PLANNING COMMISSION AGENDA

CHAIRPERSON:
Adam Peck

VICE CHAIRPERSON:
Mary Beatie

COMMISSIONERS: Marvin Hansen, Chris Tavarez, Bill Davis, Mary Beatie, Adam Peck

MONDAY, AUGUST 14, 2023
VISALIA COUNCIL CHAMBERS
LOCATED AT 707 W. ACEQUIA AVENUE, VISALIA, CA
MEETING TIME: 7:00 PM

1. CALL TO ORDER –

2. THE PLEDGE OF ALLEGIANCE –

3. CITIZEN'S COMMENTS – This is the time for citizens to comment on subject matters that are not on the agenda but are within the jurisdiction of the Visalia Planning Commission. You may provide comments to the Planning Commission at this time, but the Planning Commission may only legally discuss those items already on tonight's agenda.

   The Commission requests that a five (5) minute time limit be observed for Citizen Comments. You will be notified when your five minutes have expired.

4. CHANGES TO THE AGENDA –

5. CONSENT CALENDAR - All items under the consent calendar are to be considered routine and will be enacted by one motion. For any discussion of an item on the consent calendar, it will be removed at the request of the Commission and made a part of the regular agenda.

   - No Items on the Consent Calendar

6. PUBLIC HEARING – Nathan Perez, Planning Intern

   Conditional Use Permit No. 2023-23: A request to establish a wellness studio in a 450 square foot leased office space in the O-PA (Professional/Administrative Office) zone. The project site is located at 1510 West Mineral King Avenue (APN: 093-283-012). The project is Categorically Exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15301, Categorical Exemption No. 2023-38.

7. PUBLIC HEARING – Brandon Smith, Principal Planner
   a. Pratt Family Ranch Tentative Subdivision Map No. 5583: A request to subdivide 49.43 acres into 247 lots for residential use and additional lots for public and private parks, landscape / lighting district lots, and private streets with gated access, to be located within the R-1-5 (Single-Family Residential), R-M-2 (Multi-Family Residential), and QP (Quasi-Public) zone districts upon annexation.
   b. Specific Plan No. 2021-06: A request to establish a new specific plan (Pratt Family Ranch Specific Plan) on 95.56 acres, including districts for low density residential, medium density residential, and parks and open space, and establishment of lots below minimum lot size. Full buildout of the plan will accommodate approximately 541 dwelling units and 8.3 acres of parks & open space, to be developed across Urban Development Boundary Tiers II and III.
   c. General Plan Amendment No. 2021-05: A request to amend the location and acreage of General Plan land use designations within 95.56 acres, resulting in the elimination of Very Low Density Residential designation and redistribution of Low Density Residential, Medium Density Residential, and Parks / Recreation designations.
   d. Annexation No. 2021-04: A request to annex 95.56 acres, located within the City of Visalia Urban Development Boundary Tiers II and III, into the Visalia city limits.

      Environmental Assessment Status: An Initial Study was prepared for this project, consistent with the California Environmental Quality Act (CEQA), which disclosed that environmental impacts are determined to be not significant with the inclusion of mitigation measures. Mitigated Negative Declaration No. 2023-37 has been prepared for adoption with this project. (State Clearinghouse No. 2023070368).

      Location: The project site is located north of Riverway Drive on the west and east sides of Mooney Boulevard. (APN: 078-010-025, 028, 029; 078-110-022, 023)

8. CITY PLANNER/ PLANNING COMMISSION DISCUSSION –
   a. Housing Element and Environmental Justice Element Update.

The Planning Commission meeting may end no later than 11:00 P.M. Any unfinished business may be continued to a future date and time to be determined by the Commission at this meeting. The Planning Commission routinely visits the project sites listed on the agenda.

For Hearing Impaired – Call (559) 713-4900 (TTY) 48-hours in advance of the scheduled meeting time to request signing services.

Any written materials relating to an item on this agenda submitted to the Planning Commission after distribution of the agenda packet are available for public inspection in the City Office, 315 E. Acequia Visalia, CA 93291, during normal business hours.

APPEAL PROCEDURE

THE LAST DAY TO FILE AN APPEAL IS THURSDAY, AUGUST 24, 2023, BEFORE 5 PM

According to the City of Visalia Zoning Ordinance Section 17.02.145 and Subdivision Ordinance Section 16.04.040, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal form with applicable fees shall be filed with the City Clerk at 220 N. Santa Fe, Visalia, CA 93291. The appeal shall specify errors or abuses of discretion by the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the city's website www.visalia.city or from the City Clerk.

THE NEXT REGULAR MEETING WILL BE HELD ON MONDAY, AUGUST 28, 2023

REPORT TO CITY OF VISALIA PLANNING COMMISSION

HEARING DATE: August 14, 2023

PROJECT PLANNER: Nathan Perez, Planning Intern
Phone No.: (559) 713-4449
E-mail: nathan.perez@visalia.city

SUBJECT: **Conditional Use Permit No. 2023-23:** A request to establish a wellness studio in a 450 square foot leased office space in the O-PA (Professional/Administrative Office) zone. The project site is located at 1510 West Mineral King Avenue (APN: 093-283-012).

STAFF RECOMMENDATION

Staff recommend approval of Conditional Use Permit No. 2023-23 based on the findings and conditions in Resolution No. 2023-35. Staff's recommendation is based on the on the project's consistency with the Visalia General Plan and the Zoning Ordinance.

RECOMMENDED MOTION

I move to approve Conditional Use Permit No. 2023-23 based