determined that ground-disturbing activities may resume in the area of the find or in alternate locations on the site, as approved by the project's qualified paleontologist, in consultation with any required federal, state, or local authorities.

VIII. GREENHOUSE GAS EMISSIONS

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

Climate Change - (also referred to as Global Climate change) is sometimes used to refer to all forms of climatic inconsistency, but because the earth's climate is never static, the term is more properly used to imply a significant change from one climatic condition to another. In some cases, climate change has been used synonymously with the term "global warming." Scientists however, tend to use the term in the wider sense to address uneven patterns of predicted global warming and cooling and include natural changes in climate.

Global Warming - refers to an increase in the near surface temperature of the earth. Global warming has occurred in the distant past as the result of natural influences, but the term is commonly used to refer to the warming predicted to occur because of increased emissions of greenhouse gases. Scientists generally agree that the earth's surface has warmed by about 1^{o} F in the past 140 years, but warming is not predicted evenly around the globe. Due to predicted changes in the ocean currents, some places that are currently moderated by warm ocean currents are predicted to fall into deep freeze as the pattern changes.

Greenhouse Effect - is the warming of the earth's atmosphere attributed to a buildup of carbon dioxide (CO_2) or other gases; some scientists think that this build-up allows the sun's rays to heat the earth, while making the infrared radiation atmosphere opaque to infrared radiation, thereby preventing a counterbalancing loss of heat.

Greenhouse Gases - are those that absorb infrared radiation in the atmosphere. GHG include water vapor, CO_2, methane, nitrous oxide (N_2O), halogenated fluorocarbons, ozone, per fluorinated carbons PFCs), and hydrofluorocarbons.

Discussion:

a) **<u>Less Than Significant Impact:</u>** Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate

change can be attributed to every nation, region, and city, and virtually every individual on Earth. A Project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. Implementation of the proposed Project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO2 and other GHG pollutants, such as methane (CH4) and nitrous oxide (N_2O), from mobile sources and utility usage.

The proposed Project's short-term construction-related and long-term operational GHG emissions were estimated using the California Emission Estimator Model (CalEEMod)™ (v.2016.3.2). See Appendix A of this IS-MND for complete CalEEMod inputs and results. CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., $MTCO_2e$), based on the global warming potential of the individual pollutants.

Short-Term Construction GHG Emissions: Estimated increases in GHG emissions associated with construction of the proposed Project are summarized in Table 6.

Table 6: Estimated Project Construction GHG Emissions (Unmitigated Metric Tons Per Year)

	Bio-CO_2	**NBio-CO_2**	**Total CO_2**	**CH_4**	**N_2O**	**CO_2e**
2021	0.0000	78.9337	78.9337	0.0242	0.0000	79.5382
*Threshold established by SJVAPCD for SO_x, however emissions are reported as SO2 by CalEEMod.						

Source: CalEEMod (v.2016.3.2)

As presented in the table, the total short-term construction emissions of GHG associated with the Project are estimated to be approximately 79.5 metric tons (MT) of CO2e. These construction GHG emissions are a one-time release and are comparatively much lower than emissions associated with operational phases of a Project. Cumulatively, these construction emissions would not generate a significant contribution to global climate change as they will not continue to occur into the future.

Long-Term Operational GHG Emissions: Implementation of the proposed project would result in long-term greenhouse gas emissions associated with area sources, such as natural gas consumption, landscaping, applications of architectural coatings, and consumer products, as well as mobile emissions.

The U.S. Environmental Protection Agency published a rule for the mandatory reporting of greenhouse gases (GHG) from sources that in general emit 25,000 MT or more of CO_2e per year. Project GHG emissions were calculated using CalEEMod (emissions output results found in Appendix A) based on 0.10 acres developed with a convenience market and gas service station. The project is estimated to produce 2,136.24 MT of $C0_2e$ per year, which is well below the 25,000 MT threshold for greenhouse gas emissions.

Because the GHG emissions related to construction and operation of the proposed project are below accepted thresholds of significance the impact is considered *less than significant*.

b) **No Impact:** The proposed project will comply with all Federal, State, and Local rules pertaining to the regulation of greenhouse gas emissions. In addition, the project will implement Best Performance Standards developed by the SJVAPCD. Projects implementing Best Performance Standards are determined to have a less than significant impact on global climate change. The project will not conflict with any plan, policy, or regulation developed to reduce GHG emissions. There is *no impact*.

Mitigation Measures: None required.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☑	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☑	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☑	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard 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 excessing noise for people residing or working in the project area?	☐	☐	☐	☑
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
g) Expose people or structures, either directly or indirectly to significant risk of loss, injury or death involving wildland fires.	☐	☐	☐	☑

Discussion:

a) **Less Than Significant Impact with Mitigation Incorporated:** The proposed project permits uses that will store and use a variety of hazardous materials (e.g., diesel fuels and gasoline). There is a risk of release of these materials into the environment if they are not stored and handled in accordance with best management practices. Hazardous material would be required to be transported, stored, used, and disposed of in

compliance with local, state, and federal regulations. The Tulare County Health and Human Services Agency (TCHSA), Environmental Health Division (EHD) is responsible for the implementation of statewide programs within the Plan Area including Hazardous Materials Business Plan (HMBP) requirements, among numerous other programs. Implementation of this program involves permitting, inspecting, providing education/guidance, investigations, and enforcement. Consistency with local, state, and federal regulations related to the transport, storage, use, and disposal of hazardous materials ensures that the potential risk of upset and accident conditions from a release is minimized to the extent practical.

The proposed Project does not involve uses or operations that would allow for the manufacture of hazardous materials; however, hazardous materials will be present via shipping to and from the Project area in route to their destination. The transport of these hazardous materials on area roadways are regulated by the California Highway Patrol and Caltrans. The Tulare County Agricultural Commissioner is responsible for regulating agrichemicals in Tulare County. Consistency with local, state, and federal regulations related to agrichemical use ensures that the potential risk of upset and accident conditions from a release is minimized to the extent practical.

Implementation of the **Mitigation Measure HAZ-1** will ensure that business operators on the Project site consult with the TCHHSA EHD for education/guidance related to specific requirements that their businesses must implement in the day-to-day operations. This includes the establishment of management practices for handling, storing, and disposal of hazardous materials, including fuels, paints, cleaners, solvents, pesticides, etc., during operations to reduce the potential for spills and to direct the safe handling of these materials if encountered. It also includes consultation related to specific permits that a business may require in order to operate (i.e., permits of underground storage tanks if they are part of the business).

While the risk of exposure to hazardous materials cannot be eliminated, measures can be implemented to reduce risk to acceptable levels. Adherence to existing regulations, including but not limited to Title 49 Code of Federal Regulations Parts 100-185 (Hazardous Materials Regulations), CCR Titles 8, 22, and 26, and their enabling legislation set forth in California Health and Safety Code Chapter 6.95, and TCHHSA EHD Hazardous Materials Business Plan requirements, would ensure compliance with safety standards related to the use and storage of hazardous materials and with the safety procedures mandated by applicable federal, state, and local laws and regulations. Compliance with applicable laws and regulations through the implementation of established safety practices, procedures, and reporting requirements would ensure that risks resulting from the routine transportation, use, storage, or disposal of hazardous materials, and hazardous material release associated with implementation of the proposed Project would be reduced to a *less than significant level with incorporation of mitigation*.

Mitigation Measure HAZ -1: Prior to the commencement of a business operation that involves the transport, storage, use, or disposal of a significant quantity hazardous material within the Project site, the business owner shall submit a Hazardous Materials Business Plan (HMBP) for review and approval by the Tulare County Health and Human Services Agency, Environmental Health Division. The HMBP shall establish management practices for handling, storing, and disposal of hazardous materials, including fuels, paints, cleaners, solvents, pesticides, fertilizers, etc., during operations to reduce the potential for spills and to direct the safe handling of these materials if encountered. The areas shall be designed with spillage catchments such that any accidental spillage is prevented from entering waterways. The business owner shall also consult with the Tulare County Health and Human Services Agency, Environmental Health Division to ensure that the particular business operations are compliant with all local, state, and federal regulations relative to their operations (i.e. proper permits for the installation and use of an underground storage of hazardous substances (USTs)). The approved HMBP and any other permit deemed to be required in order to commence the specific business operations shall be maintained onsite and all personnel shall acknowledge that they have reviewed and understand the HMBP and any other permit requirements.

b) **Less Than Significant Impact With Mitigation Incorporated:** (see discussion VIII.a) adherence to the local, state, and federal regulations discussed, including the establishment of management practices for the handling, storing, transportation and disposal of hazardous materials as well as the obtaining of required permits related to the operation of the business along with **Mitigation Measure HAZ-1** would reduce the project's creation of a significant hazard to the public to a *less than significant impact with mitigation incorporated*.

c) **Less Than Significant Impact With Mitigation Incorporated:** The proposed Project is anticipated to have businesses and operations that would emit hazardous emissions including Diesel Particulate Matter (DPM), and gasoline vapors. Additionally, the proposed Project would handle, use, and store hazardous materials onsite that are related to refueling operations. There is one existing school, Heritage Elementary School, located a quarter-mile to the northeast of the project site. However, the proposed project would comply with all BMPs and also be required to implement **Mitigation Measure HAZ-1**, to minimize the potential for accidental spill and release of hazardous materials. Therefore, the project would have *less than significant impacts with implementation of mitigation*.

d) **No Impact:** The project site is not listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. There would be *no impact*.

e) **No Impact:** The proposed project site is not located within the boundary of an airport land use plan and is not within two miles of a public airport or public use airport.

Mefford Field Airport is located over four miles southeast of the project site and Visalia Municipal Airport is located six miles north of the project site. Therefore, there is *no impact*.

f) **No Impact:** The proposed project does not include any characteristics (e.g., permanent road closures) that would physically impair or otherwise interfere with emergency response or evacuation in the project vicinity. In addition, the site plan has been reviewed by the Fire Department per standard City procedure to ensure consistency with emergency response and evacuation needs. Therefore, the proposed project would have *no impact* on emergency evacuation.

g) **No Impact:** The land surrounding the project site is developed with commercial and residential uses and is not considered to be wildlands. Additionally, the 2017 Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan finds that fire hazards within the City of Tulare, including the proposed project site, have low frequency, limited extent, limited magnitude, and low significance. The proposed project would not expose people or structures to significant risk of loss, injury or death involving wildland fires and there is *no impact*.

X. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements, or otherwise 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 offsite;	☐	☐	☑	☐
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☑	☐
(iv) Impede or redirect flood flows?	☐	☐	☐	☑
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	☐	☐	☐	☑
e) conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☑	☐

Discussion:

a) **Less Than Significant Impact:** Construction would include excavation, grading, and other earthwork that may occur across the 1.02 acre project site. During storm events, exposed construction areas across the project site may cause runoff to carry pollutants, such as chemicals, oils, sediment, and debris. However, this project will not violate any

water quality standards or waste discharge requirements. In accordance with National Pollutant Discharge Elimination System (NPDES) Stormwater Program, the project would be required to comply with a Stormwater Pollution Prevention Plan (SWPPP), which identifies all potential sources of pollution that could affect stormwater discharges from the project site and identifies best management practices (BMPs) to be implemented in order to eliminate sources of pollution to stormwater runoff for the project to use.

An intermittent riverine water body, known as Sand Ditch, located about 400 feet northwest of the project site. The project distance and gradient from Sand Ditch is such that the proposed project would have a less than significant impact. This appears to be an old irrigation ditch and it would not be affected by the proposed project because the proposed project construction would comply with required measures to minimize runoff and avoid impacts on surrounding surface water bodies. Furthermore, during project operation, stormwater runoff would be designed as part of the project to be carried into the City's storm drain inlets and stormwater infrastructure system.

The proposed project will also include the establishment of underground storage tanks for the storage of gasoline and diesel fuels. The proposed project will be required to obtain required permits from the Tulare County Environmental Health Division for the installation of underground storage tanks to ensure that they are installed correctly and meet required safety standards. The proposed project would tie into the City's sewer system and wastewater treatment plant, which has sufficient capacity to accommodate the project. Therefore, since the project will not violate any water quality standards or discharge standards and will not degrade surface water or groundwater quality and any impacts would be *less than significant*.

b) **Less Than Significant Impact:** The project would result in a reduction in percolation to the groundwater basin, because the project would create an increase in the amount of paved and impervious surfaces. However, this impact would be greatly reduced by the project's utilization and directing of stormwater flows to the existing stormwater basin located just over 0.3 of a mile southeast of the project site, where the water would be allowed to pool and percolate to the groundwater basin. The project has been reviewed by the City of Tulare Engineer, in consultation with the City's Public Works Department, who have determined that the Project will not have a significant impact on the existing water system, and would tie in to the existing water infrastructure for this part of the City.

The proposed project is within City limits and would not require annexation or acquisition of additional water rights. The project site has been accounted for retail commercial uses within the City's General Plan EIR and the City's Urban Water Management Plan. Since the proposed project is consistent with the General Plan land use designation, it has been accounted for accordingly in the City's projections of

demand based on future development on this site. Therefore, the project would have a *less than significant impact* on groundwater resources.

c) **Less Than Significant Impact:** Response as required is provided in i – iv below:

(i) The project areas are generally flat and no significant grading or leveling will be required. The construction of the proposed project may be considered an alteration in drainage patterns; however, this would not result in substantial erosion or siltation on- or off-site. Construction and grading activities could create a potential for surface water to carry sediment from onsite erosion into the storm water system and downstream waterways. However, stormwater pollution prevention BMP's, including the implementation of adopted management practices and compliance with the provisions of a stormwater pollution prevention plan (SWPPP) required to be implemented during project construction. Therefore, the impact would be *less than significant*.

(ii, iii) The proposed project will result in the creation of additional impervious surfaces which will create additional runoff. However, all stormwater runoff will be directed to an existing stormwater basin located just over 0.3-mile to the southeast of the project site. The applicant has been required to submit calculations necessary to demonstrate that the existing basin has sufficient capacity to retain any additional runoff generated by the proposed project, thus eliminating the potential for runoff that would result in potential for flooding. The applicant will also be required to submit a SWPPP, which identifies all potential sources of pollution that could affect stormwater discharges from the project site and identifies best management practices (BMPs) to be implemented in order to eliminate sources of pollution to stormwater runoff for the project to use. Therefore, the impact is less than significant.

(iv) The project area is generally flat and no significant grading or leveling will be required. The proposed project site is not in proximity to a stream or river and will not alter the course of a stream or river. According to FEMA FIRM map panel 1275E the project site is within a Zone X area of minimal flood hazard and is not within a 100-year flood hazard zone. Therefore, there will be *no impacts* to impede or redirect flood flows.

d) **No Impact:** According to FEMA FIRM map panel 1275E the project site is within a Zone X area of minimal flood hazard and is not within a 100-year flood hazard zone. The proposed project is located inland and not near an ocean or large body of water, and therefore, would not be affected by a tsunami. The proposed project is located in a relatively flat area and would not be impacted by inundation related to mudflow. Therefore, the proposed project would have *no impact* due to seiche, tsunami, or mudflow or risk release of pollutants due to inundation.

e) **Less Than Significant Impact:** The proposed project will not conflict with or obstruct implementation of a water quality control plan. The proposed project will be subject to the requirements of the NPDES Stormwater Program and will be required to comply with a SWPPP which will identify all potential sources of pollution that could affect stormwater discharges from the project site and identify Best Management Practices (BMP's) related to stormwater runoff for the project to use.

The proposed project is located within the Kaweah Groundwater Subbasin and is included within the Mid-Kaweah Groundwater Sustainability Agency (GSA). The California Department of Water Resources (DWR) in its Bulletin 118 – Interim Update, classified the Kaweah Subbasin as a High-Priority Groundwater Subbasin. Under the requirements of the Sustainable Ground Water Management Act (SGMA), a high-priority basin shall develop and implement a groundwater sustainability plan (GSP) to meet the sustainability goal established by the SGMA. All basins designated as high-priority by DWR are required to be managed under a GSP or coordinated GSP by January 31, 2020. The proposed project occurs within the existing city limits of the City of Tulare, and is not requesting or requiring annexation of further land or water under the jurisdiction of the other two member agencies; the City of Visalia and the Tulare Irrigation District. As stated in the GSP adopted in December 2019 by Mid-Kaweah, the City of Tulare's 2015 Urban Water Management Plan served as the informational document reviewed for an understanding of the urban water needs of the City of Tulare. The 2015 Urban Water Management Plan for the City, as well as the environmental impact report (EIR) prepared for the City's latest General Plan, account for the expected demand for groundwater associated with buildout of the areas within the City limits as well as the City's urban development boundary (UDB), assuming the project site would be developed with retail commercial land uses. Furthermore the proposed project is consistent with the Sustainability Goal of Mid-Kaweah's GSP which states the following:

> *"The broadly stated Sustainability Goal for the Kaweah Subbasin is for each GSA to manage groundwater resources to preserve the viability of existing agricultural enterprises of the region and the smaller communities that provide much of their job base in the Sub-basin, including the school districts serving these communities. The Goal will also strive to fulfill the water needs of existing and amended county and city general plans that commit to continued economic and population growth within Tulare County. This goal statement complies with §354.24 of the Regulations."*
>
> - Mid-Kaweah Groundwater Sustainability Agency
> Groundwater Sustainability Plan, Section 3.1, pp. 3-1
> December 2019

Once adopted and approved by DWR the proposed project will be subject to the requirements of the GSP prepared by the Mid-Kaweah GSA and will be required to meet any applicable requirements. Based on the existing and known information, potential impacts of the proposed project will be *less than significant.*

Mitigation Measures: None required.

XI. LAND USE AND PLANNING

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

Discussion:

a) **No Impact:** The proposed project will not physically divide an established community, but would develop a service station and associated convenience store on an existing vacant parcel at a key intersection in the community. There will be *no impacts* related to physical division of an established community.

b) **No Impact:** The proposed project is a conditionally permitted use under the current zoning and general plan land use designations. The project does not conflict with any land use plans for the area. There would be *no impact*.

Mitigation Measures: None required.

XII. MINERAL RESOURCES

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

Discussion:

a,b) **No Impact:** There are no known mineral resources of importance to the region and the project site is not designated under the City's General Plan as an important mineral resource recovery site. Therefore, the proposed project would not result in the loss or impede the mining of regionally or locally important mineral resources. There is *no impact*.

Mitigation Measures: None required.

XIII. NOISE

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

The City of Tulare's Noise Element was adopted in 2013 to protect the citizens of the City of Tulare from the harmful effects of exposure to excessive noise pollution and to protect the economic base of the City by preventing the encroachment of incompatible land uses near known noise-producing industries, railroads, airports and other sources. Noise pollution is defined as unwanted or excessive sound. Sound is a variation in air pressure that the human ear can detect. This pressure is measured within the human hearing range as decibels on the A scale (dBA). As the pressure of sound waves increases, the sound appears louder and the dBA level increases logarithmically. A noise level of 120 dB represents a million-fold increases in sound pressure above the 0-dB level.

Discussion:

a) **Less Than Significant Impact:** The proposed project will result in an increase in noise levels due to construction, however long-term noise level increases in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies are not expected. The average noise levels generated by common construction equipment are shown below in Table 7. The City of Tulare General Plan and Noise Ordinance does not identify noise thresholds for noise sources related to construction, however the General Plan does require the implementation of noise reduction measures for all construction equipment and limits noise generating activities related to construction to daytime hours Monday through Saturday. The project will comply with these regulations and construction will only occur Monday through Saturday between the hours of 6:00 a.m. and 10:00 p.m.

Table 7: Noise Levels of Noise-Generating Construction Equipment

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

Source: Federal Highway Administration Construction Noise Handbook.

Furthermore, the proposed project would be developed on the northwest corner of the existing parcel and would be located at least 100 feet from the closest residences. The further away from the noise source, the less perceptible the temporary periodic noise increases during construction.

Operation of the proposed project will include semi-truck traffic to the proposed project site which has the potential to generate noise. However, any noise generated is not expected to exceed standards established. The proposed project site is surrounded by residential and commercial development. Semi-truck traffic would be limited to occasional trips to refill fuel tanks as well as for supplies to the convenience store and tenant space. The proposed service station does not include a truck fuel and service component so noticeable, regular truck traffic to the site would not be expected. Operation of the site would not include any uses resulting in a noticeable increase of substantial noise and would not exceed the standards established by the City of Tulare Noise Element. Therefore, there would be a *less than significant impact*.

b) **Less Than Significant Impact:** Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 8, below, shows the typical vibration levels produced by construction equipment. The primary vibration-generating activities associated with the proposed project would occur when the infrastructure such as grading, utilities, and foundations are constructed. Operating cycles for the types of construction equipment used during construction may involve one or two minutes of full power operation followed

Table 8: Noise Levels of Noise-Generating Construction Equipment

Type of Equipment	Peak Particle Velocity @ 25 feet (inches/second)	Peak Particle Velocity @ 100 feet (inches/second)
Large Bulldozer	0.089	0.011
Loaded Trucks	0.076	0.010
Pile Driving (Impact)	1.518	0.190
Pile Driving (Sonic)	0.734	0.092
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.011
Jackhammer	0.035	0.004
Vibratory Hammer	0.070	0.009
Vibratory Compactor/roller	0.210	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines.

by three or four minutes at lower power settings. Other primary sources of acoustical disturbance would be due to random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). These estimations of noise levels take into account the distance to the receptor, attenuation from molecular absorption and anomalous excess attenuation. The most significant source of groundborne vibrations during the project's construction would occur from the use of vibratory compactors; the project would not include pile driving. Table 8, above, indicates that vibratory compactors would generate typical vibration levels of 0.210 inches per second at a distance of 25 feet. The threshold for architectural damage to buildings is 0.20 inches per second. The closest residential buildings to the project site are located north of the project site at a distance of approximately 115 feet, or 150 feet to the southwest. Table 8 data also indicates vibratory compactors would not generate vibration levels exceeding safe levels at these distances; therefore, this would be considered a *less than significant impact*.

c) **No Impact:** The project site is not located in an airport land use plan. Mefford Field is the nearest public airport and is located over four miles away from the proposed project site. Therefore, there would be *no impact*.

Mitigation Measures: None required.

XIV. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by new homes and businesses) or directly (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?	☐	☐	☐	☑

Discussion:

a,b) **No Impact:** The proposed project would not result in any population growth or population displacement in the City of Tulare. The project would provide long-term employment opportunities; however, these could be filled by employees already living within the City of Tulare or in neighboring cities and communities. The proposed project would be developed on vacant land zoned for commercial use within the City limits. There are no existing residences that would be removed and no individuals would be displaced because of the project. Therefore, there would be *no impact*.

Mitigation Measures: None required.

XV. PUBLIC SERVICES

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

The proposed project site is in an area already served by public service systems. The nearest fire station is the City of Tulare Fire Station #63, which is approximately 1.3 miles northeast of the project site. The City of Tulare Police Department is located at 260 South 'M' Street, approximately 1.8 miles southwest of the site.

Discussion:

a. **Less Than Significant Impact:** The proposed project site will continue to be served by the City of Tulare Fire Department. The project applicant would be required to submit plans to the City Fire Department for review and approval prior to the issuance of building permits to ensure the project would conform to applicable building and fire codes. No additional fire personnel or equipment is anticipated. The impact is therefore *less than significant.*

b. **Less Than Significant Impact:** The proposed project will continue to be served by the City of Tulare Police Department. Implementation of the proposed project would result in an increase in demand for police services; however, this increase would be minimal compared to the number of officers currently employed by the Tulare Police Department and would not trigger the need for a new or physically altered police facilities. Additionally, the proposed project site is in an area of the City that is planned for commercial development. No additional police personnel or equipment is anticipated. The impact is therefore *less than significant.*

c. **No Impact:** Since the project will not result in additional residents, the project will not increase the number of students in the school district. Therefore, there is *no impact*.

d. **No Impact:** The City standard is currently 4.0 acres of parkland per 1,000 population. However, the project will not result in additional residents, so the project will not create a need for additional parkland. Therefore, there is *no impact*.

e. **No Impact**: The proposed project site is within the land use and growth projections identified in the City's General Plan and other infrastructure studies. As such the project will not result in increased demand on other public facilities that has not already been planned for. Therefore, there is *no impact*.

Mitigation Measures: None required.

XVI. PARKS AND RECREATION

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

Discussion:

a) **No Impact:** The City standard is currently 4.0 acres of parkland per 1,000 population. Because the project will not result in additional residents, the project will not create a need for additional parkland. Therefore, there is *no impact*.

b) **No Impact:** There are no parkland or recreational facilities associated with the project. The City standard is currently 4.0 acres of parkland per 1,000 population. Because the project will not result in additional residents, the project will not create a need for additional parkland. Therefore, there is *no impact*.

Mitigation Measures: None required.

XVII. TRANSPORTATION

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with an a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☑	☐	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?	☐	☑	☐	☐
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?	☐	☐	☐	☑

Discussion:

a,b) **Less Than Significant Impact With Mitigation Incorporated:** The project would not conflict with any transportation policies plans or programs regarding public transit, bicycle, or pedestrian facilities. The proposed project would include frontage improvements, including sidewalks, which would be an improvement to pedestrian accessibility over existing conditions. The project would also install bicycle lanes along the Prosperity Avenue and West Street frontages. Vehicular access to the project site would be available via two drive approaches, one on Prosperity Avenue and one on West Street.

Any congestion during construction would be temporary. The following discussion is summarized from the project's Traffic Impact Study (GHD, October 2019), with the full Traffic Impact Study included as Appendix B to this Initial Study-Mitigated Negative Declaration document.

Existing Conditions

Under existing conditions, the intersections of Prosperity Avenue/West Street and Pleasant Avenue/West Street currently exceed their acceptable level of service (LOS)[1] threshold, per the City's General Plan standards, during one or both AM and PM peak periods. The proposed project is estimated to generate 1,640 net new daily trips,

[1] Level of service (LOS) is a qualitative measure used to relate the quality of motor vehicle traffic service. LOS is used to analyze roadways and intersections by categorizing traffic flow and assigning quality levels of traffic based on performance measures like vehicle speed, density, congestion, etc. and assigning a letter grade of acceptability as follows: A=free flow; B=reasonably free flow; C=stable flow, at or near free flow; D=approaching unstable flow; E=unstable flow operating at capacity; F=forced or breakdown flow.

including 100 AM peak hour trips and 112 PM peak hour trips. A pass-by trip reduction was applied to the gross trips to account for existing trips on the roadway system stopping at the convenience store and/or fuel pumps while traveling to/from primary origins/destinations. West and Prosperity are major travel routes for residents living on the west side of Tulare and there is currently a lack of commercial services compared to other parts of the City. The proposed commercial development would serve as an additional commercial option for these residents along their usual commute route, with the potential to reduce vehicle miles traveled by capturing these existing trips within the neighborhood, rather than further encouraging travel across the city for a service that can be found in their neighborhood.

Nonetheless, despite capture of existing trips, some additional trips would be generated by the development and added to the surrounding circulation system, including the two study intersections that already exceed their acceptable LOS, as stipulated by the City's General Plan Policy TR-P2.3.

To improve the LOS at the intersection of Prosperity Avenue and West Street, the City is already working on design plans for the following necessary improvements as part of a City Capital Improvement Project:

- Modify the intersection to include two through lanes in each direction;
- Modify the intersection to include a right-turn pocket lane in each direction;
- Modify the intersection to include a left-turn pocket lane in each direction; and
- Signalize the intersection, including protective left-turn phasing in all directions.

In addition, the project proponent would have to implement **Mitigation Measure TRA-1** to address the existing LOS deficiency at the intersection of Pleasant Avenue and West Street. This intersection is already operating at LOS "E" conditions during the AM peak hour and is anticipated to meet the California Manual on Uniform Traffic Control Devices (MUTCD) Warrant 3 (Peak Hour). The signalization and operational improvement of this intersection is not yet a funded project by the City. However, implementation of **Mitigation Measure TRA-1** would fulfill this project's mitigation obligation in order to reduce potential impacts on the transportation system to less than significant.

Mitigation Measure TRA-1: Prior to opening day of the proposed project, the project applicant shall coordinate with the City to construct the recommended roadway/intersection improvements for the intersection of Pleasant Avenue and West Street to achieve acceptable LOS at this intersection. The applicant's fair share of the costs of these improvements, subsequently adjusted to account for fees paid towards these improvements by the project to the City's Development Impact Fee Program, shall be identified and acceptable to the City Engineer.

Cumulative Year 2040 plus Project Conditions

Cumulative plus Project conditions were simulated by superimposing traffic generated by the Project onto Cumulative (2040) conditions and forecasted traffic volumes. As indicated in Table 8.1 of the Traffic Impact Study found in Appendix B of this Initial Study/Mitigated Negative Declaration, the Prosperity Avenue/West Street and Pleasant Avenue/West Street intersections are forecasted to operate at LOS "F" under Cumulative plus Project conditions. Both of the intersections are also projected to meet the California MUTCD Peak Hour Warrant 3. However, with construction of the improvements at Prosperity Avenue/West Street as a City Capital Improvement Project, and with implementation of **Mitigation Measure TRA-1**, both of these intersections would be forecast to operate at LOS "B" in the Cumulative 2040 Year. Therefore, the proposed projects impact to circulation systems will be *less than significant with mitigation incorporated.*

c) **No Impact:** No design feature associated with the project would pose a hazard risk. All motorized construction equipment (excavators, backhoes, graders, etc.) would remain on site. No changes that increase hazards would be made to intersections near the project site, and in fact improvements along the project frontage would improve pedestrian and bicycle infrastructure with city standard sidewalks and bicycle lanes being installed on both Prosperity Avenue and West Street. There would be *no impact*.

d) **No Impact:** The project would not result in inadequate emergency access. Emergency access to the site would be via West Street and Prosperity Avenue. Two City standard drive approaches will be provided, one on Prosperity Avenue and one on West Street. There would be *no impact*.

XVIII. TRIBAL CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
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:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☑
b) 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, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☑	☐	☐

Discussion:

a) **No Impact:** The proposed project is located on a site that has been previously disturbed and was most recently disturbed during disking activities to control vegetation. The Project site is within the limits of the City of Tulare and is not listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). Therefore, there is *no impact*.

b) **Less Than Significant with Mitigation Incorporated:** The proposed project is located on a site that has been previously disturbed and was most recently disturbed during disking activities to control vegetation. Nonetheless, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of **Mitigation Measure CUL-1** would ensure that impacts due to discovery of unanticipated cultural resources during excavation would be *less than significant with mitigation incorporated*.

Mitigation Measure CUL-1: If cultural resources or bones are encountered during ground-disturbing activities, work in the immediate area must halt and an archaeologist meeting the Secretary of Interior's Professional Qualifications Standards for archaeology (NPS 1983) shall be contacted immediately to evaluate the find. If the discovery proves to be significant, additional work such as data recovery, excavation, and Native American consultation may be warranted until the qualified archaeologist has determined that ground-disturbing activities may resume in the area of the find, or in alternate locations on the site, as approved by the project's qualified archaeologist, in consultation with any required federal, state, local, or Tribal authorities.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water or waste-water 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?	☐	☐	☐	☑

Discussion:

a) **Less Than Significant Impact:** The City's wastewater treatment facility (WWTF) has two wastewater treatment trains, domestic and industrial WWTT. Both operate in accordance to the Central Valley Regional Water Quality Control Board *Waste Discharge Requirements (WDR) Order NO. R5-2002-0186*. The City's Municipal Service Review (2013) indicates that Tulare's WWTF is at sufficient capacity to accommodate new development, including the proposed service station, which would tie into existing City sewage lines in the project vicinity. Based on calculations from the City of Tulare Sewer System Master Plan Table 3.10, a total of 510 gallons per day (gpd) of wastewater is estimated to be generated by the proposed project. This equates to approximately 0.0005 million gallons per day (mgd). The Tulare Water Pollution Control Facility (TWPCF) has an estimated capacity of 6.0 mgd. The proposed project would contribute a numerically insignificant percentage of the total remaining capacity of the TWPCF. Furthermore, the proposed project site was analyzed for service to be provided in the

City's Sewer System Master Planned and development here has been accounted for in this document.

The proposed project will utilize capacity within an existing storm water drainage basin located approximately 0.3-mile to the southeast. Electrical power, natural gas and telecommunications lines are utilized by adjoining uses and will be extended to the proposed project site. Impacts would be *less than significant*.

b) **Less Than Significant Impact:** The City's urban water supply is comprised entirely of groundwater pumped from the underground aquifer by wells located throughout the City. Water service to the Project site has been planned for through the City's General Plan and Urban Water Management Plan for growth within the city limits. Water will be brought in using water trucks during construction. After construction, operation of the service station and retail convenience store would generate demand for water that would not exceed the City's water supply sources, and the project would tie into the existing water lines on Prosperity Avenue and West Street.

The projected water demand for the proposed project is based on the City's standard water demand factors, which were applied in the City's Water System Master Plan to calculate projected water demands summarized in Table 3.7 of the Water System Master Plan (2009). The projected water demand for the proposed project is shown in Table 9.

Table 9: Projected Water Demand for the Family Foodland Service Station Project

Land Use Type	Units	Quantity	Water Demand Factor[(A)]	Average Day Demand, GPD	Annual Water Demand, AFY[(B)]
Community Commercial	Acres	1.02	1,300 gpd/AC[(c)]	1,326	1.48

Note: (A) Water Demand Factors are Provided from Table 3.8 of the City of Tulare Water System Master Plan, July 2009.
(B) AFY=Acre-feet Per Year
(C) GPD/AC = Gallons Per Day Per Acre

Source: City of Tulare Water System Master Plan, 2009.

As shown in the table, the total projected annual water demand for the proposed Project is 1.48 AFY. The proposed uses are consistent with the Community Commercial land use and therefore, the Community Commercial demand coefficient (1,300 gpd/acre) has been utilized to calculate the projected annual and daily water demand for the Project.

As described in the City's 2015 UWMP, the City will continue to periodically drill new supply wells in the future. The City continues to examine supply enhancement options, including surface water supply, urban recycled water use, etc., and additional supplies from Tulare Irrigation District (TID).

A comparison of the City's projected water supply and demand is shown in Table 10 for Normal, Single-Dry, and Multiple-Dry Years. The water supply and demand projections are based on the City's projected drought supply conditions as described in the City's 2015 UWMP. The supply-demand comparison in Table 10 indicates that the City will have sufficient water to meet its customers' needs through 2040. Current and ongoing management of these supplies is achieved through both voluntary and state-mandated consumption conservation efforts, and the Sustainable Groundwater Management Act (SGMA). The City has adopted outdoor water use conservation strategies as outlined in the UWMP and Chapter 7.32 of the Tulare Municipal Code.

Tulare General Plan Policy LU-P11.5 requires developers to assure that there is sufficient available water supply to meet projected demand for all new development. The proposed Project is planned to be consistent with the 2015 UWMP, which demonstrates adequate water supply to serve development in the City. Additionally, Tulare General Plan Policy LU-P11.3 requires all new development to be responsible for expansion of existing facilities, such as water systems, made necessary to serve the new development.

As described above, the proposed project would be expected to generate an annual water demand of 1.48 AFY. The City of Tulare 2015 UWMP describes that the City would have available water supply for normal year, single-year, and multi-dry year scenarios. The proposed project would generate an annual water demand that would be well within the limits of water demand, as described in the UWMP.

However, as noted previously, the Kaweah Sub basin is one of many in the San Joaquin Valley that is critically over-drafted. The City has developed strategies to assure that this source of supply remains available and viable in future years. For example, the City maintains the Water Conservation Ordinance to eliminate waste of water and will continue to periodically drill new supply wells in the future. Additionally, the City has joined the City of Visalia and the TID to form the Mid-Kaweah Joint Powers Authority (MKJPA) in an attempt to create a coordinated plan for the Sub basin. The City has also invested significantly in their detention basins to increase their recharge capacity.

The project would change uses on the site from vacant land to a service station, with convenience store and some parking, and would result in a reduction in percolation to the groundwater basin, because the project would create an increase in the amount of paved and impervious surfaces. However, this impact would be greatly reduced by the project's utilization and directing of stormwater flows to the existing stormwater basin located just over 0.3 of a mile southeast of the project site, where the water would be allowed to pool and percolate to the groundwater basin. The project has been reviewed by the City of Tulare Engineer, in consultation with the City's Public Works Department,

Table 10: Projected Water Supply (2020-2040)

Water Supply Source	2020		2025		2030		2035		2040	
	RAV[1]	TR/SY[2]	RAV[1]	TR/SY[2]	RAV[1]	TR/SY[2]	RAV[1]	TR/SY[2]	RAV[1]	TR/SY[2]
Groundwater	6,241.4	6,241.4	7,130.8	7,130.8	8,146.8	8,146.8	9,307.6	9,307.6	10,284.9	10,284.9
Surface Water	--	0	--	0	--	0	--	0	--	0
Recycled Water	4,864.4	0	5,837.3	0	7,004.8	0	8,405.7	0	10,086.9	0
Total	11,105.8	6,241.4	12,968.1	7,130.8	15,151.6	8,146.8	17,713.3	9,307.6	20,371.8	10,284.9

Notes: Unit of measurement is million gallons
[1] RAV=Reasonably Available Volume
[2] TR/SY = Total Right or Safe Yield

Source: City of Tulare Urban Water Management Plan, Table 6-9, 2015.

who have determined that the Project will not have a significant impact on the existing water system, and would tie in to the existing water infrastructure for this part of the City. Therefore, the Project would have a *less than significant impact* on groundwater resources.

c) **Less Than Significant Impact:** The project will connect to the City of Tulare's existing sewer lines in Prosperity Avenue and West Street. The wastewater generated from the proposed development would not exceed the City's wastewater treatment facility's capacity of 6.0 MGD, and would not require the construction of new or expansion of existing facilities to treat wastewater, as this area was accounted for retail commercial development to be served by the existing City sewer system. The impact would be *less than significant*.

d) **Less Than Significant Impact:** The proposed Project is a commercial project. Based on CalRecycle waste generation estimates, the proposed project is estimated to generate 3.12 pounds of solid waste per 100 sq. ft. per day. The proposed project would include the development of one 4,200 sq. ft. building on the approximately 1.02 acre site and would primarily include service sector space, including fueling facilities and other retail space. The solid waste that would be generated by the project is estimated to be 131 pounds per day, or .065 tons per day. The project would be required to comply with applicable state and local requirements including those pertaining to solid waste, construction waste diversion, and recycling. The City of Tulare disposes of its solid waste at the Visalia Landfill site. The landfill has sufficient permitted capacity to accommodate the City's, including the project's, solid waste disposal needs Any impacts would be *less than significant*.

e) **No Impact:** During construction, all solid waste generated by the project would be disposed of at the Visalia Landfill. This facility conforms to all applicable statutes and regulations related to solid waste disposal. The proposed project would comply with the adopted policies related to solid waste, and would comply with all applicable federal, state, and local statutes and regulations pertaining to disposal of solid waste, including recycling. Therefore, the proposed project would have *no impact* on solid waste regulations.

Mitigation Measures: None required.

XX. WILDFIRE

If located in or near state responsibility areas or land classified as very high fire hazard severity zones, would the project;	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan.	☐	☐	☐	☑
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire?	☐	☐	☐	☑
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or utilities) that may exacerbate fire risk 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?	☐	☐	☐	☑

Discussion:

a, b, c, d) **No Impact:** The proposed project site is not within or near a state responsibility area or area classified as very high fire hazard severity zone. The proposed project will not impair an adopted emergency response plan or evacuation plan. The proposed project site will not exacerbate wildfire risks, and expose occupants to pollutant concentrations from wildfire. The proposed project will not require the installation or maintenance of associated infrastructure that may exacerbate fire risk. The proposed project site is generally flat and is not near any streams or waterways and will not 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. Therefore, there would be *no impact*.

XX. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the project have the potential 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) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☑	☐
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☑	☐	☐

Discussion:

a) **<u>No Impact</u>:** This initial study/mitigated negative declaration found the project would not have the potential to degrade the quality of the environment or have significant adverse impacts to fish and wild life or plant species including special status species are not anticipated or reduce the number or restrict the range of a rare or endangered plant or animal. There would be *no impacts*.

b) **<u>Less Than Significant Impact</u>:** 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. Due to the nature of the project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., increase in

population could lead to an increased need for housing, increase in traffic, air pollutants, etc). Impacts would be *less than significant*.

c) **Less Than Significant Impact With Mitigation Incorporated:** The analyses of environmental issues contained in this Initial Study indicate that the project is not expected to have a substantial impact on human beings, either directly or indirectly, with implementation of the mitigation measures included in this document. All potential impacts of the project have been found to be *less than significant with incorporation of mitigation*.

SECTION 4:
Supporting Information and Sources

1) *Tulare General Plan, Land Use Element (2014)*
2) *City of Tulare Zoning Ordinance*
3) *Final Program EIR Land Use and Circulation Element Update (SCH 89062606)*
4) *SJVAPCD Regulations and Guidelines*
5) *Tulare General Plan, Housing Element (April 2016)*
6) *Tulare General Plan Seismic-Safety Element*
7) *Tulare County Seismic Element, Volume I and II*
8) *FEMA National Flood Hazard Layers & Mapping Tool*
9) *Tulare General Plan, Circulation Element (2014)*
10) *Tulare General Plan, Noise Element*
11) *City of Tulare Sewer Systems Master Plan (July 1991)*
12) *City of Tulare Sewer Systems Master Plan (2009)*
13) *Engineering Standards, City of Tulare*
14) *City of Tulare's Municipal Code*
15) *Tulare County Environmental Resources Management Element*
16) *Source Reduction and Recycling Element*
17) *City of Tulare Urban Water Management Plan (2015)*
18) *City of Tulare Water System Master Plan (July 2009)*
19) *City of Tulare Emergency Response Plan*
20) *Tulare Municipal Airport-Mefford Field Master Plan, (February 2005)*
21) *Tulare County Airport Land Use Compatibility Plan*
22) *California Air Resources Board's (CARB's) Air Quality and Land Use Handbook*
23) *2020 California Environmental Quality Act (CEQA) & Guidelines*
24) *The Five County Seismic Safety Element*
25) *California Building Code*
26) *California Stormwater Pollution Prevention Program (SWPPP)*
27) *Government Code Section 65962.5*
28) *California Environmental Protection Agency (CEPA)*
29) *California Department of Conservation*
30) California Natural Diversity Database Search Tool
31) CalRecycle Waste Generation Estimates
32) Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan (2017)
33) Natural Resource Conservation Service SoilWeb Tool

City of Tulare
Community and Economic Development Department
411 East Kern Avenue
Tulare, CA 93274

SECTON 5
List of Preparers

Project Title: Family Foodland Service Station

City of Tulare
Mario A. Anaya, Principal Planner

TAE, Inc., Architecture/Planning
Keith Reynolds
Michael Porter, LEED AP

GHD – Traffic Impact Study

Appendix A

CalEEMod Output Sheets

CUP 2020-03: Family Foodland

San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Convenience Market With Gas Pumps	4.20	1000sqft	0.10	4,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on expected construction timeframe provided by applicant

Land Use Change -

Stationary Sources - Emergency Generators and Fire Pumps -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Operational Off-Road Equipment -

Sequestration -

Table Name	Column Name	Default Value	New Value
tblSequestration	NumberOfNewTrees	0.00	5.00

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					
2021	0.0889	0.6097	0.5568	9.0000e-004	3.7500e-003	0.0336	0.0374	1.5000e-003	0.0310	0.0325	0.0000	78.9338	78.9338	0.0242	0.0000	79.5383
Maximum	**0.0889**	**0.6097**	**0.5568**	**9.0000e-004**	**3.7500e-003**	**0.0336**	**0.0374**	**1.5000e-003**	**0.0310**	**0.0325**	**0.0000**	**78.9338**	**78.9338**	**0.0242**	**0.0000**	**79.5383**

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					
2021	0.0889	0.6097	0.5568	9.0000e-004	2.5700e-003	0.0336	0.0362	9.2000e-004	0.0310	0.0319	0.0000	78.9337	78.9337	0.0242	0.0000	79.5382
Maximum	**0.0889**	**0.6097**	**0.5568**	**9.0000e-004**	**2.5700e-003**	**0.0336**	**0.0362**	**9.2000e-004**	**0.0310**	**0.0319**	**0.0000**	**78.9337**	**78.9337**	**0.0242**	**0.0000**	**79.5382**

	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**	**31.47**	**0.00**	**3.16**	**38.67**	**0.00**	**1.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

CUP 2020-03: Family Foodland - San Joaquin Valley Unified APCD Air District, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-4-2021	4-3-2021	0.2612	0.2612
2	4-4-2021	7-3-2021	0.2886	0.2886
3	7-4-2021	9-30-2021	0.1326	0.1326
		Highest	0.2886	0.2886

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	0.0193	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Energy	2.4000e-004	2.2000e-003	1.8500e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	13.3046	13.3046	5.0000e-004	1.4000e-004	13.3579
Mobile	1.0334	10.4378	6.1596	0.0234	0.8418	0.0197	0.8615	0.2264	0.0186	0.2450	0.0000	2,183.0061	2,183.0061	0.3464	0.0000	2,191.6662
Waste						0.0000	0.0000		0.0000	0.0000	2.5618	0.0000	2.5618	0.1514	0.0000	6.3466
Water						0.0000	0.0000		0.0000	0.0000	0.0987	0.7490	0.8477	0.0102	2.5000e-004	1.1751
Total	**1.0530**	**10.4400**	**6.1615**	**0.0234**	**0.8418**	**0.0199**	**0.8617**	**0.2264**	**0.0187**	**0.2452**	**2.6605**	**2,197.0597**	**2,199.7202**	**0.5085**	**3.9000e-004**	**2,212.5459**

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	0.0193	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Energy	2.4000e-004	2.2000e-003	1.8500e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	13.3046	13.3046	5.0000e-004	1.4000e-004	13.3579
Mobile	1.0253	10.3389	6.0035	0.0225	0.7838	0.0189	0.8027	0.2108	0.0178	0.2287	0.0000	2,106.7632	2,106.7632	0.3445	0.0000	2,115.3760
Waste						0.0000	0.0000		0.0000	0.0000	2.5618	0.0000	2.5618	0.1514	0.0000	6.3466
Water						0.0000	0.0000		0.0000	0.0000	0.0987	0.7360	0.8347	0.0102	2.5000e-004	1.1621
Total	**1.0449**	**10.3411**	**6.0054**	**0.0226**	**0.7838**	**0.0191**	**0.8028**	**0.2108**	**0.0180**	**0.2288**	**2.6605**	**2,120.8039**	**2,123.4643**	**0.5066**	**3.9000e-004**	**2,136.2427**

	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	**0.77**	**0.95**	**2.53**	**3.55**	**6.90**	**3.98**	**6.83**	**6.90**	**3.95**	**6.67**	**0.00**	**3.47**	**3.47**	**0.37**	**0.00**	**3.45**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	3.5400
Total	**3.5400**

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	1/4/2021	1/4/2021	5	1	
2	Grading	Grading	1/5/2021	1/11/2021	5	2	
3	Building Construction	Building Construction	1/19/2021	8/2/2021	5	100	
4	Paving	Paving	8/2/2021	8/6/2021	5	5	
5	Architectural Coating	Architectural Coating	8/9/2021	8/13/2021	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 6,300; Non-Residential Outdoor: 2,100; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Site Preparation - 2021

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	3.9100e-003	2.0100e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310
Total	**3.2000e-004**	**3.9100e-003**	**2.0100e-003**	**0.0000**	**2.7000e-004**	**1.5000e-004**	**4.2000e-004**	**3.0000e-005**	**1.4000e-004**	**1.7000e-004**	**0.0000**	**0.4276**	**0.4276**	**1.4000e-004**	**0.0000**	**0.4310**

3.2 Site Preparation - 2021

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0173	0.0173	0.0000	0.0000	0.0173
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0173**	**0.0173**	**0.0000**	**0.0000**	**0.0173**

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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	3.9100e-003	2.0100e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310
Total	**3.2000e-004**	**3.9100e-003**	**2.0100e-003**	**0.0000**	**1.2000e-004**	**1.5000e-004**	**2.7000e-004**	**1.0000e-005**	**1.4000e-004**	**1.5000e-004**	**0.0000**	**0.4276**	**0.4276**	**1.4000e-004**	**0.0000**	**0.4310**

3.2 Site Preparation - 2021

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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0173	0.0173	0.0000	0.0000	0.0173
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0173**	**0.0173**	**0.0000**	**0.0000**	**0.0173**

3.3 Grading - 2021

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					1.8800e-003	0.0000	1.8800e-003	1.0300e-003	0.0000	1.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9900e-003	0.0181	0.0189	3.0000e-005		1.0200e-003	1.0200e-003		9.7000e-004	9.7000e-004	0.0000	2.6023	2.6023	4.8000e-004	0.0000	2.6145
Total	**1.9900e-003**	**0.0181**	**0.0189**	**3.0000e-005**	**1.8800e-003**	**1.0200e-003**	**2.9000e-003**	**1.0300e-003**	**9.7000e-004**	**2.0000e-003**	**0.0000**	**2.6023**	**2.6023**	**4.8000e-004**	**0.0000**	**2.6145**

3.3 Grading - 2021

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	1.0000e-004	6.0000e-005	6.6000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1732	0.1732	0.0000	0.0000	0.1734
Total	**1.0000e-004**	**6.0000e-005**	**6.6000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1732**	**0.1732**	**0.0000**	**0.0000**	**0.1734**

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					8.5000e-004	0.0000	8.5000e-004	4.7000e-004	0.0000	4.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9900e-003	0.0181	0.0189	3.0000e-005		1.0200e-003	1.0200e-003		9.7000e-004	9.7000e-004	0.0000	2.6023	2.6023	4.8000e-004	0.0000	2.6145
Total	**1.9900e-003**	**0.0181**	**0.0189**	**3.0000e-005**	**8.5000e-004**	**1.0200e-003**	**1.8700e-003**	**4.7000e-004**	**9.7000e-004**	**1.4400e-003**	**0.0000**	**2.6023**	**2.6023**	**4.8000e-004**	**0.0000**	**2.6145**

3.3 Grading - 2021

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	1.0000e-004	6.0000e-005	6.6000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1732	0.1732	0.0000	0.0000	0.1734
Total	**1.0000e-004**	**6.0000e-005**	**6.6000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1732**	**0.1732**	**0.0000**	**0.0000**	**0.1734**

3.4 Building Construction - 2021

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	0.0543	0.5590	0.5085	8.0000e-004		0.0313	0.0313		0.0288	0.0288	0.0000	70.0574	70.0574	0.0227	0.0000	70.6239
Total	**0.0543**	**0.5590**	**0.5085**	**8.0000e-004**		**0.0313**	**0.0313**		**0.0288**	**0.0288**	**0.0000**	**70.0574**	**70.0574**	**0.0227**	**0.0000**	**70.6239**

3.4 Building Construction - 2021

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	2.3000e-004	7.7200e-003	1.4100e-003	2.0000e-005	4.6000e-004	2.0000e-005	4.9000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	1.8726	1.8726	1.4000e-004	0.0000	1.8762
Worker	2.7000e-004	1.8000e-004	1.8500e-003	1.0000e-005	5.6000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4851	0.4851	1.0000e-005	0.0000	0.4854
Total	**5.0000e-004**	**7.9000e-003**	**3.2600e-003**	**3.0000e-005**	**1.0200e-003**	**2.0000e-005**	**1.0500e-003**	**2.8000e-004**	**2.0000e-005**	**3.0000e-004**	**0.0000**	**2.3577**	**2.3577**	**1.5000e-004**	**0.0000**	**2.3616**

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	0.0543	0.5590	0.5085	8.0000e-004		0.0313	0.0313		0.0288	0.0288	0.0000	70.0574	70.0574	0.0227	0.0000	70.6238
Total	**0.0543**	**0.5590**	**0.5085**	**8.0000e-004**		**0.0313**	**0.0313**		**0.0288**	**0.0288**	**0.0000**	**70.0574**	**70.0574**	**0.0227**	**0.0000**	**70.6238**

3.4 Building Construction - 2021

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	2.3000e-004	7.7200e-003	1.4100e-003	2.0000e-005	4.6000e-004	2.0000e-005	4.9000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	1.8726	1.8726	1.4000e-004	0.0000	1.8762
Worker	2.7000e-004	1.8000e-004	1.8500e-003	1.0000e-005	5.6000e-004	0.0000	5.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4851	0.4851	1.0000e-005	0.0000	0.4854
Total	**5.0000e-004**	**7.9000e-003**	**3.2600e-003**	**3.0000e-005**	**1.0200e-003**	**2.0000e-005**	**1.0500e-003**	**2.8000e-004**	**2.0000e-005**	**3.0000e-004**	**0.0000**	**2.3577**	**2.3577**	**1.5000e-004**	**0.0000**	**2.3616**

3.5 Paving - 2021

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	1.8000e-003	0.0168	0.0177	3.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	2.3481	2.3481	6.8000e-004	0.0000	2.3652
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8000e-003**	**0.0168**	**0.0177**	**3.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.3481**	**2.3481**	**6.8000e-004**	**0.0000**	**2.3652**

3.5 Paving - 2021

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	1.8000e-004	1.1000e-004	1.1900e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3118	0.3118	1.0000e-005	0.0000	0.3120
Total	**1.8000e-004**	**1.1000e-004**	**1.1900e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3118**	**0.3118**	**1.0000e-005**	**0.0000**	**0.3120**

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	1.8000e-003	0.0168	0.0177	3.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	2.3481	2.3481	6.8000e-004	0.0000	2.3652
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8000e-003**	**0.0168**	**0.0177**	**3.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.3481**	**2.3481**	**6.8000e-004**	**0.0000**	**2.3652**

3.5 Paving - 2021

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	1.8000e-004	1.1000e-004	1.1900e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3118	0.3118	1.0000e-005	0.0000	0.3120
Total	**1.8000e-004**	**1.1000e-004**	**1.1900e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3118**	**0.3118**	**1.0000e-005**	**0.0000**	**0.3120**

3.6 Architectural Coating - 2021

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	0.0292					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**0.0298**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.6 Architectural Coating - 2021

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					
Archit. Coating	0.0292					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**0.0298**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.6 Architectural Coating - 2021

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**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Walkability Design

Increase Transit Accessibility

Improve Pedestrian Network

	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	1.0253	10.3389	6.0035	0.0225	0.7838	0.0189	0.8027	0.2108	0.0178	0.2287	0.0000	2,106.7632	2,106.7632	0.3445	0.0000	2,115.3760
Unmitigated	1.0334	10.4378	6.1596	0.0234	0.8418	0.0197	0.8615	0.2264	0.0186	0.2450	0.0000	2,183.0061	2,183.0061	0.3464	0.0000	2,191.6662

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Convenience Market With Gas Pumps	3,551.52	6,082.99	4964.74	2,207,328	2,055,022
Total	3,551.52	6,082.99	4,964.74	2,207,328	2,055,022

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
Convenience Market With Gas	9.50	7.30	7.30	0.80	80.20	19.00	14	21	65

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Convenience Market With Gas Pumps	0.506092	0.032602	0.169295	0.124521	0.019914	0.005374	0.021664	0.110051	0.001797	0.001623	0.005307	0.000969	0.000792

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	10.9064	10.9064	4.5000e-004	9.0000e-005	10.9454
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10.9064	10.9064	4.5000e-004	9.0000e-005	10.9454
NaturalGas Mitigated	2.4000e-004	2.2000e-003	1.8500e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.3982	2.3982	5.0000e-005	4.0000e-005	2.4124
NaturalGas Unmitigated	2.4000e-004	2.2000e-003	1.8500e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.3982	2.3982	5.0000e-005	4.0000e-005	2.4124

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					
Convenience Market With Gas Pumps	44940	2.4000e-004	2.2000e-003	1.8500e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.3982	2.3982	5.0000e-005	4.0000e-005	2.4124
Total		**2.4000e-004**	**2.2000e-003**	**1.8500e-003**	**1.0000e-005**		**1.7000e-004**	**1.7000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**2.3982**	**2.3982**	**5.0000e-005**	**4.0000e-005**	**2.4124**

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					
Convenience Market With Gas Pumps	44940	2.4000e-004	2.2000e-003	1.8500e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.3982	2.3982	5.0000e-005	4.0000e-005	2.4124
Total		**2.4000e-004**	**2.2000e-003**	**1.8500e-003**	**1.0000e-005**		**1.7000e-004**	**1.7000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**2.3982**	**2.3982**	**5.0000e-005**	**4.0000e-005**	**2.4124**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	34230	10.9064	4.5000e-004	9.0000e-005	10.9454
Total		**10.9064**	**4.5000e-004**	**9.0000e-005**	**10.9454**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Convenience Market With Gas Pumps	34230	10.9064	4.5000e-004	9.0000e-005	10.9454
Total		**10.9064**	**4.5000e-004**	**9.0000e-005**	**10.9454**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	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	0.0193	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Unmitigated	0.0193	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005

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	2.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0164					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Total	**0.0193**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

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	2.9200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0164					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.0000e-005	8.0000e-005	0.0000	0.0000	8.0000e-005
Total	**0.0193**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.0000e-005**	**8.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.8347	0.0102	2.5000e-004	1.1621
Unmitigated	0.8477	0.0102	2.5000e-004	1.1751

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.311105 / 0.190677	0.8477	0.0102	2.5000e-004	1.1751
Total		**0.8477**	**0.0102**	**2.5000e-004**	**1.1751**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Convenience Market With Gas Pumps	0.311105 / 0.179046	0.8347	0.0102	2.5000e-004	1.1621
Total		**0.8347**	**0.0102**	**2.5000e-004**	**1.1621**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.5618	0.1514	0.0000	6.3466
Unmitigated	2.5618	0.1514	0.0000	6.3466

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market With Gas Pumps	12.62	2.5618	0.1514	0.0000	6.3466
Total		**2.5618**	**0.1514**	**0.0000**	**6.3466**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Convenience Market With Gas Pumps	12.62	2.5618	0.1514	0.0000	6.3466
Total		**2.5618**	**0.1514**	**0.0000**	**6.3466**

9.0 Operational Offroad

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	3.5400	0.0000	0.0000	3.5400

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	5	3.5400	0.0000	0.0000	3.5400
Total		**3.5400**	**0.0000**	**0.0000**	**3.5400**

Appendix B

Traffic Impact Study

Southeast Corner of Prosperity Avenue/West Street – City of Tulare

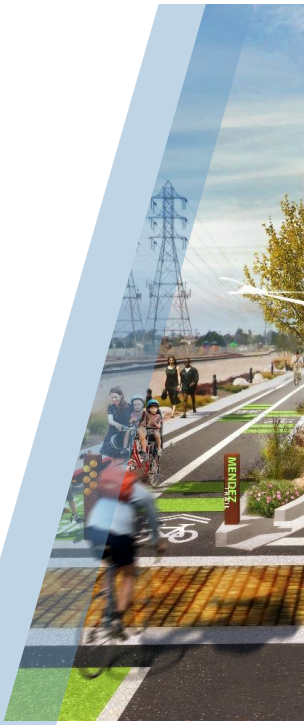
Traffic Impact Study

Prepared for:

TAE, Inc.

Final Report

October 2019



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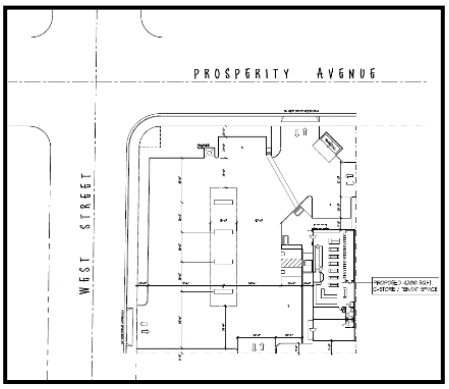
1. Introduction



This report has been prepared to present the results of a Traffic Impact Study (TIS) prepared by GHD for a proposed convenience store and gasoline fueling station located at the southeast corner of Prosperity Avenue/West Street in Tulare, California (see Figure 1). The proposed retail development, herein called **Project**, would include a 4,200 square foot convenience store (mini-mart) with 16 vehicle fueling positions and off-sale beer and wine liquor license.

It is anticipated that the primary users of this project be local residents, students from neighboring schools, park users and employees of nearby industrial center. It is also anticipated that employees at the mini-mart would live nearby.

0 0.25 0.5 0.75 1

Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California IV FIPS 0404 Feet

N

GHD

TAE Inc., Architecture/Planning

Project Vicinity Map

Project No. 11197916
Revision No. -
Date 07/02/2019

FIGURE 1

N:\US\Fresno\Projects\561\11197916\GIS\Maps\Working\Vicinity Map.mxd
Print date: 20 Sep 2019 - 16:22

Data source: Tulare County Public Shape Files (streets). Created by: jramirez2

2. Existing Roadway System

Roadways that provide primary circulation in the vicinity of the project site include Prosperity Avenue, Pleasant Avenue and West Street.

2.1 Transportation Setting

The following roadways provide primary circulation within the Study Area. The following roadway characteristics were attained referencing the City of Tulare General Plan Circulation Element and Google Earth.

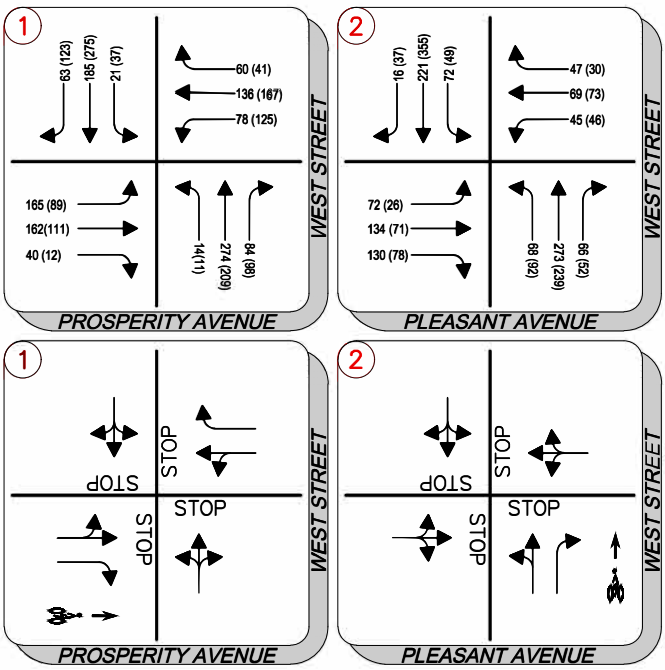
> ***Prosperity Avenue*** is a minor arterial roadway that runs in an east-west direction. This 2-lane roadway, also known as Avenue 240, extends throughout the entire City. Near the study area, Prosperity Avenue provides access to local residences, businesses and agricultural uses.
>
> ***Pleasant Avenue*** is an east-west oriented primary collector in the City of Tulare. Within the study area, Pleasant Avenue (Avenue 236) is a 2-lane undivided street that extends from Enterprise Street to the west and Gem Street east of State Route 99. This road serves many land uses, including residential, educational, recreational and agricultural.
>
> ***West Street*** is a minor arterial that traverses in a north-south direction. Within the study area, West Street is a 2-lane undivided roadway that extends from Paige Avenue to Avenue 260. Primary land uses along this corridor include residential, agricultural and pockets of retail at major intersections.

2.1.1 Study Intersections

The following intersections and road segments were identified in coordination with the City of Tulare.

- Prosperity Avenue/ West Street (Intersection #1)
- Pleasant Avenue/West Street (Intersection #2)
- Prosperity Avenue/Driveway #1 (with project only)
- Driveway #2/West Street (with project only)

Intersection peak hour turning movement counts were collected by Metro Traffic Data, Inc., on Thursday, September 5th, 2019 for intersection #1. Additional traffic count data from the *TCAG Annual Intersection Monitoring Program – 2017 Intersection Monitoring Report* was used for peak hour turning movements counts for Intersection #2, per direction from the city's taffic engineer. Figure 2 presents the Existing intersection lane geometrics, traffic controls and Existing weekday AM and PM peak hour volumes.



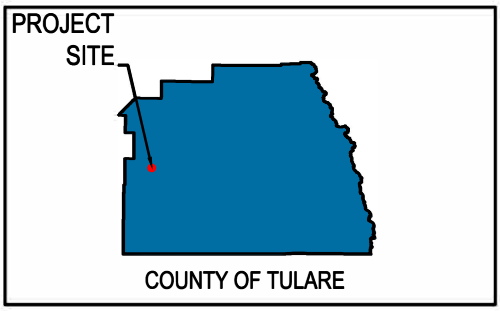
LEGEND:

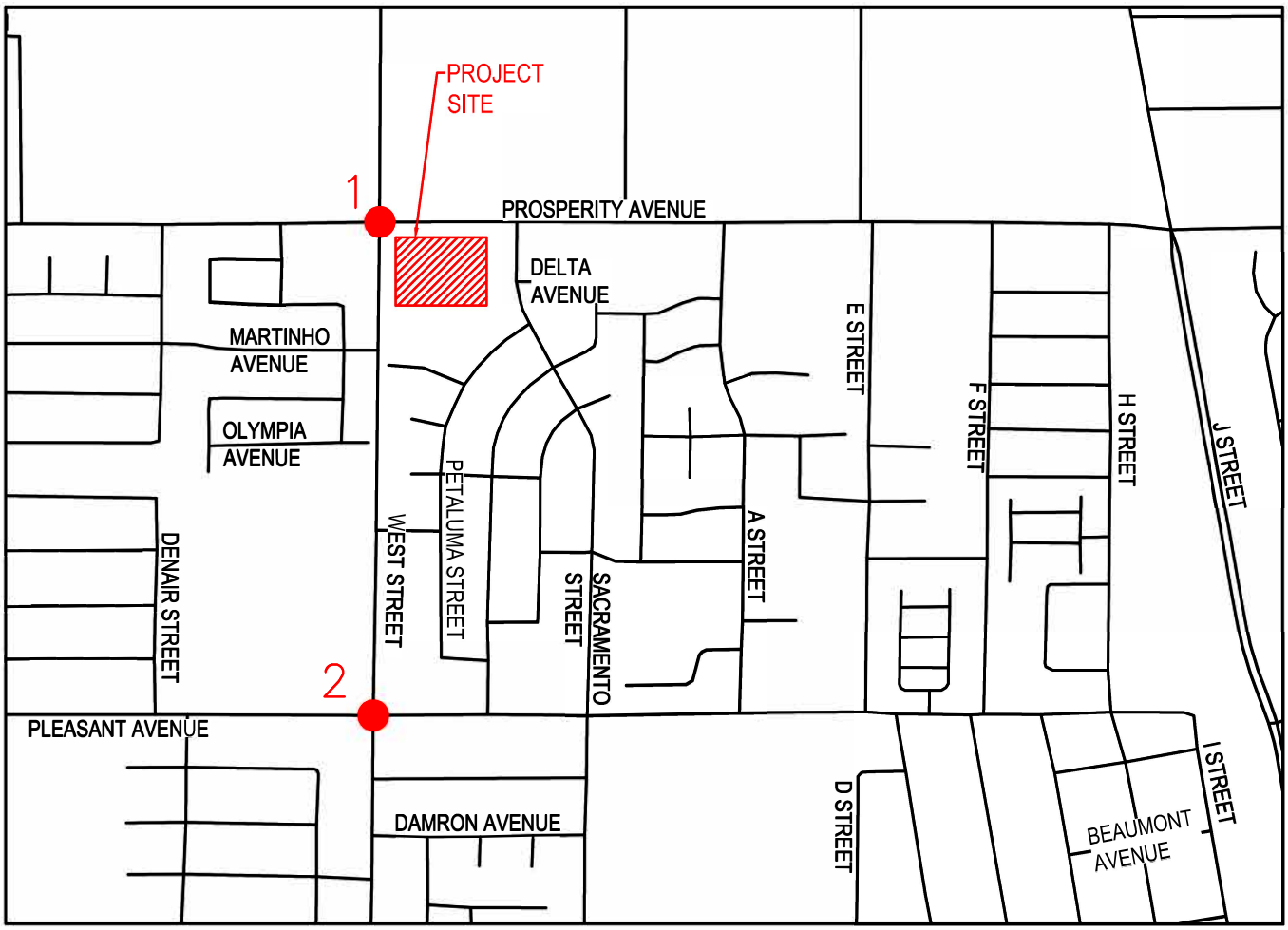
BICYCLE LANE

VEHICLE LANE

XX - AM PEAK HOUR TRAFFIC VOLUMES

(XX) - PM PEAK HOUR TRAFFIC VOLUMES





N

GHD

TAE Inc.
TRAFFIC IMPACT STUDY

EXISTING LANE GEOMETRICS AND CONTROL AND PEAK HOUR TRAFFIC VOLUMES

Project No. 11197916
Report No. 001
Date 09.19.19

FIGURE 2

Filename: N:\US\Fresno\Projects\561\11197916\Digital_Design\Transportation\Tulare TIS.dwg Plot Date: 20 September 2019 - 3:47 PM

Source: Tulare County Resource Management Agency
County Streets
County Boundary

3. Level of Service Methodologies and Guidelines

The following section presents a summary of the general level of service (LOS) methodologies and guidelines used in the analysis of intersections.

3.1 General LOS Methodologies

Intersection LOS was calculated for all control types (e.g. signalization, stop sign controlled) using the *Synchro 10* (Trafficware) integrated computer software program. LOS determinations are presented on a letter grade scale from "A" to "F", whereby LOS "A" represents "free-flow" conditions and LOS "F" represents over capacity conditions.

3.1.1 Intersection LOS Methodologies

For All-Way Stop Control (AWSC) and signalized (future) intersections, overall intersection delays and LOS are average values for all intersection movements. For Two-Way Stop-Control (TWSC) intersections, LOS is based upon worst approach delay. Table 3.1 presents the delay-based LOS criteria for different types of intersection control.

3.2 Agency LOS Guidelines

3.2.1 City of Tulare LOS Guidelines[1]

> *TR-P2.3:* ***Level of Service Standard.*** *The City shall maintain Level of Service of "D," as defined in the Highway Capacity Manual (published by the Transportation Research Board of the National Research Council), as the minimum desirable service level at which freeways, arterial streets, collector streets and their intersections should operate.*

Therefore, LOS "D" is the minimum standard that will be used for all intersection control types in this report.

[1] Tulare General Plan for the City of Tulare, October 7, 2014

Table 3.1 – Level of Service (LOS) Criteria for Intersections

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle		
				Signalized	Un-signalized	All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	<10.0	<10.0	<10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0 and <20.0	>10.0 and <15.0	>10.0 and <15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20.0 and <35.0	>15.0 and <25.0	>15.0 and <25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35.0 and <55.0	>25.0 and <35.0	>25.0 and <35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55.0 and <80.0	>35.0 and <50.0	>35.0 and <50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	>80.0	>50.0	>50.0

References: Highway Capacity Manual 6th Edition

3.3 Intersection Operation Analysis Software

The *Synchro 10* software suite was used to analyze the LOS analysis for signalized/unsignalized intersections analyzed within this study. This software is based upon the latest assumptions provided in the *Highway Capacity Manual* (HCM), 6th Edition.

3.4 Technical Analysis Parameters

This Traffic Impact Analysis (TIA) provides evaluation of traffic operating conditions by incorporating appropriate heavy vehicle adjustment factors, peak hour factors (PHF), and signal timings and reports the resulting intersection delays and LOS as estimated using *Synchro 10*. The following section describes all technical parameters incorporated into intersection analysis.

Table 3.7 presents technical parameters which were applied to study intersections during the analysis.

Table 3.7 – Intersection LOS: Technical Analysis Parameters

Technical Parameters	Assumption
% Trucks	Intersection Approach, based on Existing Counts, min 2%
PHF for Existing	Intersection Approach, based on Existing Counts
PHF for Approve Pending and Future Conditions Scenarios	Intersection Overall, 0.92 or higher
Signal Timings	Based on Agency timing plans
Grade	2% or less at all intersections

Additionally, in terms of factors that affect how a road or intersection operates, PHFs are a significant measure of how concentrated traffic is during the busiest portion of the peak hour. A PHF at a given intersection is the sum of the traffic entering the intersection over the busiest 60 minutes divided by four times the entering volume of the busiest 15-minutes within the hour.

A PHF of 1.0 means traffic levels are evenly spread out over the whole hour, where a lower number means traffic spikes for a short period. However, issues of concern have occurred between existing conditions, where actual PHF is applied, and with Existing plus Approved/Pending Projects/Existing plus Project, where a default values much closer to 1.0 are used. In some instances, such as in this report, intersection delay improves after adding approved/pending projects as a result of the higher PHF. This is solely attributable to the PHF.

4. Existing Conditions

The *Existing* conditions is the analysis scenario in which current operations at study locations are analyzed and establishes the baseline traffic conditions.

4.1 Intersection Operations

Existing weekday AM and PM peak hour intersection traffic operations were quantified utilizing the Existing traffic volumes, intersection lane geometrics and control. Table 4.1 presents intersection operations for the *Existing* conditions.

Table 4.1 – Existing Peak Hour Conditions Intersection Operations

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS[2]	Warrant Met?[3]	Delay	LOS[2]	Warrant Met?[3]
1	**Prosperity Avenue/West Street**	**AWSC**	**D**	**81.0**	**F**	**Yes**	**46.8**	**E**	**Yes**
2	**Pleasant Avenue/West Street**	**AWSC**	**D**	**43.9**	**E**	**Yes**	27.1	D	No

Notes:
1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approaches for AWSC
3. Warrant = Based on California MUTCD Warrant 3
*4. **Bold** = Unacceptable Conditions*

As presented in Table 4.1, both of the study intersections are currently operating at unacceptable LOS "E" or worse conditions during AM and/or PM Peak hour conditons. In addition, these stop-controlled intersections currently meet the California MUTCD Warrant 3 under Existing conditions.

Mitigation measures are discussed in the mitigation section of this report.

5. Approved/Pending Projects

The City of Tulare provided details on two Approved/Pending subdivisions that are planned within the vicinity of the project. These subdivisions include the following:

- Villa Toscana – 24 lot single-family subdivision located on the south side of Olema Avenue, west of West Street.
- Oak Crest/Shenandoah – 206 lot single-family subdivision located on the north side of Tulare Avenue west of where Cross Avenue and Tulare Avenue join.

5.1 Approved/Pending Projects Trip Generation

Table 5.1 identifies estimated Approved/Pending Projects trip generation calculations. As shown in Table 5.1, the Approved/Pending Projects are estimated to generate approximately 1,992 daily trips, including 156 AM and 209 PM peak hour trips. Trips were distributed throughout western

Tulare focusing on trip matching between the subdivisions (trip generator) and employment centers, parks/schools, shopping opportunities, and regional thoroughfares (trip attractors). Figure 3 shows Approved/Pending Projects trip distribution.

Table 5.1 – Existing plus Approved/Pending Project Trip Generation

Land Use Category (ITE Code)	Unit[1]	Daily Trip Rate/Unit[2]	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Single Family Detached Housing (210)	DU	9.44	0.74	25%	75%	0.99	63%	37%
Project Name	**Quantity (Units)**	**Daily Trips**	**AM Peak Hour Trips**			**PM Peak Hour Trips**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
Subdivision Development 1	187	1,765	138	35	104	185	117	68
Villa Toscana Phase 2	24	227	18	4	13	24	15	9
Net New Project Trips		**1,992**	**156**	**39**	**117**	**209**	**132**	**77**

Notes:
1. 1 ksf = 1,000 square feet DU = dwelling unit
2. Trip rates based on ITE Trip Generation Manual 10th edition fitted-curve equations or average rates

5.2 Approved/Pending Projects Intersection Operations

Existing plus Approved/Pending Projects conditions were estimated by superimposing trips from Table 5.1 onto Existing traffic volumes. Figure 4 presents the Existing plus Approved/Pending intersection lane geometrics, traffic controls and Existing weekday AM and PM peak hour volumes. Existing plus Approved/Pending Projects intersection LOS is shown in Table 5.2.

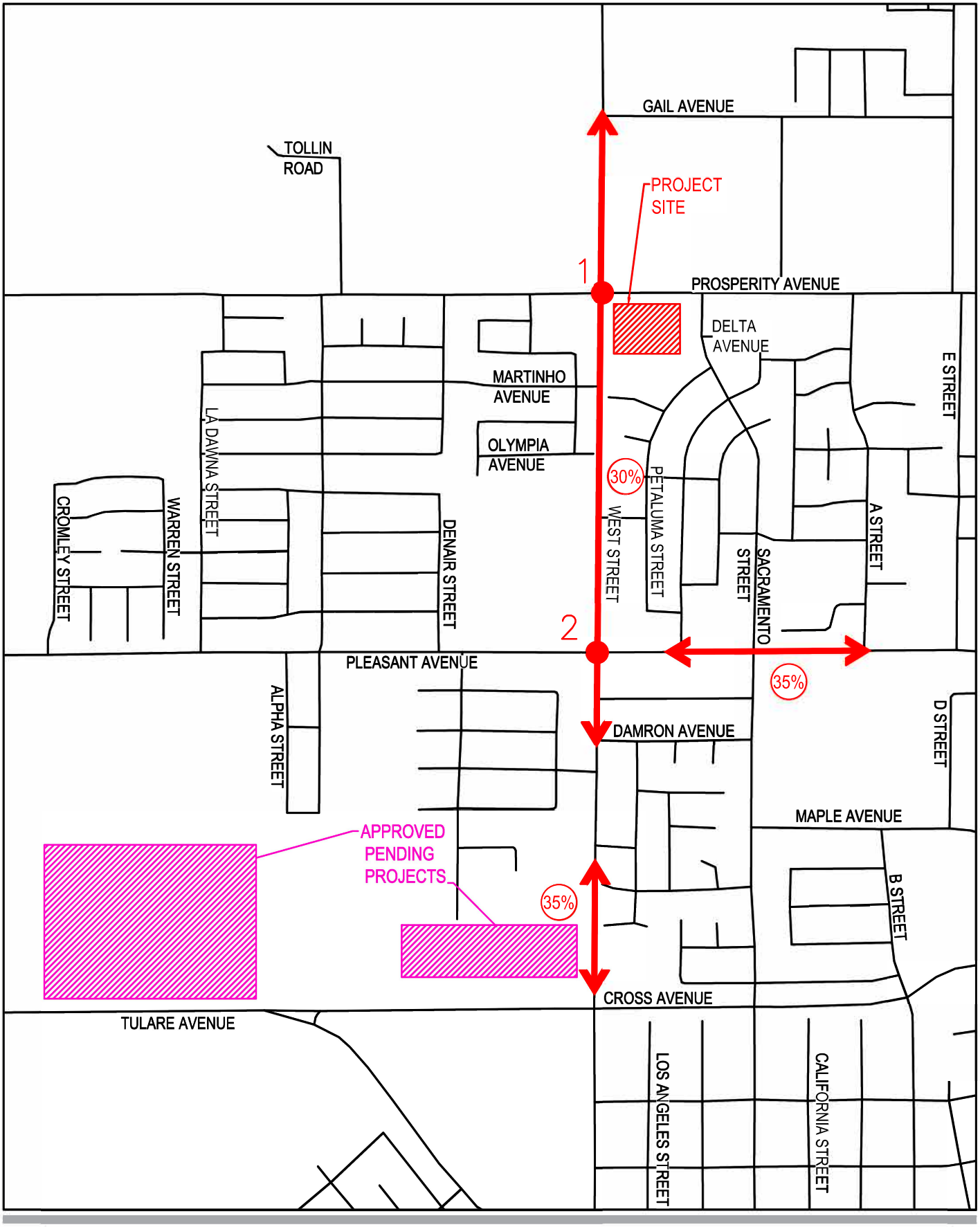
Table 5.2 – Existing plus Approved/Pending Project Intersection Level of Service

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS[2]	Warrant Met?[3]	Delay	LOS[2]	Warrant Met?[3]
1	**Prosperity Avenue/West Street**	**AWSC**	**D**	**37.0**	**E**	**Yes**	**47.6**	**E**	**Yes**
2	Pleasant Avenue/West	AWSC	D	26.9	D	Yes	25.0	C	—

Notes:
1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approached for AWSC
3. Warrant = Based on California MUTCD Warrant 3, Dash (—) indicates no warrant analysis was conducted do to acceptable delay and LOS
*4. **Bold** = Unacceptable Conditions*

As shown in Table 5.2, Intersection #1 (Prosperity Avenue/West Street) is forecasted to operate at unacceptable LOS "E" conditions under Existing plus Approve Pending scenario. In addition, this stop-controlled intersection is projected to meet the California MUTCD Warrant 3.

Mitigation measures are discussed in the mitigation section of this report.



LEGEND:

00% TRIP DISTRIBUTION PERCENTAGE

TRIP DISTRIBUTION

INTERSECTION NODE

N

TAE Inc.
TRAFFIC IMPACT STUDY

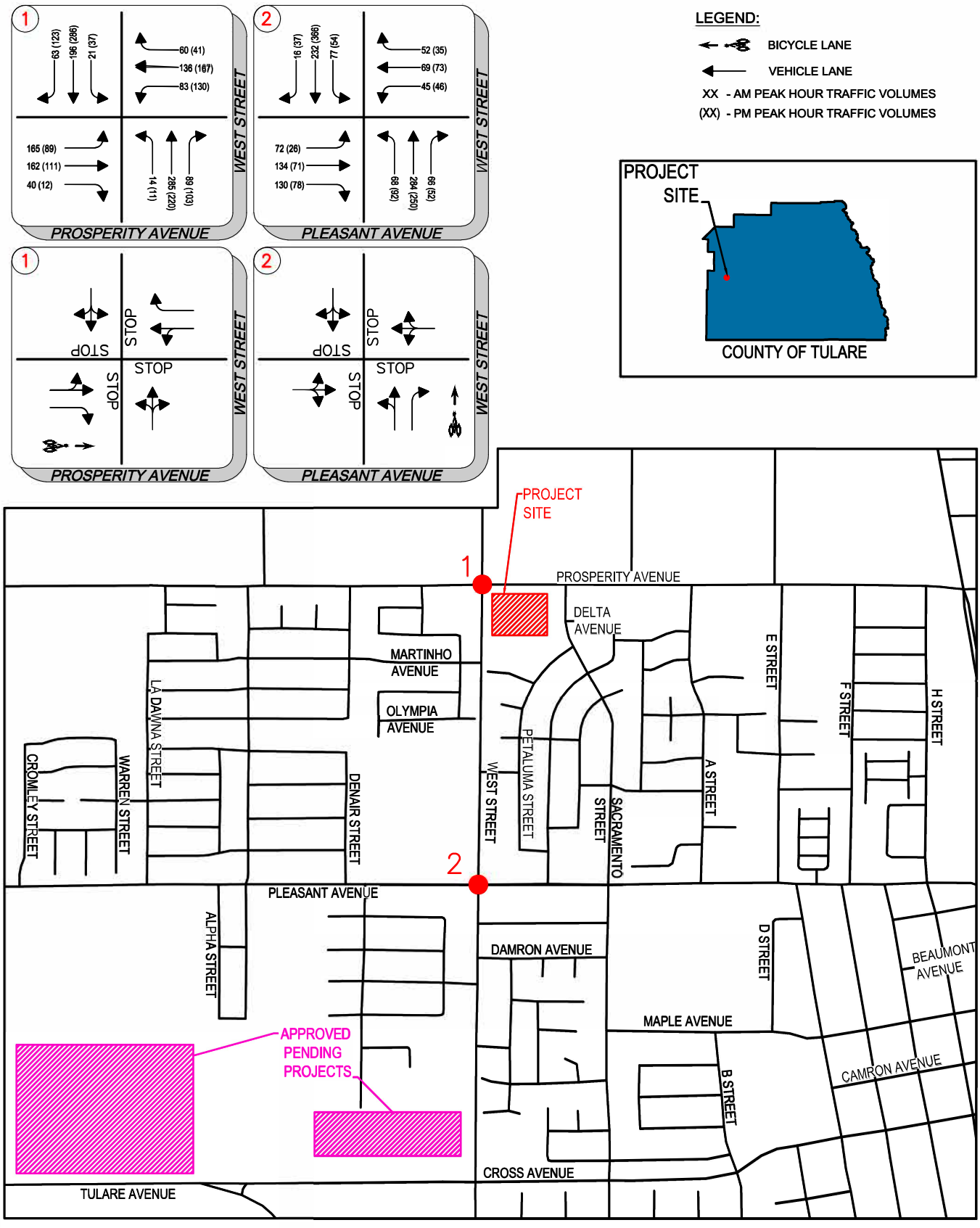
APPROVED/PENDING PROJECTS TRIP DISTRIBUTION

Project No. **11197916**
Report No. **001**
Date **09.19.19**

FIGURE 3

Filename: N:\US\Fresno\Projects\561\11197916\Digital_Design\Transportation\Tulare TIS.dwg Plot Date: 23 September 2019 - 7:02 AM

Source: Tulare County Resource Management Agency, County Streets



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GHD

TAE Inc.
TRAFFIC IMPACT STUDY

EXISTING + APPROVED/PENDING PROJECTS LANE GEOMETRICS AND CONTROL AND PEAK HOUR TRAFFIC VOLUMES

Project No. **11197916**
Report No. **001**
Date **09.19.19**

FIGURE 4

Filename: N:\US\Fresno\Projects\561\11197916\Digital_Design\Transportation\Tulare TIS.dwg Plot Date: 20 September 2019 - 3:45 PM

Source: Tulare County Resource Management Agency
County Streets
County Boundary

6. Existing plus Approved/Pending Projects plus Project

6.1 Project Description

For analysis purposes, the proposed Project will be completed in a single phase. The term "Project", as used in this report, refers to the development as follows:

- Location: Southeast corner of Prosperity Avenue and West Street
- Land Use Quantities
    - Convenience store - 4,200 square feet
    - Vehicle fueling positions (VFP) – 16
- Project Driveways
    - One full-access driveway on Prosperity Avenue
    - One full-access driveway on West Street

6.2 Project Trip Generation

Project trip generation forecasts were derived using the *Institute of Transportation Engineers (ITE) Trip Generation Manual 10th* Edition fitted-curve equations. Table 6.1 presents a summary of the land use and quantities for the proposed project, along with the corresponding ITE land use code from which trip generation characteristics were established.

Table 6.1 – Project Trip Generation

Land Use Category (ITE Code)	Unit	Daily Rate/ Unit	AM Peak Hour Rate/Unit			PM Peak Hour Rate/Unit		
			Total	In %	Out %	Total	In %	Out %
Gas/Service Station with Convenience Market (945)	VFP	205.00	12.47	51%	49%	13.99	51%	49%
Project Name	**Quantity**	**Daily Trips**	**AM Peak Hour Trips**			**PM Peak Hour Trips**		
			Total	**In**	**Out**	**Total**	**In**	**Out**
Mini-Market with Fueling Stations	16	3,280	200	102	98	224	114	110
Pass-by Trip Reduction %	*50%*	*-1,640*	*-100*	*-51*	*-49*	*-112*	*-57*	*-55*
Net New project Trips		**1,640**	**100**	**51**	**49**	**112**	**57**	**55**

Notes:
1. 1 ksf = 1,000 square feet, VFP=Vehicle Fueling Positions
2. Trip rates based on ITE Trip Generation Manual 10th edition fitted-curve equations
3. Pass-by trip reduction percentage based upon ITE Trip Generation Handbook, Table E.37

As shown in Table 6.1, the project is estimated to generate 1,640 net new daily trips, including 100 AM peak hour trips and 112 PM peak hour trips. A pass-by trip reduction was applied to the gross trips to account for existing trips on the roadway system stopping at the convenience store while traveling to/from primary origin/destination.

The use of 50% pass-by reduction factor for gas/service station with convenience market (ITE Code 945) is conservatively estimated based upon Table E.37 in the ITE *Trip Generation Handbook (3rd Edition).* For this land use, Table E.37 identifies a range of pass-by reductions that range between 56% during the PM peak and 62% during the AM peak.

6.3 Project Trip Distribution

The Project directional trip distribution and specific assignment of project-generated trips were established based upon discussions with the City, the geographic location of the project, an understanding of existing and projected future traffic flows and travel patterns within the vicinity of the project site. Figure 5 shows expected project trip distribution.

6.4 Project Site Access

Access to the project site is provided via two (2) project driveways. The first project driveway is located on the south side Prosperity Avenue, just east of West Street; the second project driveway is located on the east side of West Street, just south of Prosperity Avenue. Exhibit 1 presents the Project Site Plan and shows the two project driveways.

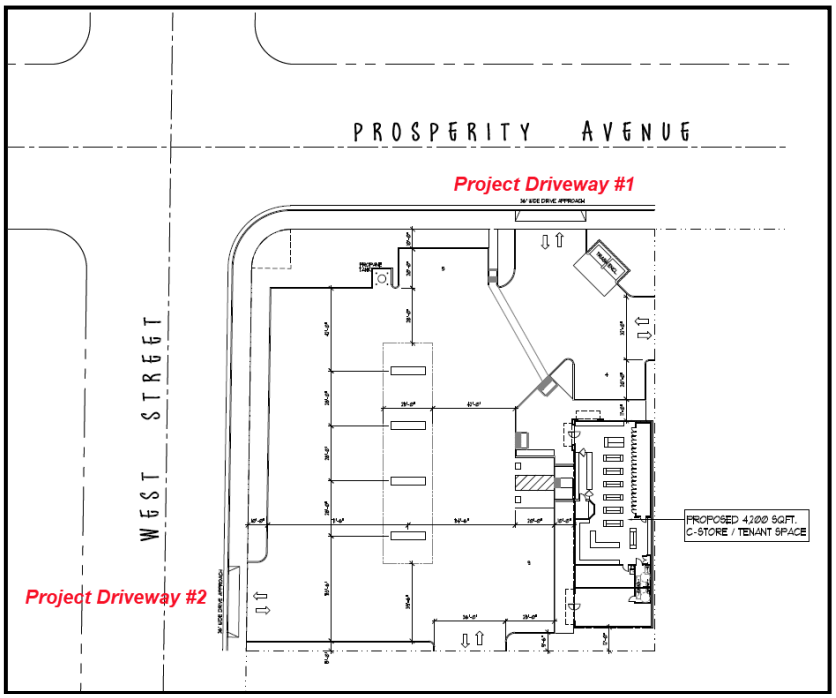
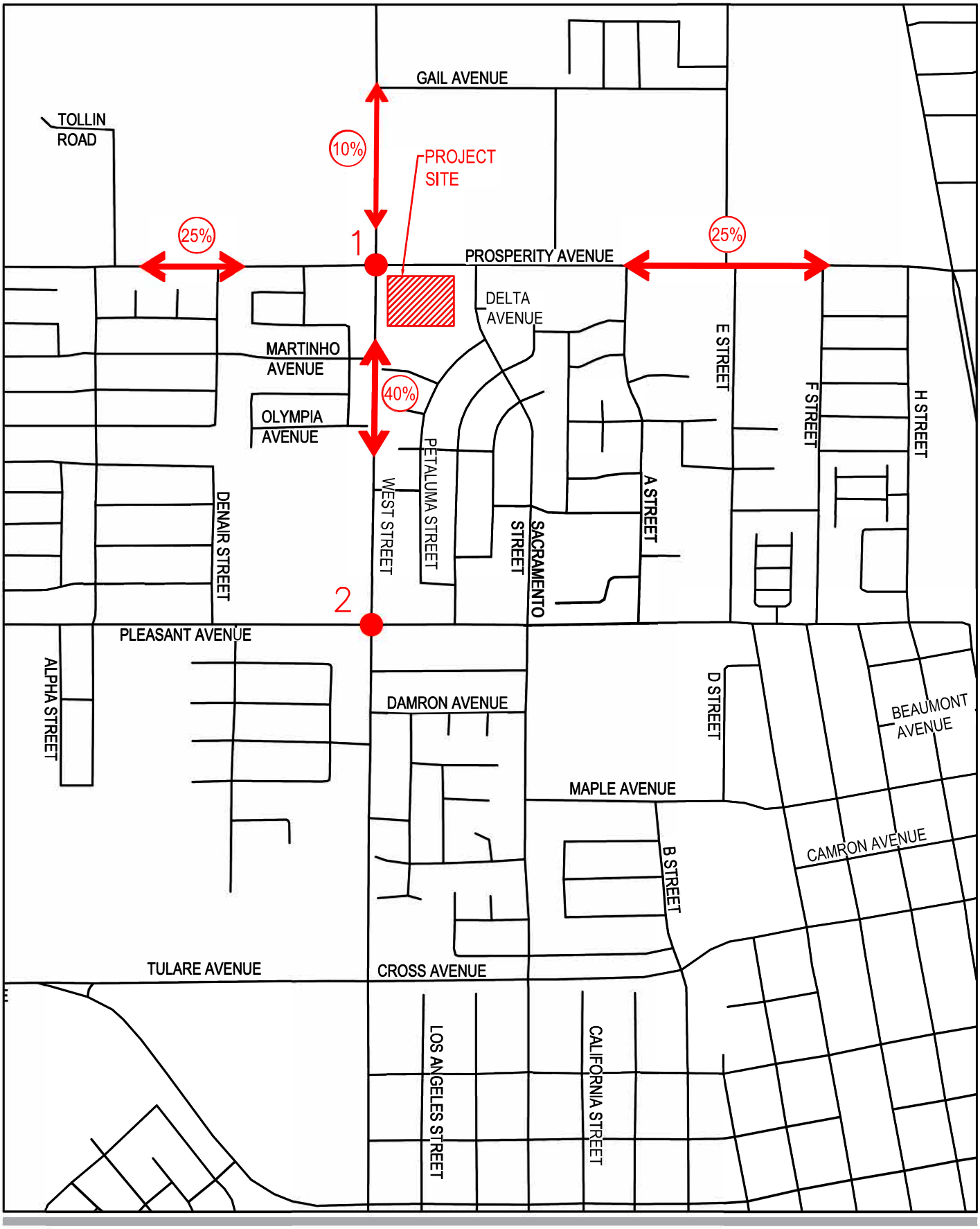


Exhibit 1 - Project Site Plan/Driveways



LEGEND:

00% TRIP DISTRIBUTION PERCENTAGE

TRIP DISTRIBUTION

INTERSECTION NODE

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TRAFFIC IMPACT STUDY

PROJECT TRIP DISTRIBUTION

Project No. 11197916
Report No. 001
Date 09.19.19

FIGURE 5

Filename: N:\US\Fresno\Projects\561\11197916\Digital_Design\Transportation\Tulare TIS.dwg Plot Date: 7 October 2019 - 10:32 AM

Source: Tulare County Resource Management Agency, County Streets

6.5 Intersection Operations

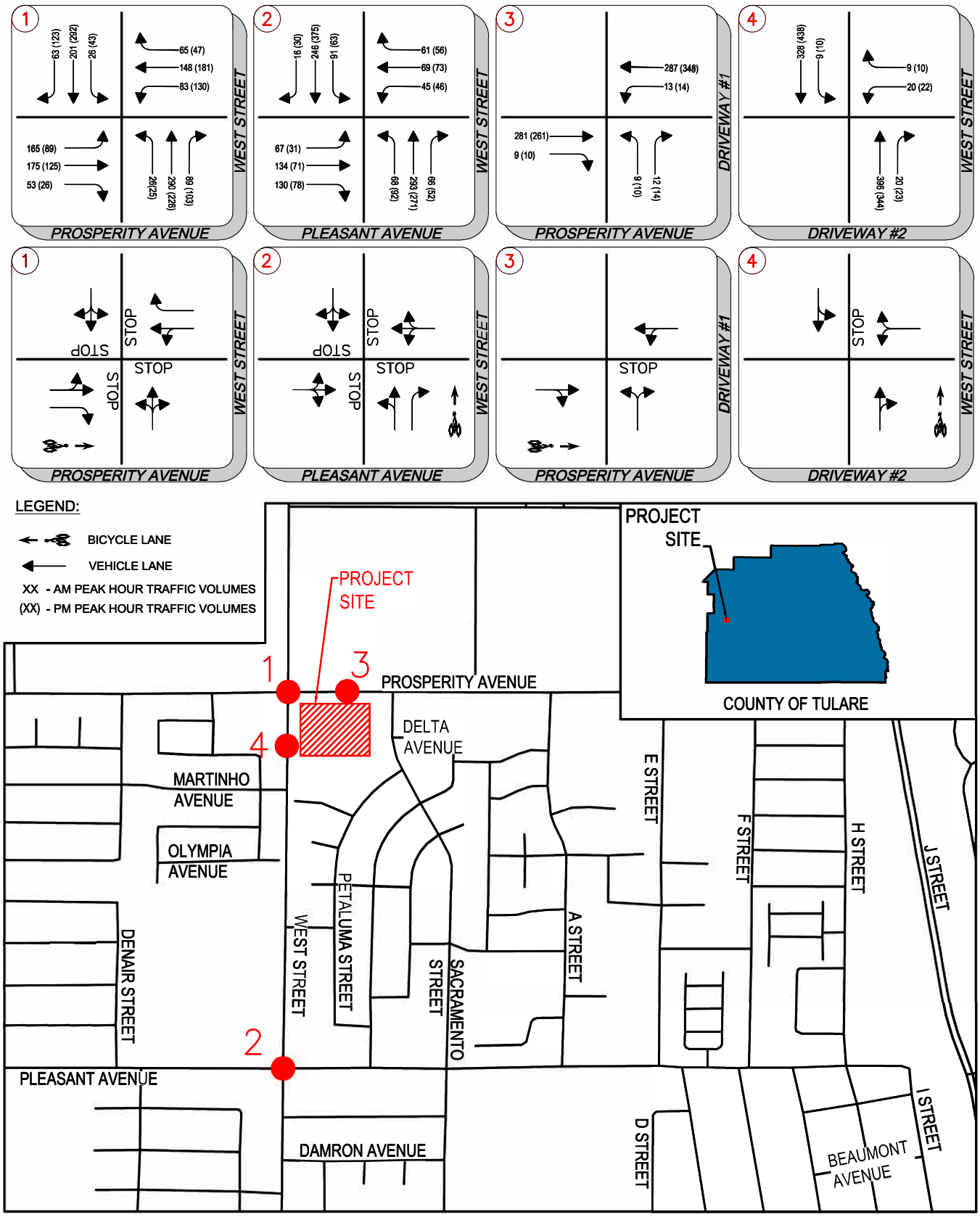
Existing plus Approved/Pending Projects plus Project weekday AM and PM peak hour intersection traffic operations were quantified by superimposing traffic generated by the proposed Project onto Existing plus Approved/Pending Projects conditions (reference Figure 6). Table 7.1 presents a summary of the Existing plus Approved/Pending Projects plus Project study intersection LOS conditions.

Table 7.1 – Existing plus Approved/Pending Projects plus Project Intersection Level of Service

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS[2]	Warrant Met?[3]	Delay	LOS[2]	Warrant Met?[3]
1	**Prosperity Avenue/West Street**	**AWSC**	**D**	**49.6**	**E**	**Yes**	**58.6**	**F**	**Yes**
2	**Pleasant Avenue /West Street**	**AWSC**	**D**	**31.4**	**D**	**Yes**	31.9	D	No
3	Prosperity Avenue/Driveway #1	TWSC	D	11.7	B	—	11.9	B	—
4	Driveway #2/West Street	TWSC	D	14.8	B	—	15.6	C	—

Notes:
1. TWSC = Two Way Stop Control; AWSC = All Way Stop Control
2. LOS = Delay based on worst minor approach for TWSC intersections; average of all approached for AWSC
3. Warrant = Based on California MUTCD Warrant 3, Dash (—) indicates no warrant analysis was conducted do to acceptable delay and LOS
*4. **Bold** = Unacceptable Conditions*

As presented in Table 7.1, two study intersections are projected to operate at unacceptable LOS "D" or worst conditions during AM and/or PM peak hour conditions. In addition, these stop-controlled intersections are projected to meet the California MUTCD Warrant 3 under Existing plus Approved/Pending Projects plus Project conditions.



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TRAFFIC IMPACT STUDY

EXISTING + APPROVED/PENDING PROJECTS + PROJECT LANE GEOMETRICS AND CONTROL AND PEAK HOUR TRAFFIC VOLUMES

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Date **09.19.19**

FIGURE 6

Filename: N:\US\Fresno\Projects\561\11197916\Digital_Design\Transportation\Tulare TIS.dwg Plot Date: 7 October 2019 - 10:05 AM

Source: Tulare County Resource Management Agency
County Streets
County Boundary

7. Cumulative (2040) Conditions

Year 2015 (base calibrated/validated) and 2040 daily traffic forecasts were provided by the Tulare County Association of Governments (TCAG). GHD developed future year (2040) traffic volumes utilizing the *TCAG Regional Travel Demand Forecast Model*, which uses *CUBE* software.

The latest General Plan land use and circulation elements are included in TCAG's future models. GHD used the Model's 2015 and 2040 (Cumulative) traffic forecasts to identify the incremental change in traffic volumes by approach and applied the factor to known traffic counts to predict 2040 traffic volumes. The count delta method forecasts adjustment is based upon the difference of recent counts from interpolation resulting from base and forecast year. Following this process, GHD checked the forecasted turning movements for reasonableness and made adjustments where necessary. For example, if the Model's forecasted volumes were lower than 1.5% annual growth rate, GHD adjusted these upward to reflect historical citywide population growth between 2007 and 2017.

7.1 Intersection Operations

Cumulative traffic volumes were forecasted and are shown in Figure 7. Table 7.1 presents a summary of the Cumulative study intersection LOS conditions.

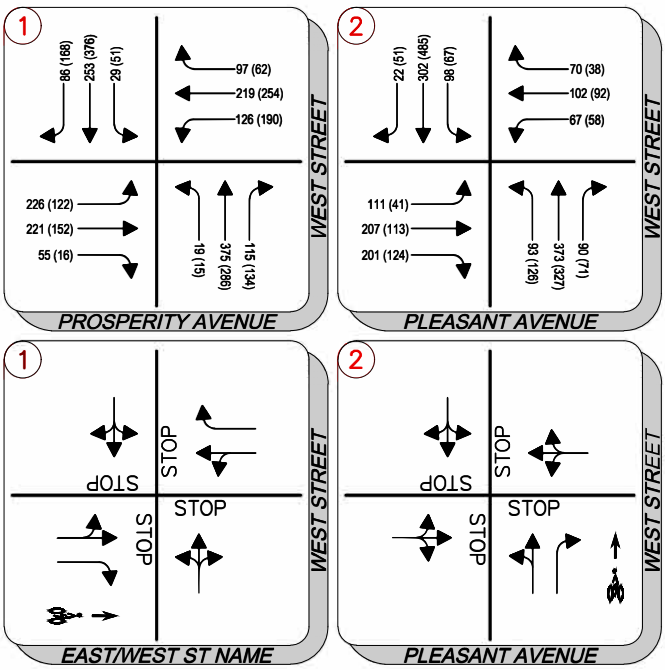
Table 7.1 – Cumulative Intersection Level of Service

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
1	**Prosperity Avenue/West Street**	**AWSC**	**D**	**160.9**	**F**	**Yes**	**191.0**	**F**	**Yes**
2	**Pleasant Avenue/West Street**	**AWSC**	**D**	**144.9**	**F**	**Yes**	**115.9**	**F**	**Yes**

Notes:
1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approached for AWSC
3. Warrant = Based on California MUTCD Warrant 3
*4. **Bold** = Unacceptable Conditions*

As shown in Table 7.1, the two study intersections are projected to operate at unacceptable LOS "F" or worst conditions under the Cumulative scenario. This is primarily a result of planned growth in Tulare that is anticipated to occur during the next 20 years. The all-way stop-controlled intersections are projected to meet the California MUTCD Peak Hour Warrant 3 standards for signalized intersections under Cumulative conditions.

Mitigation measures are discussed in a subsequent section of this report.



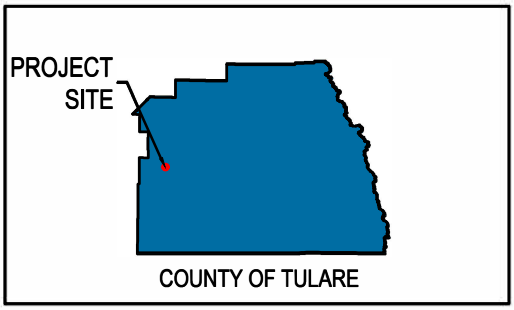
LEGEND:

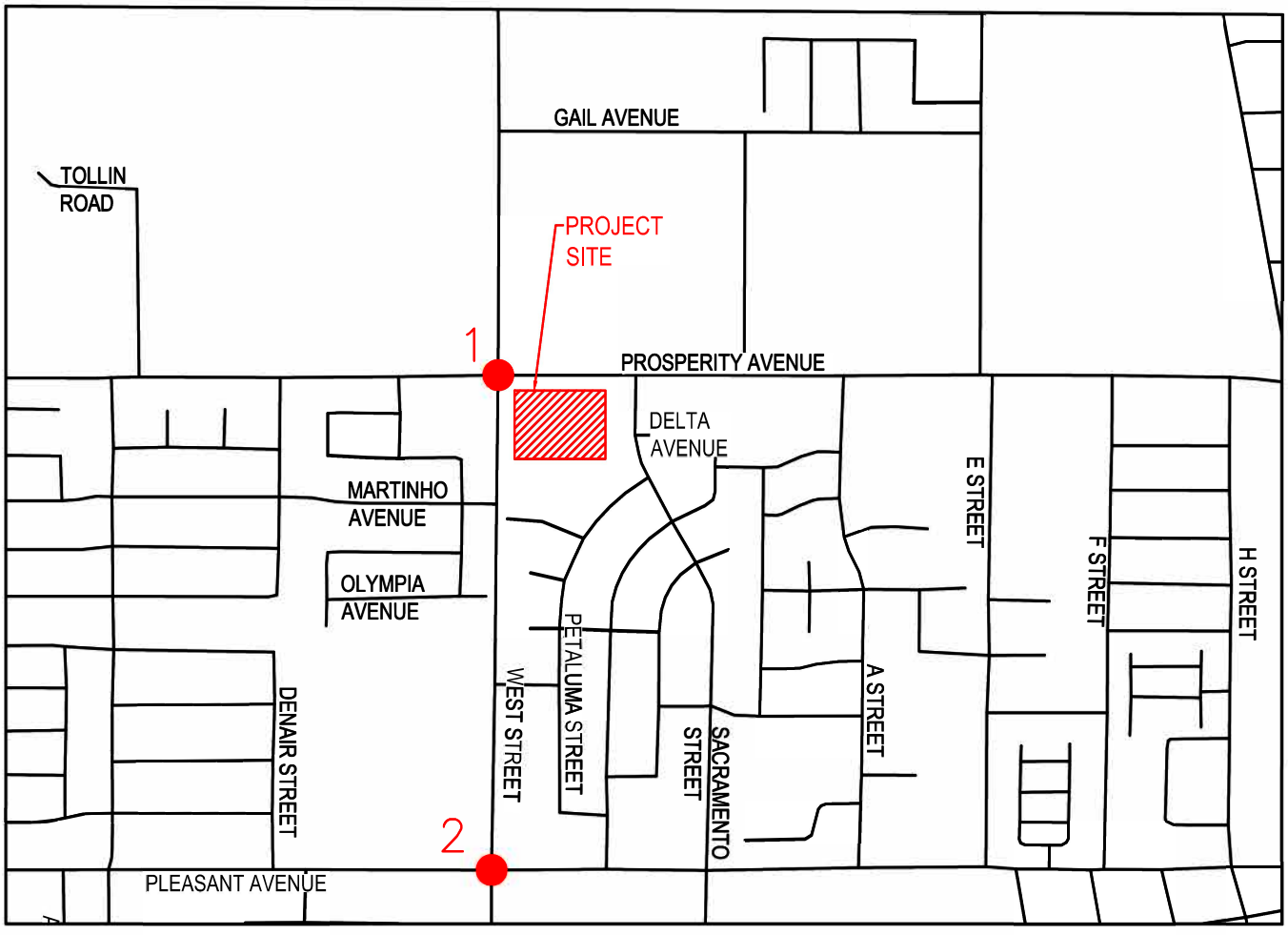
BICYCLE LANE

VEHICLE LANE

XX - AM PEAK HOUR TRAFFIC VOLUMES

(XX) - PM PEAK HOUR TRAFFIC VOLUMES





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TRAFFIC IMPACT STUDY

CUMULATIVE LANE GEOMETRICS AND CONTROL AND PEAK HOUR TRAFFIC VOLUMES

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Date 09.19.19

FIGURE 7

Filename: N:\US\Fresno\Projects\561\11197916\Digital_Design\Transportation\Tulare TIS.dwg Plot Date: 7 October 2019 - 10:09 AM

Source: Tulare County Resource Management Agency
County Streets
County Boundary

8. Cumulative plus Project Conditions

Cumulative plus Project conditions were simulated by superimposing traffic generated by the Project onto Cumulative base (2040) conditions and forecasted traffic volumes.

8.1 Cumulative plus Project Intersection Operations

Cumulative plus Project traffic volumes were forecasted and are shown in Figure 8. Table 8.1 presents Cumulative plus Project study intersection LOS conditions.

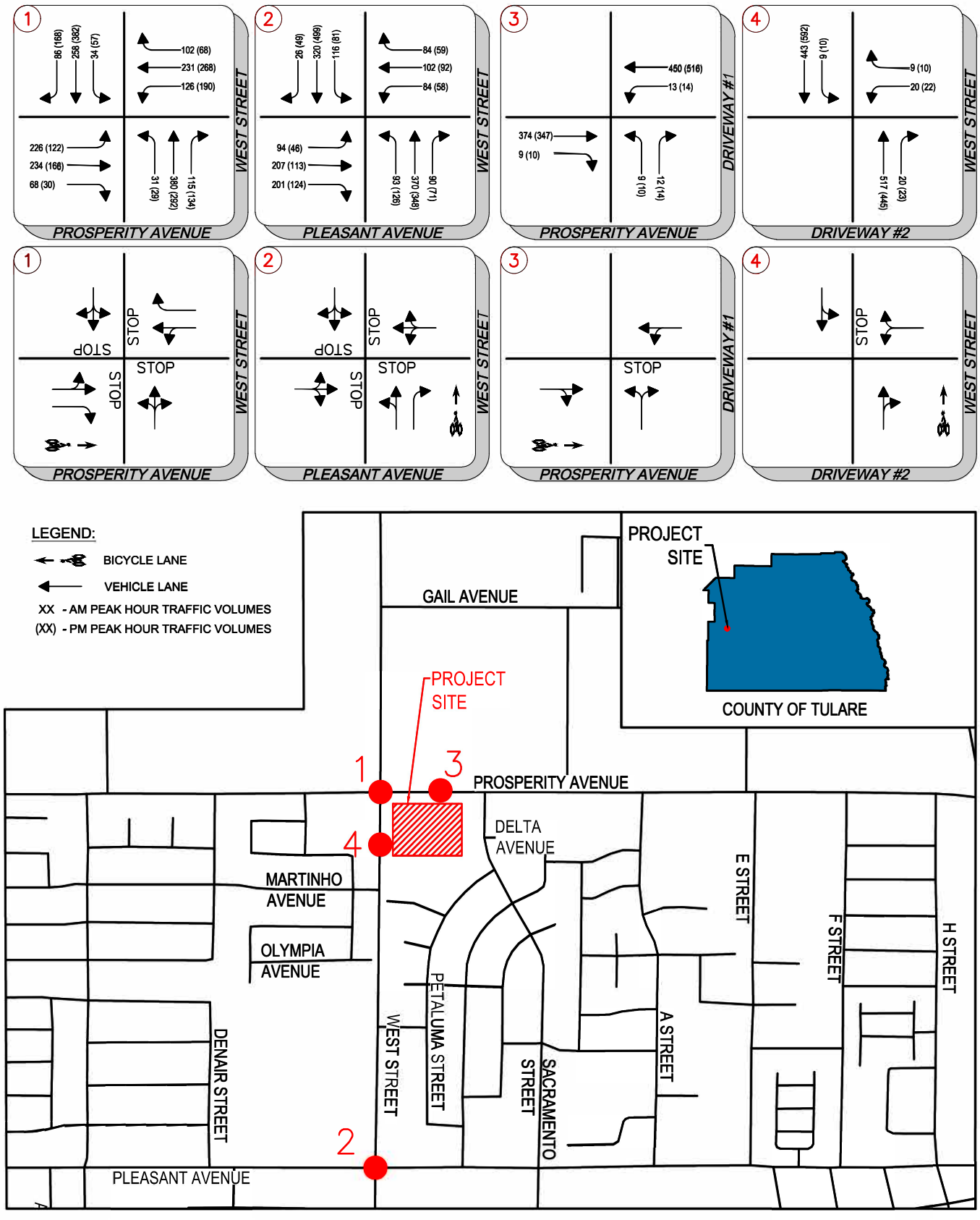
Table 8.1 – Cumulative plus Project Intersection Level of Service

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?[3]	Delay	LOS	Warrant Met?[3]
1	**Prosperity Avenue/West Street**	**AWSC**	**D**	**174.7**	**F**	**Yes**	**205.1**	**F**	**Yes**
2	**Pleasant Avenue/West Street**	**AWSC**	**D**	**158.9**	**F**	**Yes**	**140.9**	**F**	**Yes**
3	Prosperity Avenue/Driveway #1	TWSC	D	14.0	B	—	14.2	B	—
4	Driveway #2/West Street	TWSC	D	19.0	C	—	20.6	C	—

Notes:
1. AWSC = All Way Stop Control
2. LOS = Delay based on average of all approached for signal
3. Warrant = Based on California MUTCD Warrant 3, Dash (—) indicates no warrant analysis was conducted do to acceptable delay and LOS
*4. **Bold** = Unacceptable Conditions*

As indicated in Table 8.1, Intersection #1 (Prosperity Avenue/West Street) and Intersection #2 (Pleasant Avenue/West Street) are forecasted to operate at LOS "F" conditions under Cumulative plus Project conditions. Both of the intersections are also projected to meet the California MUTCD Peak Hour Warrant 3.

All mitigation measures are discussed in the following section of this report.



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CUMULATIVE + PROJECT LANE GEOMETRICS AND CONTROL AND PEAK TRAFFIC VOLUMES

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FIGURE 8

Filename: N:\US\Fresno\Projects\561\11197916\Digital_Design\Transportation\Tulare TIS.dwg Plot Date: 7 October 2019 - 10:19 AM

Source: Tulare County Resource Management Agency
County Streets
County Boundary

9. Recommended Mitigation Measures

This section presents a list of potential mitigation measures to be considered for the study intersections based upon the results of the analysis presented in this report. Mitigation measures have been developed for worst case scenarios to achieve acceptable LOS conditions. The study intersections are projected to operate at acceptable LOS conditions if recommended mitigation measures are implement. Figure 9 identifies Mitigated Lane Geometrics and Control. The following alternatives are described below:

For ***project driveways*** *(Intersection #3 and #4), b*ased upon comments received from the Planning Director's Review (Staff Report, March 5, 2012), the applicant must comply with conditions established by the Public Works/Engineering Department. According to the site plan, the driveways are shown to be full access (each driveway has one lane for ingress and one lane for egress) with 36' width.

9.1 Existing Conditions

Under *Existing Conditions*, two (2) intersections currently operate at unacceptable LOS "E" or worst conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn lanes . The left turn pockets are recommended to be a minimumum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS "F" conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS "A" with 6.6 seconds of delay. The delay is based upon existing PHF values as presented in the traffic count worksheets. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

Pleasant Avenue/West Street (#2): Install traffic signal. This intersection is forecasted to operate at LOS "E" conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to existing road geometrics and permitted phasing on all approaches, this intersection is forecasted to operate at LOS "A" with 8.7 seconds of delay.

#	Intersection	Control Type	Peak Hour[1]	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	AM	6.6 6.3[2]	A B
2	Pleasant Avenue/West Street	Signal	AM	8.7	A

1. Worst case scenario
2. With PHF of 0.92

9.2 Existing plus Approved/Pending Projects Conditions

Under *Existing plus Approve/Pending Project Conditions*, one (1) intersection is forecasted to operate at unacceptable LOS "E" or worst conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn channelization (turn lanes). The left turn pockets are recommended to be a minimumum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS "E" conditions during the PM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS "A" with 7.2 seconds of delay. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

#	Intersection	Control Type	Peak Hour[1]	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	PM	7.2	A

1. Worst case scenario

9.3 Existing plus Approved/Pending Projects plus Project Conditions

Under *Existing plus Approve/Pending plus Project Conditions*, two (2) intersections are projected to operate at unacceptable LOS "D" or worst conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn channelization (turn lanes). The left turn pockets are recommended to be a minimumum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS "F" conditions during the PM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS "A" with 7.9 seconds of delay. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

Pleasant Avenue/West Street (#2): Install traffic signal. This intersection is forecasted to operate at LOS "E" conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to existing road geometrics, this intersection is forecasted to operate at LOS "A" with 6.6 seconds of delay.

#	Intersection	Control Type	Peak Hour[1]	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	PM	7.9	A
2	Pleasant Avenue/West Street	Signal	AM	6.6	A

1. Worst case scenario

9.4 Cumulative (2040) Conditions

Under *Cumulative (2040) Conditions*, two (2) intersections are anticipated to operate at unacceptable LOS "E" or worst conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn channelization (turn lanes). The left turn pockets are recommended to be a minimumum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS "F" conditions during the PM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS "A" with 10.4 seconds of delay. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

Pleasant Avenue/West Street (#2): Install traffic signal. This intersection is forecasted to operate at LOS "F" conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to existing road geometrics, this intersection is forecasted to operate at LOS "B" with 18.9 seconds of delay.

#	Intersection	Control Type	Peak Hour[1]	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	PM	10.4	A
2	Pleasant Avenue/West Street	Signal	AM	18.9	B

1. Worst case scenario

9.5 Cumulative plus Project Conditions

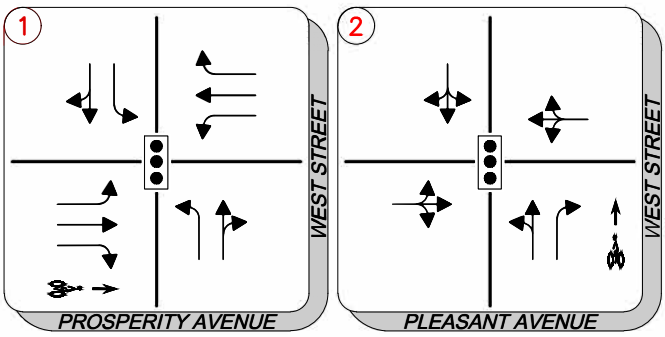
Under *Cumulative plus Project Conditions*, two (2) intersections are forecasted to operate at unacceptable LOS "F" conditions. As such the following mitigation measures are recommended.

Prosperity Avenue/West Street (#1): Install traffic signal and widen all approaches to include left-turn channelization (turn lanes). The left turn pockets are recommended to be a minimumum of 125 feet for EB and WB movements and a minimum of 100 feet for NB and SB movements. This intersection is forecasted to operate at LOS "F" conditions during the PM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to include left-turn lanes for all approaches, this intersection is forecasted to operate at LOS "B" with 13.2 seconds of delay. It should be noted that intersection improvements will include right-of-way impacts, particularly on the northwest corner, and utility pole relocations.

Pleasant Avenue/West Street (#2): Install traffic signal. This intersection is forecasted to operate at LOS "F" conditions during the AM peak hour (worst case scenario) and is anticipated to meet the CA MUTCD Warrant 3 (Peak Hour). With Installation of a traffic signal to existing road geometrics, this intersection is forecasted to operate at LOS "B" with 22.0 seconds of delay.

#	Intersection	Control Type	Peak Hour[1]	Delay (s)	LOS
1	Prosperity Avenue/West Street	Signal	PM	13.2	B
2	Pleasant Avenue/West Street	Signal	AM	22.0	B

1. Worst case scenario

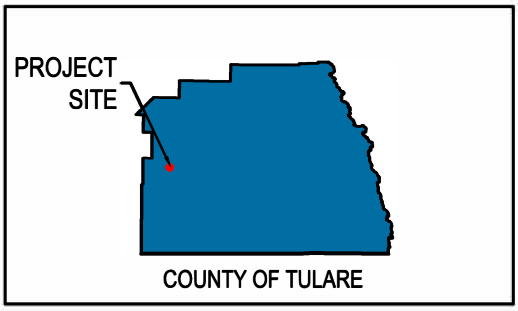


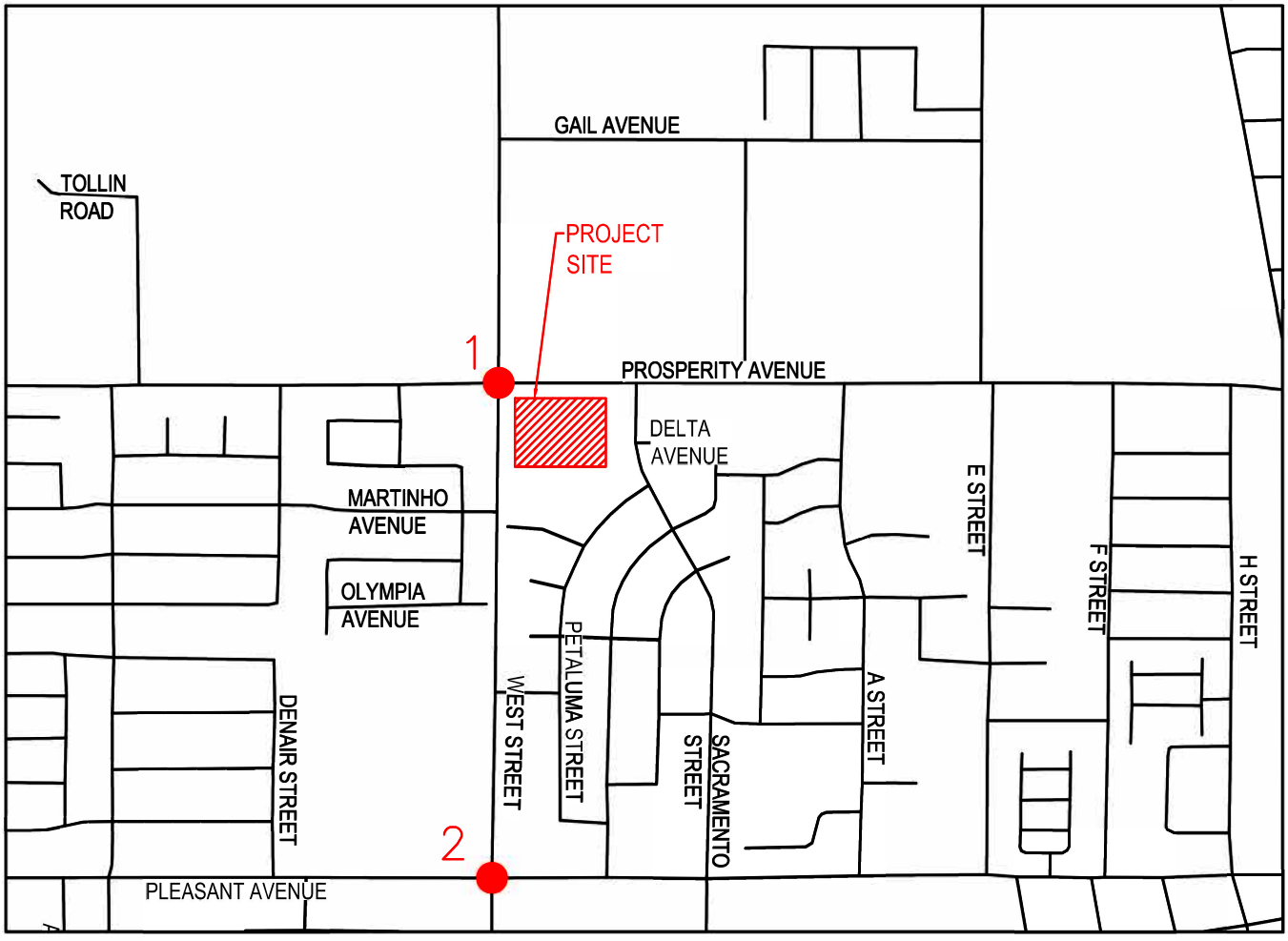
LEGEND:

BICYCLE LANE

VEHICLE LANE

TRAFFIC SIGNAL





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TAE Inc.
TRAFFIC IMPACT STUDY

MITIGATED LANE GEOMETRICS AND CONTROL

Project No. 11197916
Report No. 001
Date 09.19.19

FIGURE 9

Filename: N:\US\Fresno\Projects\561\11197916\Digital_Design\Transportation\Tulare TIS.dwg Plot Date: 20 September 2019 - 3:30 PM

Source: Tulare County Resource Management Agency
County Streets
County Boundary

10. Pro Rata Share

The project applicant is charged with all improvement costs identified in this report that would benefit the proposed project, i.e., "plus Project" impacts. In circumstances where a project proponent will be receiving a substantial benefit from the identified improvements, the project should take full responsibility toward providing the necessary infrastructure, as is the case with CEQA mitigation measures.[2]

Table 10.1 includes a worksheet that identifies the pro-rata share calculations (Weekday PM Peak Hour Pro-Rata Share Calculations) as documented in the Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002). The method for calculating equitable mitigation measures is as follows:

$$P=T/(T_B - T_E)$$

Where:

P = The equitable share for the proposed project's traffic impact.

T = The vehicle trips generated by the project during the peak hour of adjacent State highway facility in vehicles per hour (vph).

T_B = The forecasted traffic volume on a impacted State highway facility at the time of general plan build-out (e.g., 20 year model or the furthest future model date feasible), vph.

T_E = The traffic volume existing on the impacted State highway facility plus other approved projects that will generate traffic that has yet to be constructed/opened, vph.

[2] Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002).

Table 10.1: Pro Rata Share Calculations

#	Intersection	Project Trips (T)	Existing+Approved Pending Trips (T_E)	Forecasted Traffic Trips (T_B)	Pro Rata % (P)
1	Prosperity Avenue/West Street	80	1,330	1,827	16.1%
2	Pleasant Avenue/West Street	91	1,180	1,594	22.0%

As shown in Pro-Rata Share Calculations, the proposed project will generate a portion of PM peak hour trips that will contribute to the deficiencies identified in this report. Table 10.1 further breaks down pro-rata share percentages for each intersection. The intersection located on the southeast corner of Intersection #1 captures fewer project trips than Intersection #2. This a a result of driveway locations along West Street and Prosperity Avenue are fully accessible without the need to impact the movements at the intersection. According to the methodology described in the Caltrans *Guide for the Preparation of Traffic Impact Studies,* Table 10.1 is neither intended as nor does it establish a legal standard for determining equitable responsibility and cost of the project's traffic impact; the intent is to provide:

1. A starting point for early discussions to address traffic mitigation equitably;
2. A means for calculating the equitable share for mitigating traffic impacts; and
3. A means for establishing rough proportionality [Dolan vs. City of Tigard, 1994, 512 U.S. 374 (114 S. Ct. 2309)].

Appendix

Appendix A – AM and PM Peak Hour Traffic Counts

Appendix B – Synchro 10 Worksheet Output Files

Appendix C – California MUTCD Peak Hour Warrant 3 Worksheets

Appendix D – Mitigation Synchro 10 LOS Output Worksheets

Appendix A

AM and PM Peak Hour Traffic Counts

Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

GHD
30 River Park Place West Ste 220
Fresno, CA 93720

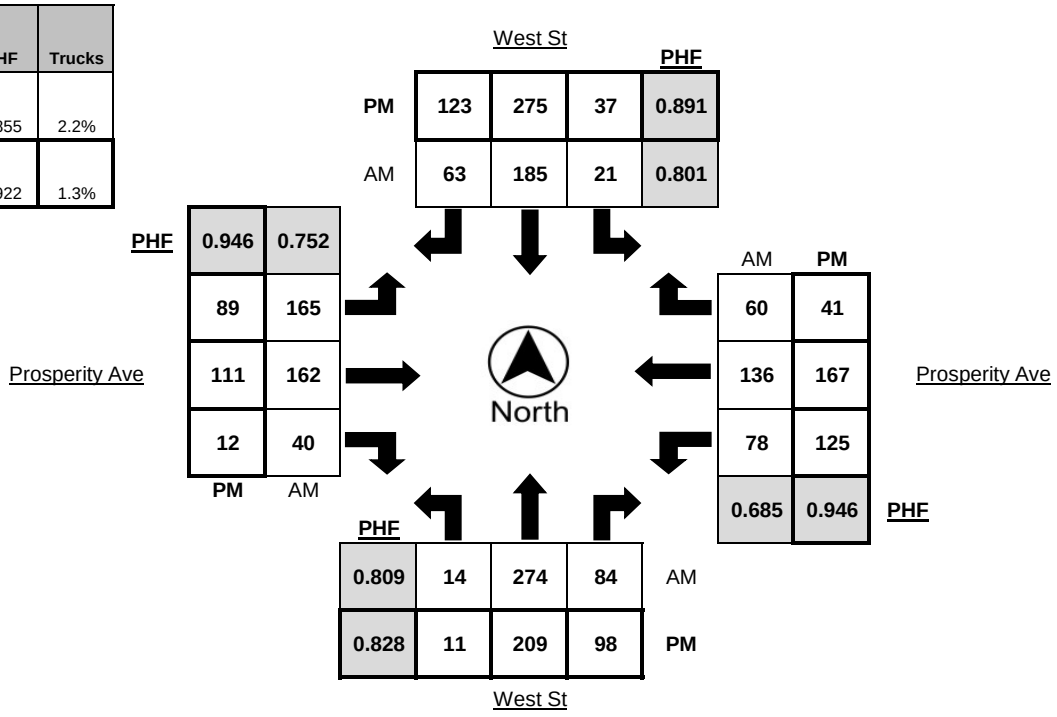
LOCATION West St @ Prosperity Ave
LATITUDE 36.2257
COUNTY Tulare
LONGITUDE -119.3667
COLLECTION DATE Thursday, September 05, 2019
WEATHER Clear

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:00 AM - 7:15 AM	1	58	5	1	3	18	10	1	31	24	1	0	6	14	9	2
7:15 AM - 7:30 AM	0	71	13	2	2	27	8	0	44	32	1	3	6	15	21	3
7:30 AM - 7:45 AM	6	89	20	2	2	41	12	0	50	45	7	1	14	29	15	2
7:45 AM - 8:00 AM	3	70	33	7	7	56	21	0	51	57	14	1	16	32	15	3
8:00 AM - 8:15 AM	2	54	17	3	5	53	17	1	36	37	10	0	29	52	19	2
8:15 AM - 8:30 AM	3	61	14	4	7	35	13	1	28	23	9	1	19	23	11	0
8:30 AM - 8:45 AM	1	58	17	0	3	25	2	1	34	19	2	0	14	15	13	1
8:45 AM - 9:00 AM	2	49	12	2	6	15	6	1	16	20	2	0	9	15	7	2
TOTAL	**18**	**510**	**131**	**21**	**35**	**270**	**89**	**5**	**290**	**257**	**46**	**6**	**113**	**195**	**110**	**15**

	Northbound				Southbound				Eastbound				Westbound			
Time	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
4:00 PM - 4:15 PM	7	51	15	1	7	69	21	0	17	21	5	1	27	40	7	3
4:15 PM - 4:30 PM	5	44	18	1	10	61	26	1	19	39	4	1	25	38	10	0
4:30 PM - 4:45 PM	5	50	19	2	11	70	23	5	21	35	7	0	26	39	6	1
4:45 PM - 5:00 PM	4	47	30	1	10	57	23	1	22	28	3	0	35	42	11	1
5:00 PM - 5:15 PM	1	46	18	2	10	64	34	1	20	27	4	0	27	44	8	0
5:15 PM - 5:30 PM	2	52	22	1	12	73	30	3	24	26	2	0	36	41	11	3
5:30 PM - 5:45 PM	4	64	28	2	5	81	36	1	23	30	3	0	27	40	11	1
5:45 PM - 6:00 PM	1	52	14	0	13	75	18	1	17	45	4	1	27	38	8	1
TOTAL	**29**	**406**	**164**	**10**	**78**	**550**	**211**	**13**	**163**	**251**	**32**	**3**	**230**	**322**	**72**	**10**

	Northbound				Southbound				Eastbound				Westbound			
PEAK HOUR	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**	**Left**	**Thru**	**Right**	**Trucks**
7:30 AM - 8:30 AM	14	274	84	16	21	185	63	2	165	162	40	3	78	136	60	7
4:45 PM - 5:45 PM	11	209	98	6	37	275	123	6	89	111	12	0	125	167	41	5

	PHF	Trucks
AM	0.855	2.2%
PM	0.922	1.3%



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230

800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:
GHD
30 River Park Place West Ste 220
Fresno, CA 93720

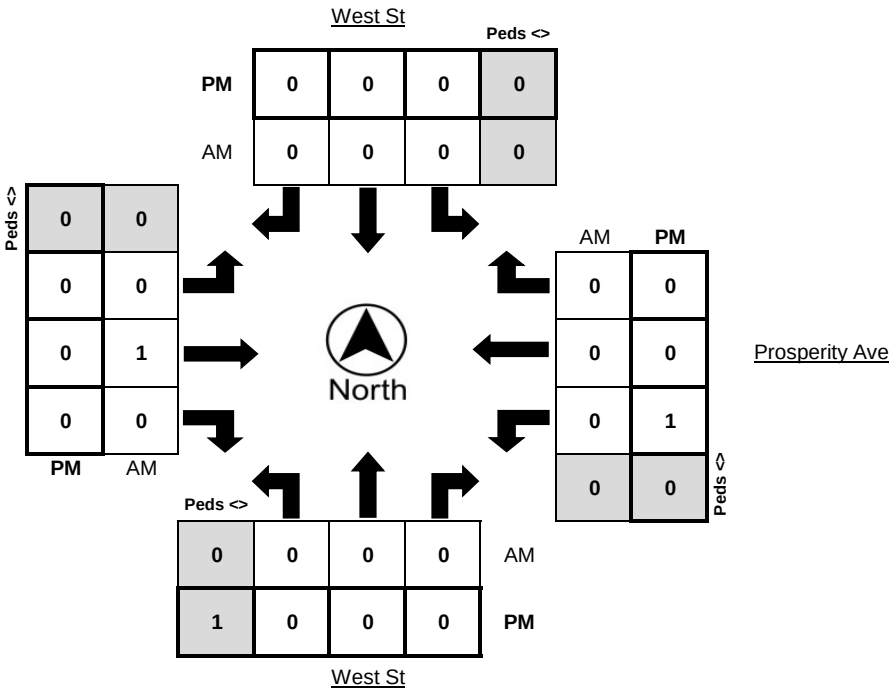
LOCATION West St @ Prosperity Ave
LATITUDE 36.2257
COUNTY Tulare
LONGITUDE -119.3667
COLLECTION DATE Thursday, September 05, 2019
WEATHER Clear

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:00 AM - 7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
4:00 PM - 4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**

	Northbound Bikes			N.Leg	Southbound Bikes			S.Leg	Eastbound Bikes			E.Leg	Westbound Bikes			W.Leg
PEAK HOUR	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
7:30 AM - 8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
4:45 PM - 5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0

	Bikes	Peds
AM Peak Total	1	0
PM Peak Total	1	1



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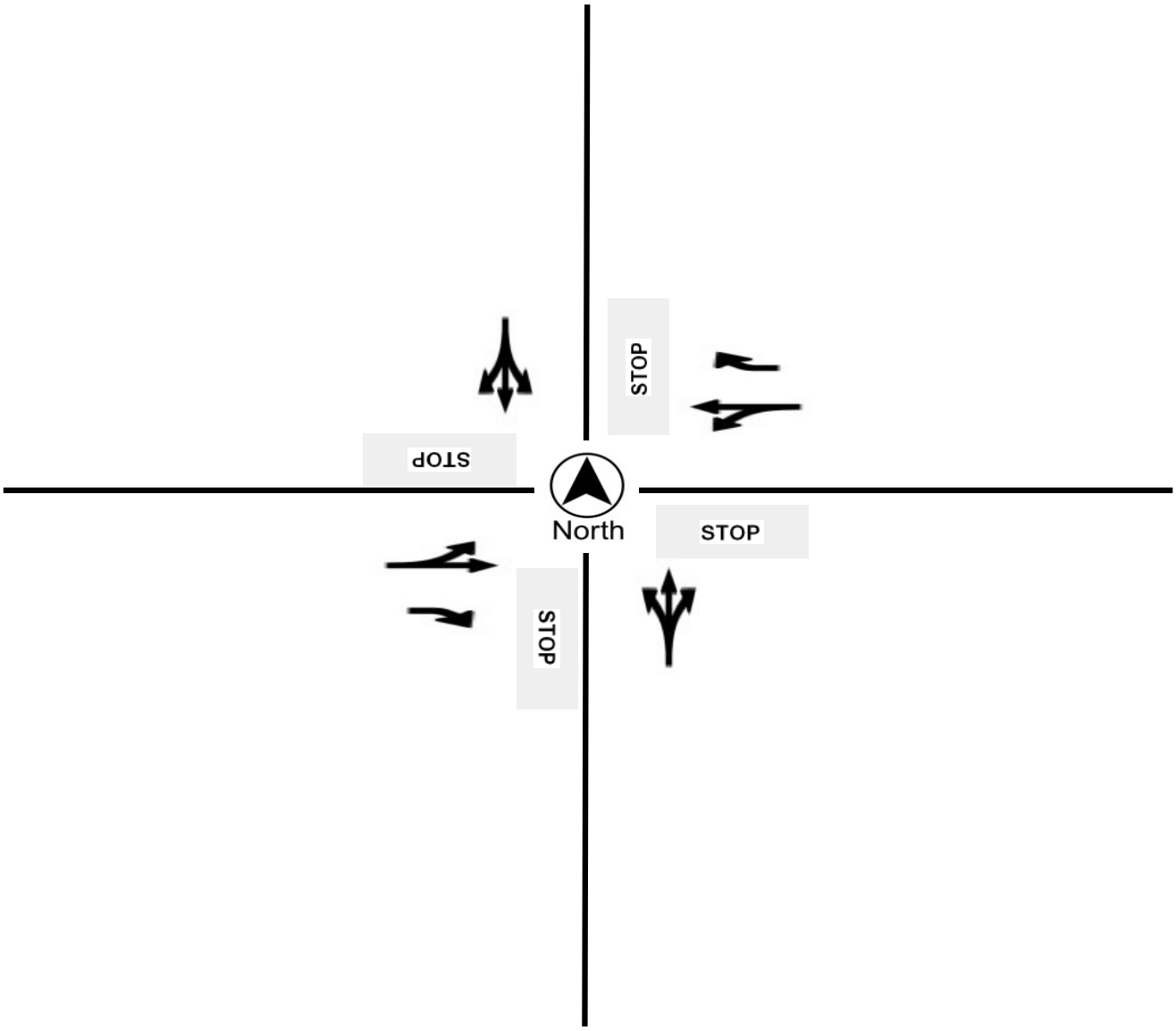
Turning Movement Report

Prepared For:

GHD
30 River Park Place West Ste 220
Fresno, CA 93720

LOCATION	West St @ Prosperity Ave	**N/S STREET**	West St
COUNTY	Tulare	**E/W STREET**	Prosperity Ave
COLLECTION DATE	Thursday, September 05, 2019	**WEATHER**	Clear
CYCLE TIME	N/A	**CONTROL TYPE**	All-Way Stop

COMMENTS



Next Section

HCS+: Unsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: Mark Hays
Agency/Co.: TCAG
Date Performed: 5/17/2017
Analysis Time Period: AM Peak
Intersection: Pleasant @ West
Jurisdiction: Tulare
Units: U. S. Customary
Analysis Year: 2017
Project ID: 2017 Intersection Monitoring
East/West Street: Pleasant Ave
North/South Street: West St

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	72	134	130	45	69	47	68	273	66	72	221	16
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LTR	
PHF	0.76		0.73		0.89	0.89	0.91	
Flow Rate	441		219		382	74	338	
% Heavy Veh	2		2		2	2	2	
No. Lanes	1		1		2		1	
Opposing-Lanes	1		1		1		2	
Conflicting-lanes	2		2		1		1	
Geometry group	2		2		5		4a	
Duration, T 0.25 hrs.								

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	441		219		382	74	338	
Left-Turn	94		61		76	0	79	
Right-Turn	171		64		0	74	17	
Prop. Left-Turns	0.2		0.3		0.2	0.0	0.2	
Prop. Right-Turns	0.4		0.3		0.0	1.0	0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	
Geometry Group	2		2		5		4a	
Adjustments Exhibit 17-33:								
hLT-adj	0.2		0.2		0.5		0.2	

hRT-adj	-0.6		-0.6		-0.7		-0.6	
hHV-adj	1.7		1.7		1.7		1.7	
hadj, computed	-0.2		-0.1		0.1	-0.7	0.1	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	441		219		382	74	338	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.39		0.19		0.34	0.07	0.30	
hd, final value	7.80		8.84		8.60	7.76	8.48	
x, final value	0.955		0.538		0.912	0.160	0.796	
Move-up time, m	2.0		2.0		2.3		2.0	
Service Time	5.8		6.8		6.3	5.5	6.5	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	441		219		382	74	338	
Service Time	5.8		6.8		6.3	5.5	6.5	
Utilization, x	0.955		0.538		0.912	0.160	0.796	
Dep. headway, hd	7.80		8.84		8.60	7.76	8.48	
Capacity	459		406		420	463	423	
95% Queue Length	11.6		3.1		9.9	0.6	7.1	
Delay	59.5		21.7		54.1	11.9	37.3	
LOS	F		C		F	B	E	
Approach:								
Delay	59.5		21.7		47.3		37.3	
LOS	F		C		E		E	
Intersection Delay	44.8		Intersection LOS E					

HCS+: Umsignalized Intersections Release 5.6

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: Mark Hays
Agency/Co.: TCAG
Date Performed: 5/17/2017
Analysis Time Period: PM Peak
Intersection: Pleasant @ West
Jurisdiction: Tulare
Units: U. S. Customary
Analysis Year: 2017
Project ID: 2017 Intersection Monitoring
East/West Street: Pleasant Ave
North/South Street: West St

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	26	71	78	46	73	30	92	239	52	49	355	37
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LT	R	LTR	
PHF	0.91		0.81		0.83	0.83	0.91	
Flow Rate	191		183		397	62	483	
% Heavy Veh	2		2		2	2	2	
No. Lanes	1		1		2		1	
Opposing-Lanes	1		1		1		2	
Conflicting-lanes	2		2		1		1	
Geometry group	2		2		5		4a	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	191		183		397	62	483	
Left-Turn	28		56		110	0	53	
Right-Turn	85		37		0	62	40	
Prop. Left-Turns	0.1		0.3		0.3	0.0	0.1	
Prop. Right-Turns	0.4		0.2		0.0	1.0	0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	
Geometry Group	2		2		5		4a	
Adjustments Exhibit 17-33:								
hLT-adj	0.2		0.2		0.5		0.2	

hRT-adj	-0.6		-0.6		-0.7		-0.6	
hHV-adj	1.7		1.7		1.7		1.7	
hadj, computed	-0.2		-0.0		0.2	-0.7	0.0	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	191		183		397	62	483	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.17		0.16		0.35	0.06	0.43	
hd, final value	7.27		7.47		7.05	6.19	6.44	
x, final value	0.386		0.380		0.777	0.107	0.865	
Move-up time, m	2.0		2.0		2.3		2.0	
Service Time	5.3		5.5		4.7	3.9	4.4	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	191		183		397	62	483	
Service Time	5.3		5.5		4.7	3.9	4.4	
Utilization, x	0.386		0.380		0.777	0.107	0.865	
Dep. headway, hd	7.27		7.47		7.05	6.19	6.44	
Capacity	490		482		509	564	562	
95% Queue Length	1.8		1.8		7.0	0.4	9.5	
Delay	14.8		15.0-		30.2	9.6	37.6	
LOS	B		B		D	A	E	
Approach:								
Delay	14.8		15.0-		27.4		37.6	
LOS	B		B		D		E	
Intersection Delay	27.6		Intersection LOS D					

Appendix B

Synchro 10 LOS Output Worksheets

Existing Conditions

Intersection	
Intersection Delay, s/veh	81
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	165	162	40	78	136	60	14	274	84	21	185	63
Future Vol, veh/h	165	162	40	78	136	60	14	274	84	21	185	63
Peak Hour Factor	0.75	0.75	0.75	0.69	0.69	0.69	0.81	0.81	0.81	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	220	216	53	113	197	87	17	338	104	26	231	79
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	106.5	39.7	112.6	49.4
HCM LOS	F	E	F	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	50%	0%	36%	0%	8%
Vol Thru, %	74%	50%	0%	64%	0%	69%
Vol Right, %	23%	0%	100%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	372	327	40	214	60	269
LT Vol	14	165	0	78	0	21
Through Vol	274	162	0	136	0	185
RT Vol	84	0	40	0	60	63
Lane Flow Rate	459	436	53	310	87	336
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.12	1.128	0.124	0.822	0.209	0.849
Departure Headway (Hd)	9.228	9.9	8.898	10.375	9.442	9.947
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	395	371	405	350	383	367
Service Time	7.228	7.6	6.598	8.075	7.142	7.947
HCM Lane V/C Ratio	1.162	1.175	0.131	0.886	0.227	0.916
HCM Control Delay	112.6	117.9	12.9	46.8	14.6	49.4
HCM Lane LOS	F	F	B	E	B	E
HCM 95th-tile Q	16.1	15.6	0.4	7.2	0.8	7.8

Intersection	
Intersection Delay, s/veh	43.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	134	130	45	69	47	68	273	66	72	221	16
Future Vol, veh/h	72	134	130	45	69	47	68	273	66	72	221	16
Peak Hour Factor	0.76	0.76	0.76	0.73	0.73	0.73	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	95	176	171	62	95	64	76	307	74	79	243	18
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	58.1	21.7	45.8	37.3
HCM LOS	F	C	E	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	0%	21%	28%	23%
Vol Thru, %	80%	0%	40%	43%	72%
Vol Right, %	0%	100%	39%	29%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	341	66	336	161	309
LT Vol	68	0	72	45	72
Through Vol	273	0	134	69	221
RT Vol	0	66	130	47	16
Lane Flow Rate	383	74	442	221	340
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.903	0.158	0.948	0.54	0.797
Departure Headway (Hd)	8.585	7.756	7.829	8.815	8.455
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	425	465	469	410	431
Service Time	6.285	5.456	5.829	6.838	6.455
HCM Lane V/C Ratio	0.901	0.159	0.942	0.539	0.789
HCM Control Delay	52.4	11.9	58.1	21.7	37.3
HCM Lane LOS	F	B	F	C	E
HCM 95th-tile Q	9.6	0.6	11.4	3.1	7.1

Intersection	
Intersection Delay, s/veh	46.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	89	111	12	125	167	41	11	209	98	37	275	123
Future Vol, veh/h	89	111	12	125	167	41	11	209	98	37	275	123
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.83	0.83	0.83	0.89	0.89	0.89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	94	117	13	132	176	43	13	252	118	42	309	138
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	21.8	30.7	38.5	76.2
HCM LOS	C	D	E	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	45%	0%	43%	0%	9%
Vol Thru, %	66%	55%	0%	57%	0%	63%
Vol Right, %	31%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	318	200	12	292	41	435
LT Vol	11	89	0	125	0	37
Through Vol	209	111	0	167	0	275
RT Vol	98	0	12	0	41	123
Lane Flow Rate	383	211	13	307	43	489
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.826	0.535	0.029	0.743	0.094	1.028
Departure Headway (Hd)	7.881	9.418	8.451	8.957	8.002	7.574
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	464	385	426	406	451	484
Service Time	5.881	7.118	6.151	6.657	5.702	5.536
HCM Lane V/C Ratio	0.825	0.548	0.031	0.756	0.095	1.01
HCM Control Delay	38.5	22.4	11.4	33.4	11.5	76.2
HCM Lane LOS	E	C	B	D	B	F
HCM 95th-tile Q	7.9	3	0.1	5.9	0.3	14.4

Intersection	
Intersection Delay, s/veh	27.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	71	78	46	73	30	92	239	52	49	355	37
Future Vol, veh/h	26	71	78	46	73	30	92	239	52	49	355	37
Peak Hour Factor	0.91	0.91	0.91	0.81	0.81	0.81	0.83	0.83	0.83	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	78	86	57	90	37	111	288	63	54	390	41
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	14.8	15	27	36.7
HCM LOS	B	B	D	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	0%	15%	31%	11%
Vol Thru, %	72%	0%	41%	49%	80%
Vol Right, %	0%	100%	45%	20%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	331	52	175	149	441
LT Vol	92	0	26	46	49
Through Vol	239	0	71	73	355
RT Vol	0	52	78	30	37
Lane Flow Rate	399	63	192	184	485
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.772	0.106	0.384	0.378	0.858
Departure Headway (Hd)	6.965	6.107	7.194	7.392	6.373
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	518	583	496	484	567
Service Time	4.743	3.884	5.292	5.49	4.448
HCM Lane V/C Ratio	0.77	0.108	0.387	0.38	0.855
HCM Control Delay	29.7	9.6	14.8	15	36.7
HCM Lane LOS	D	A	B	B	E
HCM 95th-tile Q	6.9	0.4	1.8	1.7	9.3

Existing+Approve Pending Conditions

Intersection	
Intersection Delay, s/veh	37
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	165	162	40	83	136	60	14	285	89	21	196	63
Future Vol, veh/h	165	162	40	83	136	60	14	285	89	21	196	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	179	176	43	90	148	65	15	310	97	23	213	68
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	41.9	21.6	50.1	27.8
HCM LOS	E	C	F	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	50%	0%	38%	0%	7%
Vol Thru, %	73%	50%	0%	62%	0%	70%
Vol Right, %	23%	0%	100%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	388	327	40	219	60	280
LT Vol	14	165	0	83	0	21
Through Vol	285	162	0	136	0	196
RT Vol	89	0	40	0	60	63
Lane Flow Rate	422	355	43	238	65	304
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.907	0.857	0.093	0.595	0.146	0.692
Departure Headway (Hd)	7.743	8.68	7.689	9.004	8.075	8.189
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	468	416	465	400	443	441
Service Time	5.801	6.44	5.448	6.771	5.841	6.258
HCM Lane V/C Ratio	0.902	0.853	0.092	0.595	0.147	0.689
HCM Control Delay	50.1	45.6	11.2	24.2	12.2	27.8
HCM Lane LOS	F	E	B	C	B	D
HCM 95th-tile Q	10.1	8.4	0.3	3.7	0.5	5.2

Intersection	
Intersection Delay, s/veh	26.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	134	130	45	69	52	68	284	66	77	232	16
Future Vol, veh/h	72	134	130	45	69	52	68	284	66	77	232	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	146	141	49	75	57	74	309	72	84	252	17
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	26.7	16	31.2	27
HCM LOS	D	C	D	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	0%	21%	27%	24%
Vol Thru, %	81%	0%	40%	42%	71%
Vol Right, %	0%	100%	39%	31%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	352	66	336	166	325
LT Vol	68	0	72	45	77
Through Vol	284	0	134	69	232
RT Vol	0	66	130	52	16
Lane Flow Rate	383	72	365	180	353
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.806	0.135	0.722	0.393	0.718
Departure Headway (Hd)	7.58	6.761	7.116	7.843	7.317
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	478	529	508	456	491
Service Time	5.345	4.525	5.18	5.927	5.386
HCM Lane V/C Ratio	0.801	0.136	0.719	0.395	0.719
HCM Control Delay	35.1	10.6	26.7	16	27
HCM Lane LOS	E	B	D	C	D
HCM 95th-tile Q	7.5	0.5	5.8	1.8	5.7

Intersection	
Intersection Delay, s/veh	47.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	89	111	12	130	167	41	11	220	103	37	286	123
Future Vol, veh/h	89	111	12	130	167	41	11	220	103	37	286	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	97	121	13	141	182	45	12	239	112	40	311	134
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	22.6	34	36.1	78.4
HCM LOS	C	D	E	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	45%	0%	44%	0%	8%
Vol Thru, %	66%	55%	0%	56%	0%	64%
Vol Right, %	31%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	334	200	12	297	41	446
LT Vol	11	89	0	130	0	37
Through Vol	220	111	0	167	0	286
RT Vol	103	0	12	0	41	123
Lane Flow Rate	363	217	13	323	45	485
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.799	0.554	0.03	0.781	0.098	1.034
Departure Headway (Hd)	8.051	9.468	8.501	8.982	8.022	7.678
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	454	383	424	407	449	480
Service Time	6.051	7.168	6.201	6.682	5.722	5.636
HCM Lane V/C Ratio	0.8	0.567	0.031	0.794	0.1	1.01
HCM Control Delay	36.1	23.3	11.5	37.1	11.6	78.4
HCM Lane LOS	E	C	B	E	B	F
HCM 95th-tile Q	7.2	3.2	0.1	6.7	0.3	14.6

Intersection	
Intersection Delay, s/veh	25
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	71	78	46	73	35	92	250	52	54	366	37
Future Vol, veh/h	26	71	78	46	73	35	92	250	52	54	366	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	77	85	50	79	38	100	272	57	59	398	40
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	14.2	14	22.4	35.2
HCM LOS	B	B	C	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	0%	15%	30%	12%
Vol Thru, %	73%	0%	41%	47%	80%
Vol Right, %	0%	100%	45%	23%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	342	52	175	154	457
LT Vol	92	0	26	46	54
Through Vol	250	0	71	73	366
RT Vol	0	52	78	35	37
Lane Flow Rate	372	57	190	167	497
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.705	0.094	0.37	0.336	0.853
Departure Headway (Hd)	6.832	5.979	6.998	7.233	6.179
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	528	596	512	495	586
Service Time	4.598	3.745	5.075	5.314	4.239
HCM Lane V/C Ratio	0.705	0.096	0.371	0.337	0.848
HCM Control Delay	24.4	9.4	14.2	14	35.2
HCM Lane LOS	C	A	B	B	E
HCM 95th-tile Q	5.6	0.3	1.7	1.5	9.3

Existing+Approve Pending+Project Conditions

Intersection	
Intersection Delay, s/veh	49.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	165	175	53	83	148	65	26	290	89	26	201	63
Future Vol, veh/h	165	175	53	83	148	65	26	290	89	26	201	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	179	190	58	90	161	71	28	315	97	28	218	68
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	52.8	25.3	75.1	34.5
HCM LOS	F	D	F	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	6%	49%	0%	36%	0%	9%
Vol Thru, %	72%	51%	0%	64%	0%	69%
Vol Right, %	22%	0%	100%	0%	100%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	405	340	53	231	65	290
LT Vol	26	165	0	83	0	26
Through Vol	290	175	0	148	0	201
RT Vol	89	0	53	0	65	63
Lane Flow Rate	440	370	58	251	71	315
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.011	0.925	0.129	0.654	0.167	0.756
Departure Headway (Hd)	8.267	9.212	8.226	9.589	8.665	8.839
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	440	395	438	379	417	413
Service Time	6.266	6.912	5.926	7.289	6.365	6.839
HCM Lane V/C Ratio	1	0.937	0.132	0.662	0.17	0.763
HCM Control Delay	75.1	59.2	12.1	28.7	13.1	34.5
HCM Lane LOS	F	F	B	D	B	D
HCM 95th-tile Q	13.2	10	0.4	4.5	0.6	6.2

Intersection	
Intersection Delay, s/veh	31.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	134	130	45	69	61	68	293	66	91	246	16
Future Vol, veh/h	67	134	130	45	69	61	68	293	66	91	246	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	146	141	49	75	66	74	318	72	99	267	17
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	28.8	17.4	36.5	34.5
HCM LOS	D	C	E	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	0%	20%	26%	26%
Vol Thru, %	81%	0%	40%	39%	70%
Vol Right, %	0%	100%	39%	35%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	361	66	331	175	353
LT Vol	68	0	67	45	91
Through Vol	293	0	134	69	246
RT Vol	0	66	130	61	16
Lane Flow Rate	392	72	360	190	384
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.849	0.139	0.739	0.434	0.799
Departure Headway (Hd)	7.791	6.972	7.394	8.211	7.497
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	463	511	486	441	480
Service Time	5.584	4.765	5.489	6.211	5.596
HCM Lane V/C Ratio	0.847	0.141	0.741	0.431	0.8
HCM Control Delay	41.2	10.9	28.8	17.4	34.5
HCM Lane LOS	E	B	D	C	D
HCM 95th-tile Q	8.5	0.5	6.1	2.2	7.4

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	281	9	13	287	9	12
Future Vol, veh/h	281	9	13	287	9	12
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	305	10	14	312	10	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	315	0	650	310
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	340	-
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	-	-	1245	-	434	730
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	721	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1245	-	428	730
Mov Cap-2 Maneuver	-	-	-	-	428	-
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	721	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	561	-	-	1245	-
HCM Lane V/C Ratio	0.041	-	-	0.011	-
HCM Control Delay (s)	11.7	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	9	396	20	9	328
Future Vol, veh/h	20	9	396	20	9	328
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	22	10	430	22	10	357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	818	441	0	0	452	0
Stage 1	441	-	-	-	-	-
Stage 2	377	-	-	-	-	-
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	346	616	-	-	1109	-
Stage 1	648	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	342	616	-	-	1109	-
Mov Cap-2 Maneuver	342	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	694	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	397	1109	-
HCM Lane V/C Ratio	-	-	0.079	0.009	-
HCM Control Delay (s)	-	-	14.8	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Intersection Delay, s/veh	58.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	89	125	26	130	181	47	25	226	103	43	292	123
Future Vol, veh/h	89	125	26	130	181	47	25	226	103	43	292	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	97	136	28	141	197	51	27	246	112	47	317	134
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	24.7	40.3	46.1	100.4
HCM LOS	C	E	E	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	7%	42%	0%	42%	0%	9%
Vol Thru, %	64%	58%	0%	58%	0%	64%
Vol Right, %	29%	0%	100%	0%	100%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	354	214	26	311	47	458
LT Vol	25	89	0	130	0	43
Through Vol	226	125	0	181	0	292
RT Vol	103	0	26	0	47	123
Lane Flow Rate	385	233	28	338	51	498
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.865	0.601	0.066	0.834	0.113	1.1
Departure Headway (Hd)	8.476	9.812	8.856	9.325	8.372	7.955
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	431	370	407	392	431	458
Service Time	6.476	7.512	6.556	7.025	6.072	6.021
HCM Lane V/C Ratio	0.893	0.63	0.069	0.862	0.118	1.087
HCM Control Delay	46.1	26.2	12.2	44.6	12.1	100.4
HCM Lane LOS	E	D	B	E	B	F
HCM 95th-tile Q	8.7	3.8	0.2	7.7	0.4	16.7

Intersection	
Intersection Delay, s/veh	31.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	71	78	46	73	56	92	271	52	63	375	30
Future Vol, veh/h	31	71	78	46	73	56	92	271	52	63	375	30
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	34	77	85	50	79	61	100	295	57	68	408	33
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	15.4	15.5	28.6	47.2
HCM LOS	C	C	D	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	0%	17%	26%	13%
Vol Thru, %	75%	0%	39%	42%	80%
Vol Right, %	0%	100%	43%	32%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	363	52	180	175	468
LT Vol	92	0	31	46	63
Through Vol	271	0	71	73	375
RT Vol	0	52	78	56	30
Lane Flow Rate	395	57	196	190	509
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.785	0.099	0.402	0.397	0.923
Departure Headway (Hd)	7.158	6.31	7.405	7.505	6.532
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	509	570	485	477	560
Service Time	4.876	4.028	5.471	5.572	4.548
HCM Lane V/C Ratio	0.776	0.1	0.404	0.398	0.909
HCM Control Delay	31.3	9.7	15.4	15.5	47.2
HCM Lane LOS	D	A	C	C	E
HCM 95th-tile Q	7.2	0.3	1.9	1.9	11.4

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	261	10	14	348	10	14
Future Vol, veh/h	261	10	14	348	10	14
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	284	11	15	378	11	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	295	0	698	290
Stage 1	-	-	-	-	290	-
Stage 2	-	-	-	-	408	-
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	-	-	1266	-	407	749
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1266	-	401	749
Mov Cap-2 Maneuver	-	-	-	-	401	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	671	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	550	-	-	1266	-
HCM Lane V/C Ratio	0.047	-	-	0.012	-
HCM Control Delay (s)	11.9	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	10	344	23	10	438
Future Vol, veh/h	22	10	344	23	10	438
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	11	374	25	11	476

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	885	387	0	0	399	0
Stage 1	387	-	-	-	-	-
Stage 2	498	-	-	-	-	-
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	315	661	-	-	1160	-
Stage 1	686	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	311	661	-	-	1160	-
Mov Cap-2 Maneuver	311	-	-	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	611	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	373	1160	-
HCM Lane V/C Ratio	-	-	0.093	0.009	-
HCM Control Delay (s)	-	-	15.6	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Cumulative Conditions

Intersection	
Intersection Delay, s/veh	160.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	226	221	55	126	219	97	19	375	115	29	253	86
Future Vol, veh/h	226	221	55	126	219	97	19	375	115	29	253	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	246	240	60	137	238	105	21	408	125	32	275	93
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	185.2	78	250.1	103.8
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	51%	0%	37%	0%	8%
Vol Thru, %	74%	49%	0%	63%	0%	69%
Vol Right, %	23%	0%	100%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	509	447	55	345	97	368
LT Vol	19	226	0	126	0	29
Through Vol	375	221	0	219	0	253
RT Vol	115	0	55	0	97	86
Lane Flow Rate	553	486	60	375	105	400
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.459	1.347	0.15	1.024	0.262	1.055
Departure Headway (Hd)	10.725	11.407	10.393	12.078	11.134	11.995
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	343	321	347	304	325	308
Service Time	8.725	9.107	8.093	9.778	8.834	9.995
HCM Lane V/C Ratio	1.612	1.514	0.173	1.234	0.323	1.299
HCM Control Delay	250.1	206.2	14.9	95	17.7	103.8
HCM Lane LOS	F	F	B	F	C	F
HCM 95th-tile Q	26.3	21.2	0.5	11.2	1	12

Intersection	
Intersection Delay, s/veh	144.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	207	201	67	102	70	93	373	90	98	302	22
Future Vol, veh/h	111	207	201	67	102	70	93	373	90	98	302	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	225	218	73	111	76	101	405	98	107	328	24
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	201.5	37.1	153.8	124.8
HCM LOS	F	E	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	0%	21%	28%	23%
Vol Thru, %	80%	0%	40%	43%	72%
Vol Right, %	0%	100%	39%	29%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	466	90	519	239	422
LT Vol	93	0	111	67	98
Through Vol	373	0	207	102	302
RT Vol	0	90	201	70	22
Lane Flow Rate	507	98	564	260	459
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.291	0.228	1.351	0.686	1.138
Departure Headway (Hd)	10.501	9.66	9.613	11.819	10.648
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	350	374	384	309	344
Service Time	8.201	7.36	7.613	9.819	8.648
HCM Lane V/C Ratio	1.449	0.262	1.469	0.841	1.334
HCM Control Delay	180.6	15.2	201.5	37.1	124.8
HCM Lane LOS	F	C	F	E	F
HCM 95th-tile Q	20.5	0.9	24.3	4.7	15.3

Intersection	
Intersection Delay, s/veh	191
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	122	152	16	190	254	62	15	286	134	51	376	168
Future Vol, veh/h	122	152	16	190	254	62	15	286	134	51	376	168
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	133	165	17	207	276	67	16	311	146	55	409	183
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	52.4	161.4	143.9	318.1
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	45%	0%	43%	0%	9%
Vol Thru, %	66%	55%	0%	57%	0%	63%
Vol Right, %	31%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	435	274	16	444	62	595
LT Vol	15	122	0	190	0	51
Through Vol	286	152	0	254	0	376
RT Vol	134	0	16	0	62	168
Lane Flow Rate	473	298	17	483	67	647
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.182	0.823	0.044	1.285	0.162	1.622
Departure Headway (Hd)	11.543	12.628	11.639	11.428	10.454	10.359
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	317	289	310	323	345	356
Service Time	9.543	10.328	9.339	9.128	8.154	8.359
HCM Lane V/C Ratio	1.492	1.031	0.055	1.495	0.194	1.817
HCM Control Delay	143.9	54.6	14.9	181.8	15.2	318.1
HCM Lane LOS	F	F	B	F	C	F
HCM 95th-tile Q	15.8	6.7	0.1	19.1	0.6	33.4

Intersection	
Intersection Delay, s/veh	115.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	113	124	58	92	38	126	327	71	67	485	51
Future Vol, veh/h	41	113	124	58	92	38	126	327	71	67	485	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	123	135	63	100	41	137	355	77	73	527	55
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	28.8	22.1	90.8	207.2
HCM LOS	D	C	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	28%	0%	15%	31%	11%
Vol Thru, %	72%	0%	41%	49%	80%
Vol Right, %	0%	100%	45%	20%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	453	71	278	188	603
LT Vol	126	0	41	58	67
Through Vol	327	0	113	92	485
RT Vol	0	71	124	38	51
Lane Flow Rate	492	77	302	204	655
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.099	0.154	0.67	0.489	1.381
Departure Headway (Hd)	8.733	7.862	9.131	9.925	7.864
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	419	459	399	366	465
Service Time	6.433	5.562	7.131	7.925	5.864
HCM Lane V/C Ratio	1.174	0.168	0.757	0.557	1.409
HCM Control Delay	103.1	12	28.8	22.1	207.2
HCM Lane LOS	F	B	D	C	F
HCM 95th-tile Q	15.8	0.5	4.7	2.6	29.8

Cumulative+Project Conditions

Intersection	
Intersection Delay, s/veh	174.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	226	234	68	126	231	102	31	380	115	34	258	86
Future Vol, veh/h	226	234	68	126	231	102	31	380	115	34	258	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	246	254	74	137	251	111	34	413	125	37	280	93
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	195.9	88.6	271.9	114.4
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	6%	49%	0%	35%	0%	9%
Vol Thru, %	72%	51%	0%	65%	0%	68%
Vol Right, %	22%	0%	100%	0%	100%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	526	460	68	357	102	378
LT Vol	31	226	0	126	0	34
Through Vol	380	234	0	231	0	258
RT Vol	115	0	68	0	102	86
Lane Flow Rate	572	500	74	388	111	411
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.509	1.385	0.185	1.068	0.278	1.085
Departure Headway (Hd)	10.973	11.65	10.642	12.307	11.368	12.337
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	337	315	339	299	318	300
Service Time	8.973	9.35	8.342	10.007	9.068	10.337
HCM Lane V/C Ratio	1.697	1.587	0.218	1.298	0.349	1.37
HCM Control Delay	271.9	222.5	15.7	108.7	18.4	114.4
HCM Lane LOS	F	F	C	F	C	F
HCM 95th-tile Q	27.6	22.1	0.7	12.1	1.1	12.6

Intersection	
Intersection Delay, s/veh	158.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	94	207	201	84	102	84	93	370	90	116	320	26
Future Vol, veh/h	94	207	201	84	102	84	93	370	90	116	320	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	102	225	218	91	111	91	101	402	98	126	348	28
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	199.4	47.4	160.9	177.5
HCM LOS	F	E	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	0%	19%	31%	25%
Vol Thru, %	80%	0%	41%	38%	69%
Vol Right, %	0%	100%	40%	31%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	463	90	502	270	462
LT Vol	93	0	94	84	116
Through Vol	370	0	207	102	320
RT Vol	0	90	201	84	26
Lane Flow Rate	503	98	546	293	502
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.308	0.233	1.34	0.775	1.278
Departure Headway (Hd)	10.979	10.136	10.245	12.277	10.931
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	337	357	360	296	336
Service Time	8.679	7.836	8.245	10.277	8.931
HCM Lane V/C Ratio	1.493	0.275	1.517	0.99	1.494
HCM Control Delay	189.1	15.9	199.4	47.4	177.5
HCM Lane LOS	F	C	F	E	F
HCM 95th-tile Q	20.5	0.9	22.7	6	19.5

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	374	9	13	450	9	12
Future Vol, veh/h	374	9	13	450	9	12
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	407	10	14	489	10	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	417	0	929	412
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	517	-
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	-	-	1142	-	297	640
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	598	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1142	-	292	640
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	424	-	-	1142	-
HCM Lane V/C Ratio	0.054	-	-	0.012	-
HCM Control Delay (s)	14	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	9	517	20	9	443
Future Vol, veh/h	20	9	517	20	9	443
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	22	10	562	22	10	482

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1075	573	0	0	584	0
Stage 1	573	-	-	-	-	-
Stage 2	502	-	-	-	-	-
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	243	519	-	-	991	-
Stage 1	564	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	240	519	-	-	991	-
Mov Cap-2 Maneuver	240	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	608	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	288	991	-
HCM Lane V/C Ratio	-	-	0.109	0.01	-
HCM Control Delay (s)	-	-	19	8.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Intersection Delay, s/veh	205.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	122	166	30	190	268	68	29	292	134	57	382	168
Future Vol, veh/h	122	166	30	190	268	68	29	292	134	57	382	168
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	133	180	33	207	291	74	32	317	146	62	415	183
Number of Lanes	0	1	1	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	57.8	175.7	167.6	335.7
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	6%	42%	0%	41%	0%	9%
Vol Thru, %	64%	58%	0%	59%	0%	63%
Vol Right, %	29%	0%	100%	0%	100%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	455	288	30	458	68	607
LT Vol	29	122	0	190	0	57
Through Vol	292	166	0	268	0	382
RT Vol	134	0	30	0	68	168
Lane Flow Rate	495	313	33	498	74	660
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	1.242	0.864	0.082	1.327	0.178	1.66
Departure Headway (Hd)	11.937	12.923	11.943	11.728	10.76	10.759
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	307	282	302	314	336	343
Service Time	9.937	10.623	9.643	9.428	8.46	8.759
HCM Lane V/C Ratio	1.612	1.11	0.109	1.586	0.22	1.924
HCM Control Delay	167.6	62.2	15.7	199.4	15.8	335.7
HCM Lane LOS	F	F	C	F	C	F
HCM 95th-tile Q	17.3	7.4	0.3	20.1	0.6	33.8

Intersection	
Intersection Delay, s/veh	140.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	113	124	58	92	59	126	348	71	81	499	49
Future Vol, veh/h	46	113	124	58	92	59	126	348	71	81	499	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	123	135	63	100	64	137	378	77	88	542	53
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	32.6	25.3	115.3	250.2
HCM LOS	D	D	F	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	27%	0%	16%	28%	13%
Vol Thru, %	73%	0%	40%	44%	79%
Vol Right, %	0%	100%	44%	28%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	474	71	283	209	629
LT Vol	126	0	46	58	81
Through Vol	348	0	113	92	499
RT Vol	0	71	124	59	49
Lane Flow Rate	515	77	308	227	684
Geometry Grp	7	7	2	2	5
Degree of Util (X)	1.174	0.158	0.703	0.55	1.48
Departure Headway (Hd)	9.131	8.263	9.67	10.345	8.234
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	402	437	378	352	444
Service Time	6.831	5.963	7.67	8.345	6.234
HCM Lane V/C Ratio	1.281	0.176	0.815	0.645	1.541
HCM Control Delay	130.7	12.5	32.6	25.3	250.2
HCM Lane LOS	F	B	D	D	F
HCM 95th-tile Q	18.1	0.6	5.2	3.2	33.5

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	347	10	14	516	10	14
Future Vol, veh/h	347	10	14	516	10	14
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	377	11	15	561	11	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	388	0	974	383
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	591	-
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	-	-	1170	-	279	664
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1170	-	274	664
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	417	-	-	1170	-
HCM Lane V/C Ratio	0.063	-	-	0.013	-
HCM Control Delay (s)	14.2	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	10	445	23	10	592
Future Vol, veh/h	22	10	445	23	10	592
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	11	484	25	11	643

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1162	497	0	0	509	0
Stage 1	497	-	-	-	-	-
Stage 2	665	-	-	-	-	-
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	216	573	-	-	1056	-
Stage 1	611	-	-	-	-	-
Stage 2	511	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	213	573	-	-	1056	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	601	-	-	-	-	-
Stage 2	511	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	265	1056	-
HCM Lane V/C Ratio	-	-	0.131	0.01	-
HCM Control Delay (s)	-	-	20.6	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

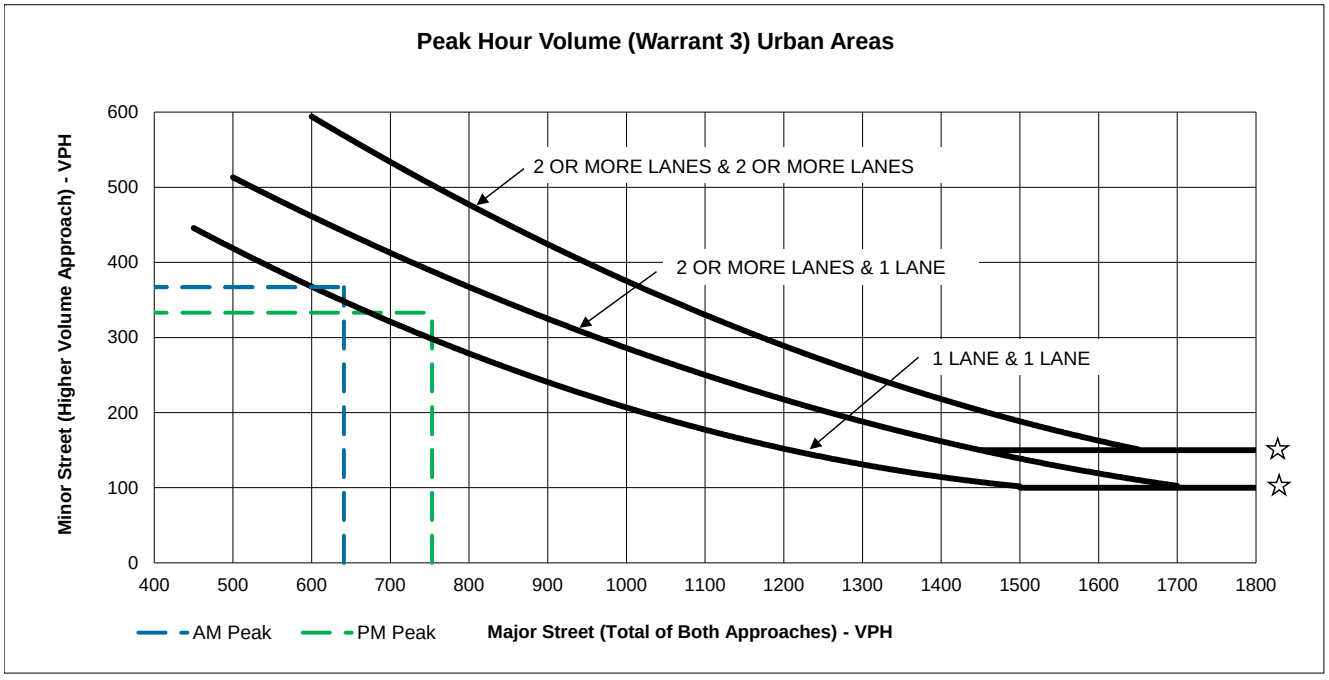
Appendix C

California MUTCD Peak Hour Warrant 3 Worksheets

Existing Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

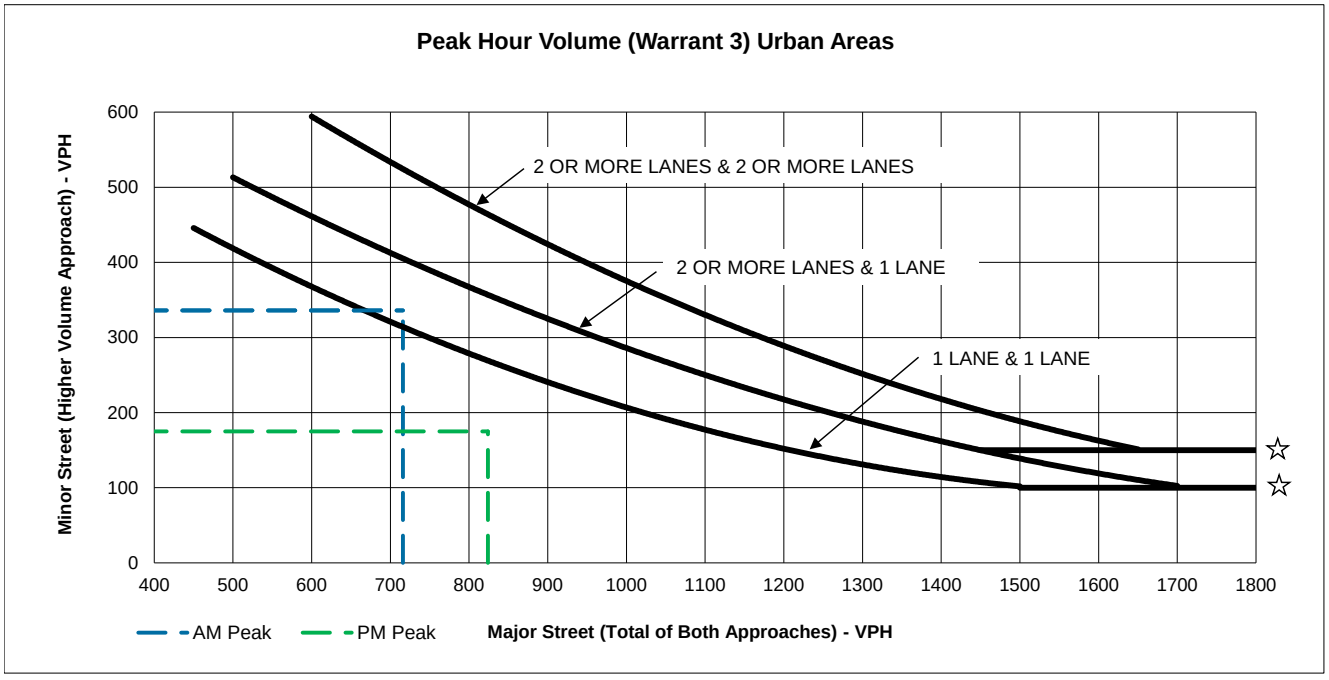


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Existing Conditions Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	641	753
Minor St. Volume:	367	333
Warrant Met?:	Yes	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



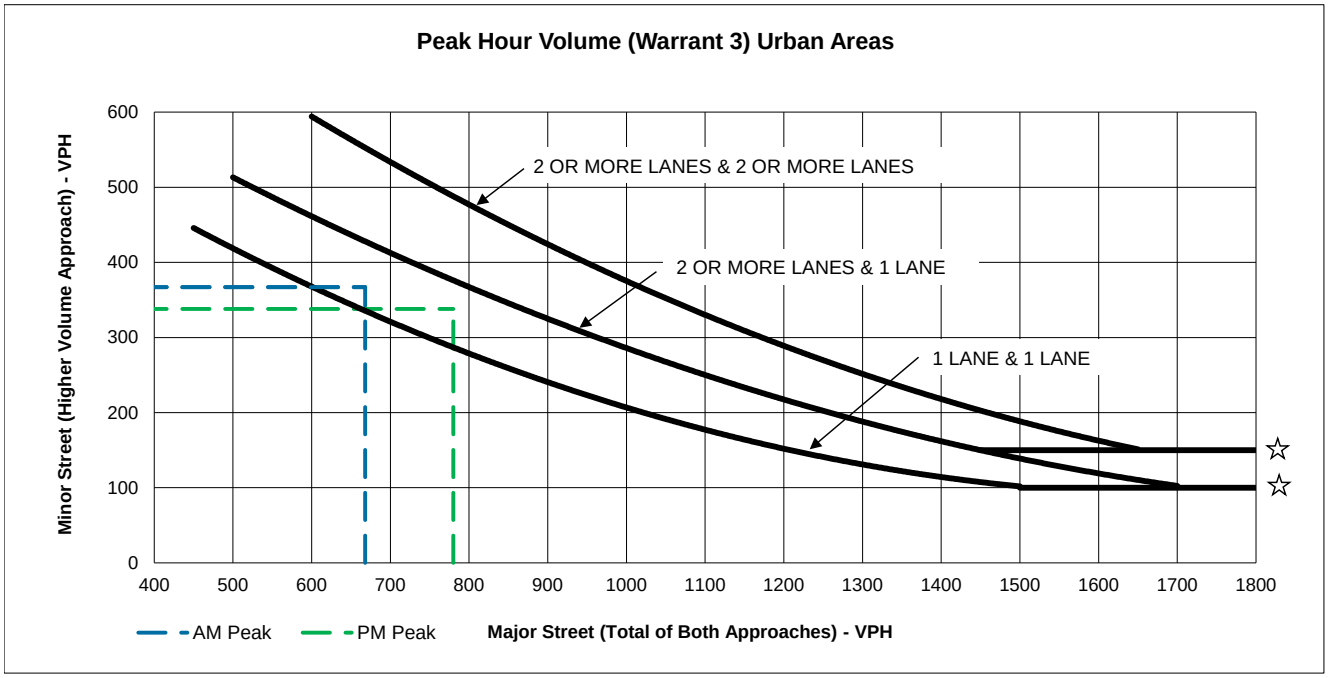
☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Existing Conditions Intersection #2	Number of Lanes
Major Approach	West Street	1
Minor Approach	Pleasant Avenue	1
	AM Peak	PM Peak
Major St. Volume:	716	824
Minor St. Volume:	336	175
Warrant Met?:	Yes	No

Existing+Approve Pending Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



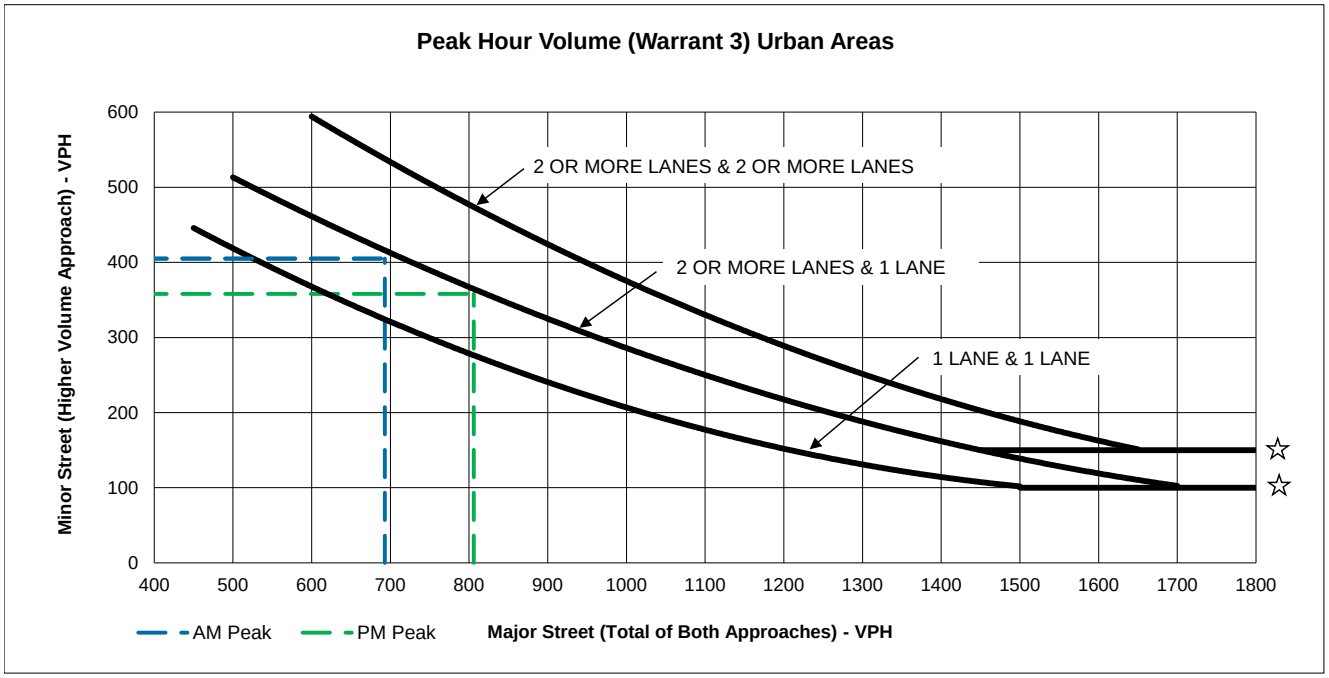
☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Existing+AP Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	668	780
Minor St. Volume:	367	338
Warrant Met?:	Yes	Yes

Existing+Approve Pending+Project Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

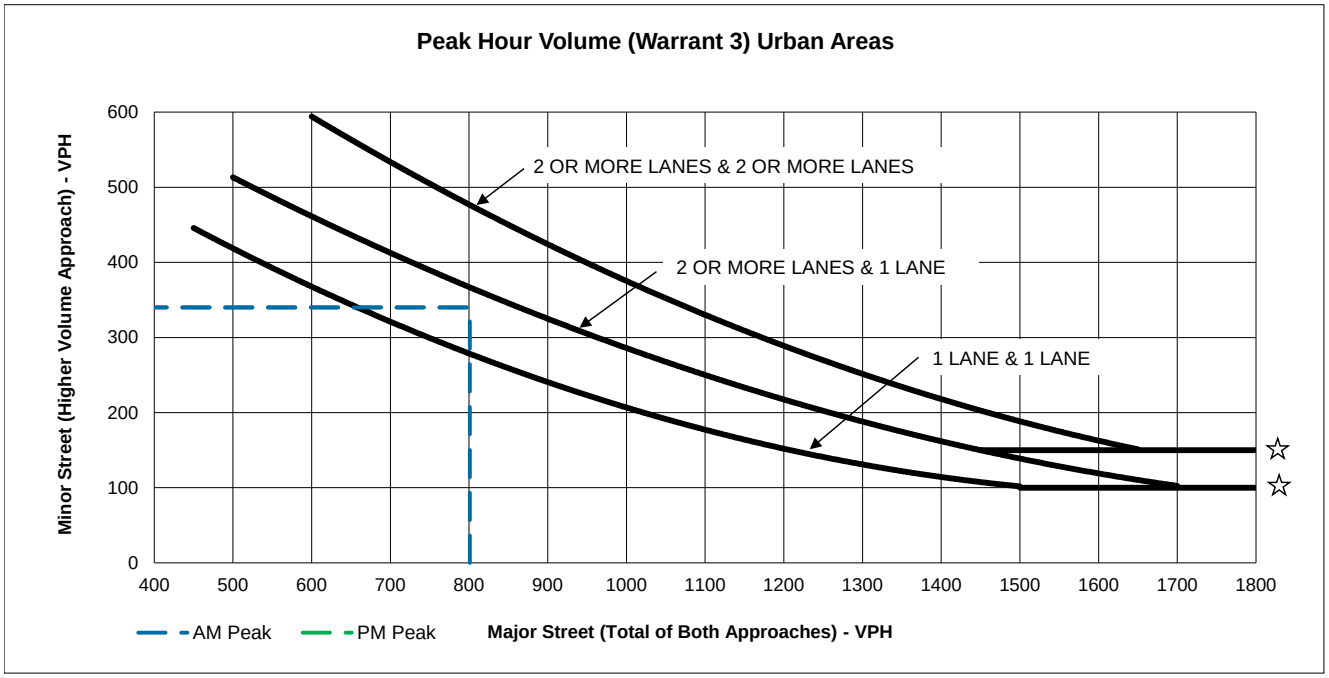


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Existing+AP+P Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	693	806
Minor St. Volume:	405	358
Warrant Met?:	Yes	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



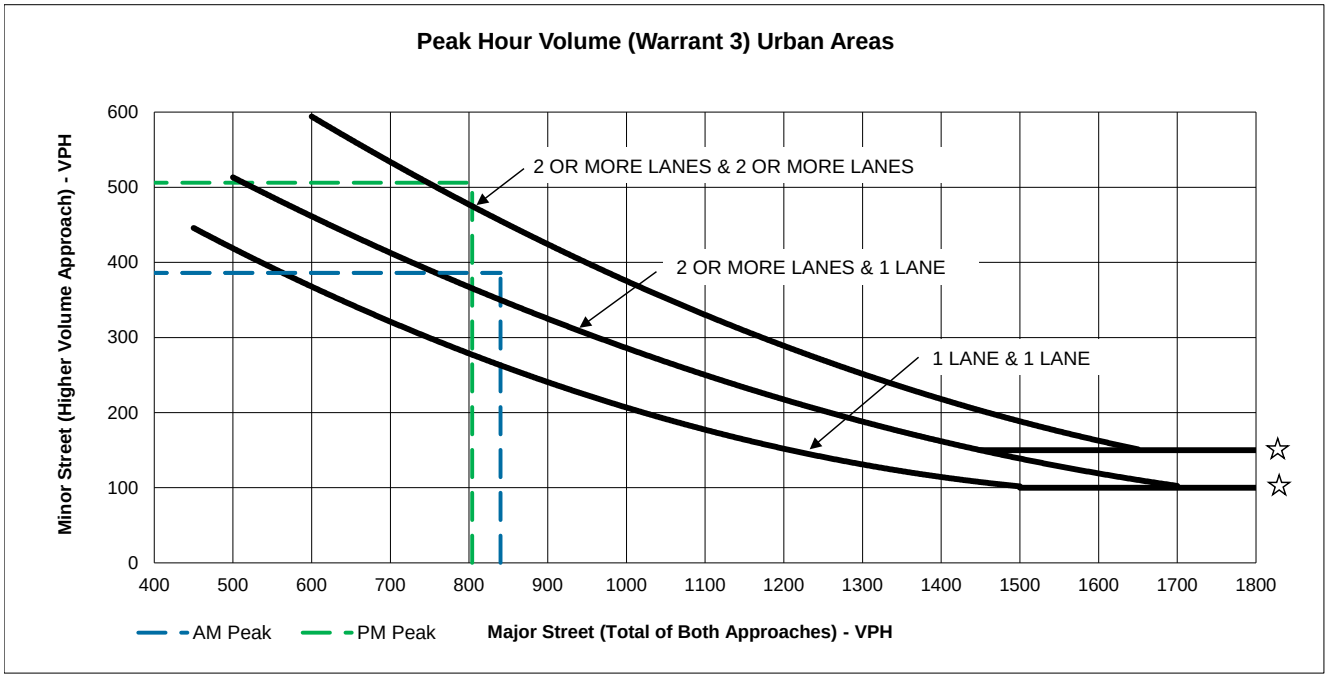
☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Existing+AP+P Conditions	
	Intersection #2	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	801	
Minor St. Volume:	340	
Warrant Met?:	Yes	

Cumulative Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

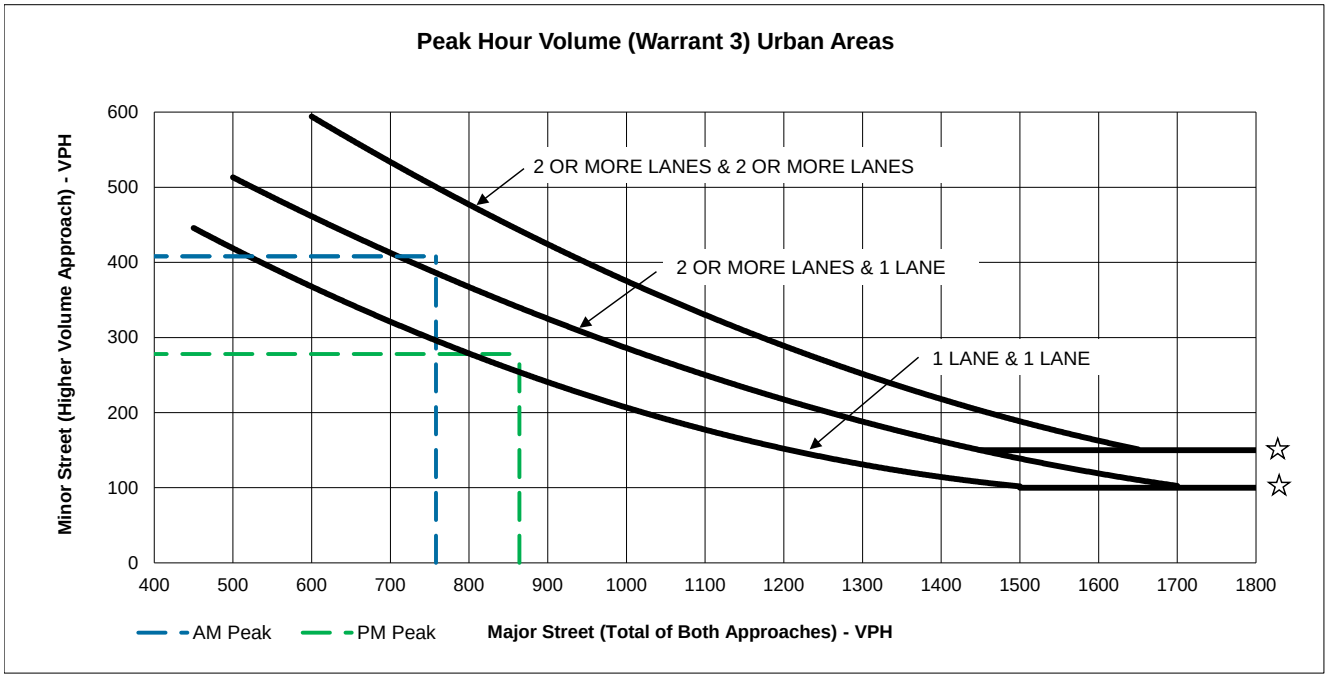


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Cumulative Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	840	804
Minor St. Volume:	386	506
Warrant Met?:	Yes	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



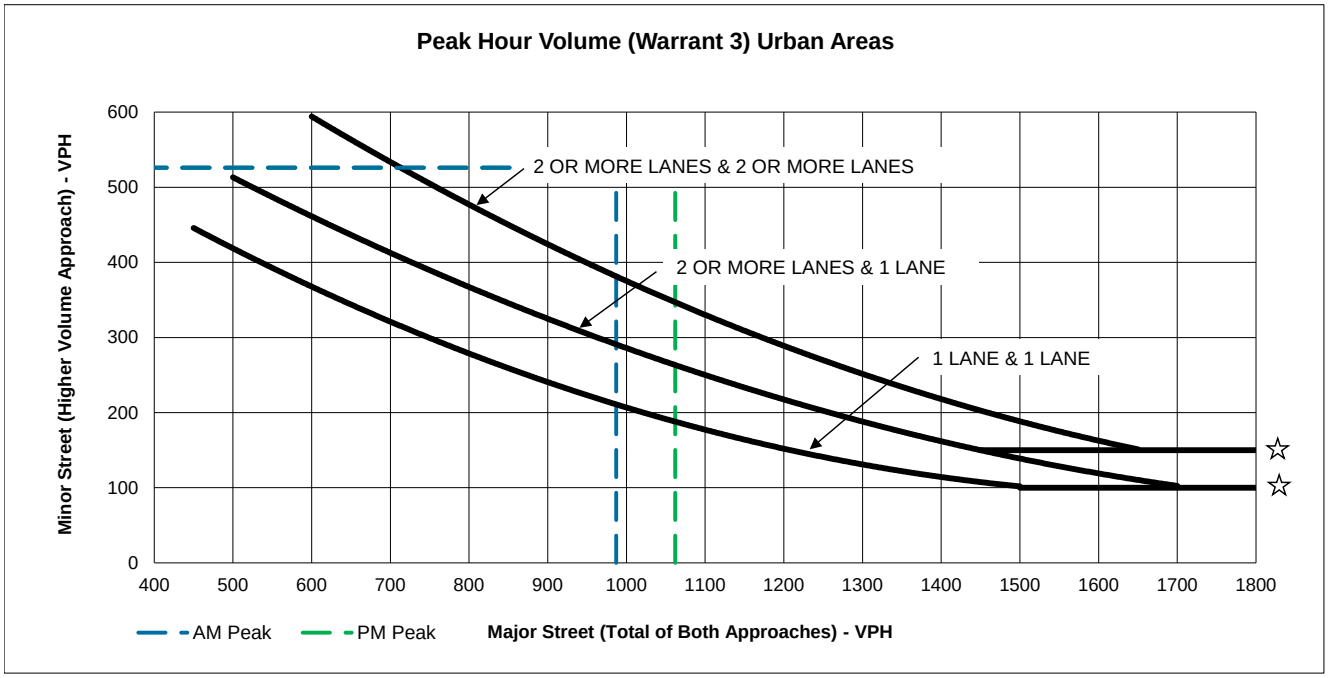
☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Cumulative Conditions	
	Intersection #2	Number of Lanes
Major Approach	West Street	1
Minor Approach	Pleasant Avenue	1
	AM Peak	PM Peak
Major St. Volume:	758	864
Minor St. Volume:	408	278
Warrant Met?:	Yes	Yes

Cumulative+Project Conditions

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

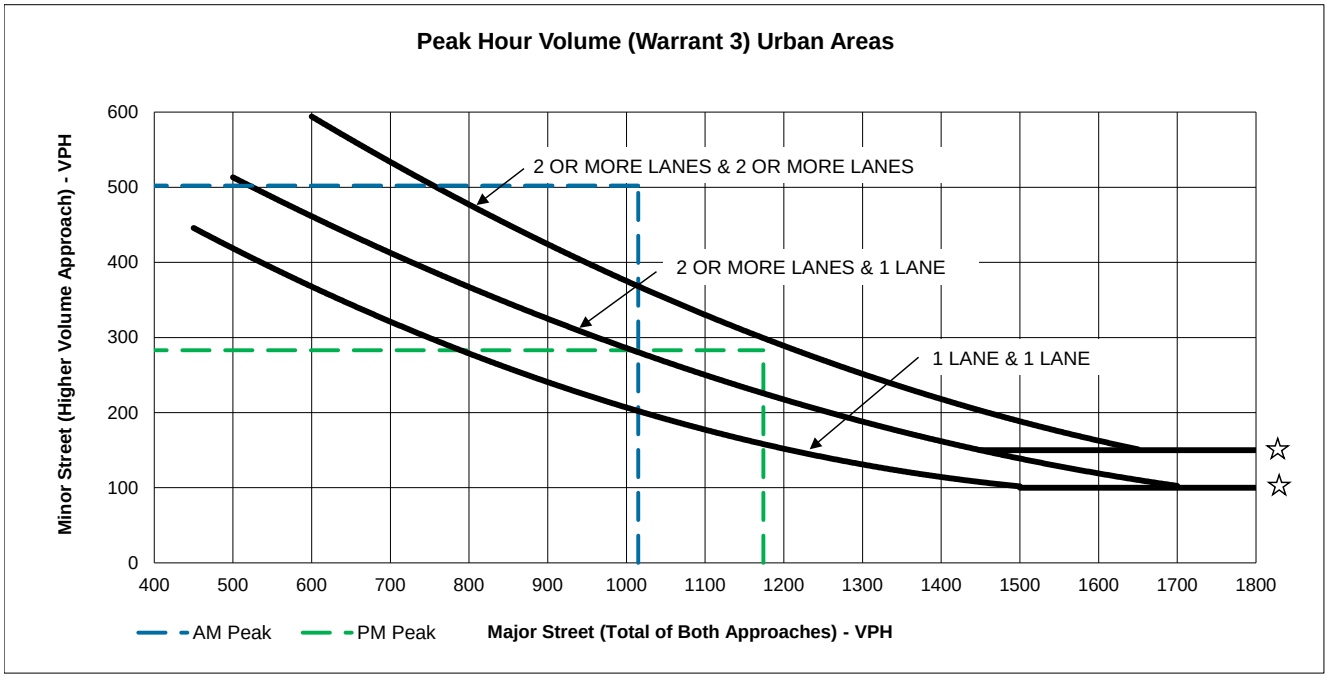


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Cumulative+P Conditions	
	Intersection #1	Number of Lanes
Major Approach	West Street	1
Minor Approach	Prosperity Avenue	1
	AM Peak	PM Peak
Major St. Volume:	987	1,062
Minor St. Volume:	526	526
Warrant Met?:	Yes	Yes

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Cumulative+P Conditions	
	Intersection #2	Number of Lanes
Major Approach	West Street	1
Minor Approach	Pleasant Avenue	1
	AM Peak	PM Peak
Major St. Volume:	1,015	1,174
Minor St. Volume:	502	283
Warrant Met?:	Yes	Yes

Appendix D

Mitigation Synchro 10 LOS Output Worksheets

Existing Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	102	5	30	52	36	11	244	37	17	125	25
Future Volume (veh/h)	124	102	5	30	52	36	11	244	37	17	125	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	148	121	6	36	62	43	13	290	44	20	149	30
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
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	623	449	381	585	449	381	639	502	76	519	479	96
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1269	1841	1560	1244	1841	1560	1186	1561	237	1030	1487	299
Grp Volume(v), veh/h	148	121	6	36	62	43	13	0	334	20	0	179
Grp Sat Flow(s),veh/h/ln	1269	1841	1560	1244	1841	1560	1186	0	1798	1030	0	1787
Q Serve(g_s), s	2.1	1.1	0.1	0.5	0.5	0.4	0.2	0.0	3.2	0.3	0.0	1.6
Cycle Q Clear(g_c), s	2.7	1.1	0.1	1.6	0.5	0.4	1.7	0.0	3.2	3.5	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.17
Lane Grp Cap(c), veh/h	623	449	381	585	449	381	639	0	579	519	0	575
V/C Ratio(X)	0.24	0.27	0.02	0.06	0.14	0.11	0.02	0.00	0.58	0.04	0.00	0.31
Avail Cap(c_a), veh/h	1416	1598	1355	1361	1598	1355	1288	0	1561	1082	0	1552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	6.3	5.9	7.0	6.1	6.1	6.0	0.0	5.9	7.3	0.0	5.3
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.9	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.0	0.1	0.1	0.1	0.0	0.0	0.3	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	6.7	6.0	7.0	6.3	6.2	6.0	0.0	6.8	7.4	0.0	5.6
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		275			141			347			199	
Approach Delay, s/veh		7.0			6.4			6.7			5.8	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		11.2		9.6		11.2		9.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		5.2		4.7		5.5		3.6				
Green Ext Time (p_c), s		1.5		0.9		0.7		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			6.6									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	102	5	30	52	36	11	244	37	17	125	25
Future Volume (veh/h)	124	102	5	30	52	36	11	244	37	17	125	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	135	111	5	33	57	39	12	265	40	18	136	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	629	420	356	593	420	356	660	486	73	549	464	92
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1279	1841	1560	1256	1841	1560	1204	1562	236	1057	1491	296
Grp Volume(v), veh/h	135	111	5	33	57	39	12	0	305	18	0	163
Grp Sat Flow(s),veh/h/ln	1279	1841	1560	1256	1841	1560	1204	0	1798	1057	0	1787
Q Serve(g_s), s	1.8	1.0	0.0	0.4	0.5	0.4	0.1	0.0	2.7	0.3	0.0	1.4
Cycle Q Clear(g_c), s	2.3	1.0	0.0	1.4	0.5	0.4	1.5	0.0	2.7	3.0	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.13	1.00		0.17
Lane Grp Cap(c), veh/h	629	420	356	593	420	356	660	0	559	549	0	556
V/C Ratio(X)	0.21	0.26	0.01	0.06	0.14	0.11	0.02	0.00	0.55	0.03	0.00	0.29
Avail Cap(c_a), veh/h	1515	1696	1437	1464	1696	1437	1394	0	1657	1194	0	1647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.9	6.2	5.8	6.8	6.0	6.0	5.7	0.0	5.6	6.8	0.0	5.1
Incr Delay (d2), s/veh	0.2	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.8	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	6.5	5.9	6.8	6.1	6.1	5.7	0.0	6.4	6.9	0.0	5.4
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		251			129			317			181	
Approach Delay, s/veh		6.8			6.3			6.4			5.5	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		10.6		9.0		10.6		9.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		4.7		4.3		5.0		3.4				
Green Ext Time (p_c), s		1.3		0.8		0.6		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	6.3
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	134	130	45	69	47	68	273	66	72	221	16
Future Volume (veh/h)	72	134	130	45	69	47	68	273	66	72	221	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	176	171	62	95	64	76	307	74	79	243	18
Peak Hour Factor	0.76	0.76	0.76	0.73	0.73	0.73	0.89	0.89	0.89	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	272	226	254	328	175	223	535	543	209	384	25
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	241	758	631	283	915	488	232	1562	1585	181	1121	73
Grp Volume(v), veh/h	442	0	0	221	0	0	383	0	74	340	0	0
Grp Sat Flow(s),veh/h/ln	1630	0	0	1686	0	0	1794	0	1585	1375	0	0
Q Serve(g_s), s	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	0.0	2.7	0.0	0.0	5.1	0.0	1.0	7.0	0.0	0.0
Prop In Lane	0.21		0.39	0.28		0.29	0.20		1.00	0.23		0.05
Lane Grp Cap(c), veh/h	730	0	0	758	0	0	758	0	543	618	0	0
V/C Ratio(X)	0.61	0.00	0.00	0.29	0.00	0.00	0.51	0.00	0.14	0.55	0.00	0.00
Avail Cap(c_a), veh/h	1108	0	0	1107	0	0	1178	0	947	1012	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	7.1	0.0	0.0	8.2	0.0	6.8	8.5	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.2	0.0	0.0	0.5	0.0	0.1	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.6	0.0	0.0	1.0	0.0	0.2	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	0.0	7.3	0.0	0.0	8.7	0.0	6.9	9.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		442			221			457			340	
Approach Delay, s/veh		9.2			7.3			8.4			9.2	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.8		15.3		14.8		15.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		7.1		9.0		9.0		4.7				
Green Ext Time (p_c), s		1.8		1.8		1.3		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			8.7									
HCM 6th LOS			A									

Existing+Approve Pending Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	102	16	105	143	24	14	189	81	39	303	114
Future Volume (veh/h)	52	102	16	105	143	24	14	189	81	39	303	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	57	111	17	114	155	26	15	205	88	42	329	124
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	512	455	385	549	455	385	465	477	205	587	497	187
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1213	1885	1598	1272	1885	1598	945	1251	537	1095	1305	492
Grp Volume(v), veh/h	57	111	17	114	155	26	15	0	293	42	0	453
Grp Sat Flow(s),veh/h/ln	1213	1885	1598	1272	1885	1598	945	0	1788	1095	0	1797
Q Serve(g_s), s	1.0	1.1	0.2	1.9	1.6	0.3	0.3	0.0	2.9	0.7	0.0	5.0
Cycle Q Clear(g_c), s	2.6	1.1	0.2	3.0	1.6	0.3	5.3	0.0	2.9	3.6	0.0	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		0.27
Lane Grp Cap(c), veh/h	512	455	385	549	455	385	465	0	681	587	0	684
V/C Ratio(X)	0.11	0.24	0.04	0.21	0.34	0.07	0.03	0.00	0.43	0.07	0.00	0.66
Avail Cap(c_a), veh/h	1136	1425	1208	1204	1425	1208	820	0	1352	997	0	1358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	7.3	6.9	8.5	7.5	7.0	8.3	0.0	5.5	6.8	0.0	6.1
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.2	0.4	0.1	0.0	0.0	0.4	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.0	0.3	0.3	0.1	0.0	0.0	0.3	0.1	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	7.6	7.0	8.7	7.9	7.0	8.3	0.0	5.9	6.8	0.0	7.2
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		185			295			308			495	
Approach Delay, s/veh		7.8			8.1			6.0			7.2	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	13.6	10.2	13.6	10.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	7.3	4.6	7.0	5.0
Green Ext Time (p_c), s	1.2	0.6	2.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Existing+Approve Pending+Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	125	26	130	181	47	25	226	103	43	292	123
Future Volume (veh/h)	89	125	26	130	181	47	25	226	103	43	292	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	97	136	28	141	197	51	27	246	112	47	317	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	503	530	449	556	530	449	429	455	207	498	467	197
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1141	1885	1598	1231	1885	1598	947	1226	558	1032	1258	532
Grp Volume(v), veh/h	97	136	28	141	197	51	27	0	358	47	0	451
Grp Sat Flow(s),veh/h/ln	1141	1885	1598	1231	1885	1598	947	0	1785	1032	0	1789
Q Serve(g_s), s	1.9	1.4	0.3	2.6	2.2	0.6	0.6	0.0	4.1	1.0	0.0	5.5
Cycle Q Clear(g_c), s	4.1	1.4	0.3	4.0	2.2	0.6	6.1	0.0	4.1	5.1	0.0	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.30
Lane Grp Cap(c), veh/h	503	530	449	556	530	449	429	0	662	498	0	664
V/C Ratio(X)	0.19	0.26	0.06	0.25	0.37	0.11	0.06	0.00	0.54	0.09	0.00	0.68
Avail Cap(c_a), veh/h	976	1311	1111	1066	1311	1111	736	0	1241	833	0	1244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	7.2	6.8	8.8	7.5	6.9	9.4	0.0	6.4	8.4	0.0	6.8
Incr Delay (d2), s/veh	0.2	0.3	0.1	0.2	0.4	0.1	0.1	0.0	0.7	0.1	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.1	0.4	0.5	0.1	0.1	0.0	0.6	0.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	7.5	6.9	9.0	7.9	7.0	9.5	0.0	7.1	8.5	0.0	8.1
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		261			389			385			498	
Approach Delay, s/veh		8.1			8.2			7.3			8.1	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	14.1	11.8	14.1	11.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.0	18.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	8.1	6.1	7.5	6.0
Green Ext Time (p_c), s	1.5	0.8	2.1	1.3

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	71	78	46	73	56	92	271	52	63	375	30
Future Volume (veh/h)	31	71	78	46	73	56	92	271	52	63	375	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	34	77	85	50	79	61	100	295	57	68	408	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	218	152	148	258	163	109	307	603	676	228	636	48
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	205	757	737	338	815	545	279	1427	1598	136	1504	114
Grp Volume(v), veh/h	196	0	0	190	0	0	395	0	57	509	0	0
Grp Sat Flow(s),veh/h/ln	1700	0	0	1698	0	0	1706	0	1598	1754	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.4	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	2.2	0.0	0.0	3.7	0.0	0.5	5.4	0.0	0.0
Prop In Lane	0.17		0.43	0.26		0.32	0.25		1.00	0.13		0.06
Lane Grp Cap(c), veh/h	517	0	0	530	0	0	910	0	676	913	0	0
V/C Ratio(X)	0.38	0.00	0.00	0.36	0.00	0.00	0.43	0.00	0.08	0.56	0.00	0.00
Avail Cap(c_a), veh/h	1413	0	0	1402	0	0	1728	0	1539	1821	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	8.5	0.0	0.0	5.0	0.0	4.1	5.5	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.1	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	0.0	8.9	0.0	0.0	5.4	0.0	4.2	6.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		196			190			452			509	
Approach Delay, s/veh		9.0			8.9			5.2			6.0	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.6		9.3		14.6		9.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		23.0		18.0		23.0		18.0				
Max Q Clear Time (g_c+I1), s		5.7		4.4		7.4		4.2				
Green Ext Time (p_c), s		2.4		0.8		2.7		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			6.6									
HCM 6th LOS			A									

Cumulative Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	152	16	190	254	62	15	286	134	51	376	168
Future Volume (veh/h)	122	152	16	190	254	62	15	286	134	51	376	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	165	17	207	276	67	16	311	146	55	409	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	414	602	510	510	602	510	315	513	241	413	521	233
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1038	1870	1585	1202	1870	1585	825	1204	565	934	1224	548
Grp Volume(v), veh/h	133	165	17	207	276	67	16	0	457	55	0	592
Grp Sat Flow(s),veh/h/ln	1038	1870	1585	1202	1870	1585	825	0	1769	934	0	1772
Q Serve(g_s), s	4.2	2.3	0.3	5.5	4.2	1.1	0.6	0.0	7.1	1.7	0.0	10.3
Cycle Q Clear(g_c), s	8.4	2.3	0.3	7.9	4.2	1.1	10.9	0.0	7.1	8.9	0.0	10.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.31
Lane Grp Cap(c), veh/h	414	602	510	510	602	510	315	0	753	413	0	755
V/C Ratio(X)	0.32	0.27	0.03	0.41	0.46	0.13	0.05	0.00	0.61	0.13	0.00	0.78
Avail Cap(c_a), veh/h	606	948	804	732	948	804	493	0	1135	614	0	1137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	9.0	8.3	11.9	9.6	8.6	13.5	0.0	7.9	11.4	0.0	8.8
Incr Delay (d2), s/veh	0.4	0.2	0.0	0.5	0.5	0.1	0.1	0.0	0.8	0.1	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	0.1	1.1	1.2	0.3	0.1	0.0	1.5	0.3	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	9.2	8.3	12.4	10.2	8.7	13.6	0.0	8.7	11.5	0.0	11.0
LnGrp LOS	B	A	A	B	B	A	B	A	A	B	A	B
Approach Vol, veh/h		315			550			473			647	
Approach Delay, s/veh		10.9			10.8			8.9			11.0	
Approach LOS		B			B			A			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	19.7	16.0	19.7	16.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.9	18.1	22.9	18.1
Max Q Clear Time (g_c+I1), s	12.9	10.4	12.3	9.9
Green Ext Time (p_c), s	2.0	0.9	2.9	1.6

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	207	201	67	102	70	93	373	90	98	302	22
Future Volume (veh/h)	111	207	201	67	102	70	93	373	90	98	302	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	225	218	73	111	76	101	405	98	107	328	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	270	238	182	264	152	172	578	746	146	399	26
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	286	722	635	275	705	405	207	1228	1585	148	848	55
Grp Volume(v), veh/h	564	0	0	260	0	0	506	0	98	459	0	0
Grp Sat Flow(s),veh/h/ln	1642	0	0	1384	0	0	1435	0	1585	1052	0	0
Q Serve(g_s), s	11.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	9.7	0.0	0.0
Cycle Q Clear(g_c), s	18.8	0.0	0.0	6.9	0.0	0.0	15.6	0.0	2.0	25.3	0.0	0.0
Prop In Lane	0.21		0.39	0.28		0.29	0.20		1.00	0.23		0.05
Lane Grp Cap(c), veh/h	690	0	0	598	0	0	750	0	746	571	0	0
V/C Ratio(X)	0.82	0.00	0.00	0.43	0.00	0.00	0.68	0.00	0.13	0.80	0.00	0.00
Avail Cap(c_a), veh/h	736	0	0	639	0	0	753	0	749	574	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.0	0.0	0.0	13.4	0.0	0.0	11.7	0.0	8.7	15.0	0.0	0.0
Incr Delay (d2), s/veh	6.8	0.0	0.0	0.5	0.0	0.0	2.4	0.0	0.1	8.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	0.0	2.1	0.0	0.0	4.0	0.0	0.5	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	0.0	13.9	0.0	0.0	14.1	0.0	8.8	23.1	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h		564			260			604			459	
Approach Delay, s/veh		23.8			13.9			13.2			23.1	
Approach LOS		C			B			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.9		26.3		31.9		26.3				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		27.5		23.5		27.5		23.5				
Max Q Clear Time (g_c+I1), s		17.6		20.8		27.3		8.9				
Green Ext Time (p_c), s		2.4		1.0		0.1		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			18.9									
HCM 6th LOS			B									

Cumulative+Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	166	30	190	268	68	29	292	134	57	382	168
Future Volume (veh/h)	122	166	30	190	268	68	29	292	134	57	382	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	180	33	207	291	74	32	317	146	62	415	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	578	490	431	578	490	353	601	277	451	610	269
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	1017	1870	1585	1168	1870	1585	820	1212	558	929	1230	542
Grp Volume(v), veh/h	133	180	33	207	291	74	32	0	463	62	0	598
Grp Sat Flow(s),veh/h/ln	1017	1870	1585	1168	1870	1585	820	0	1770	929	0	1773
Q Serve(g_s), s	5.7	3.4	0.7	7.6	5.9	1.6	1.4	0.0	8.2	2.3	0.0	11.8
Cycle Q Clear(g_c), s	11.6	3.4	0.7	11.0	5.9	1.6	13.3	0.0	8.2	10.5	0.0	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.31
Lane Grp Cap(c), veh/h	341	578	490	431	578	490	353	0	878	451	0	880
V/C Ratio(X)	0.39	0.31	0.07	0.48	0.50	0.15	0.09	0.00	0.53	0.14	0.00	0.68
Avail Cap(c_a), veh/h	425	733	622	528	733	622	353	0	878	451	0	880
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	12.2	11.3	16.4	13.1	11.6	13.9	0.0	7.9	11.5	0.0	8.8
Incr Delay (d2), s/veh	0.7	0.3	0.1	0.8	0.7	0.1	0.5	0.0	2.3	0.6	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.1	0.2	1.7	2.0	0.4	0.3	0.0	2.4	0.4	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	12.5	11.3	17.2	13.7	11.7	14.4	0.0	10.2	12.1	0.0	13.1
LnGrp LOS	B	B	B	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h		346			572			495			660	
Approach Delay, s/veh		14.7			14.7			10.5			13.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	27.4	18.8	27.4	18.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.9	18.1	22.9	18.1
Max Q Clear Time (g_c+I1), s	15.3	13.6	13.8	13.0
Green Ext Time (p_c), s	1.7	0.7	2.7	1.3

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	207	201	67	102	88	93	391	90	116	320	26
Future Volume (veh/h)	115	207	201	67	102	88	93	391	90	116	320	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	225	218	73	111	96	101	425	98	126	348	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	255	224	170	245	173	172	598	764	159	379	27
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	296	719	633	245	692	489	195	1242	1585	160	786	56
Grp Volume(v), veh/h	568	0	0	280	0	0	526	0	98	502	0	0
Grp Sat Flow(s),veh/h/ln	1648	0	0	1427	0	0	1437	0	1585	1002	0	0
Q Serve(g_s), s	11.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	11.7	0.0	0.0
Cycle Q Clear(g_c), s	18.6	0.0	0.0	7.3	0.0	0.0	14.8	0.0	1.9	26.5	0.0	0.0
Prop In Lane	0.22		0.38	0.26		0.34	0.19		1.00	0.25		0.06
Lane Grp Cap(c), veh/h	664	0	0	588	0	0	770	0	764	565	0	0
V/C Ratio(X)	0.86	0.00	0.00	0.48	0.00	0.00	0.68	0.00	0.13	0.89	0.00	0.00
Avail Cap(c_a), veh/h	664	0	0	588	0	0	770	0	764	565	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	13.7	0.0	0.0	10.7	0.0	7.9	15.6	0.0	0.0
Incr Delay (d2), s/veh	10.6	0.0	0.0	0.6	0.0	0.0	2.5	0.0	0.1	16.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.0	2.3	0.0	0.0	3.8	0.0	0.5	7.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	0.0	0.0	14.3	0.0	0.0	13.2	0.0	7.9	31.6	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h		568			280			624			502	
Approach Delay, s/veh		27.8			14.3			12.4			31.6	
Approach LOS		C			B			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		31.0		24.0		31.0		24.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		26.5		19.5		26.5		19.5				
Max Q Clear Time (g_c+I1), s		16.8		20.6		28.5		9.3				
Green Ext Time (p_c), s		2.5		0.0		0.0		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			22.0									
HCM 6th LOS			C									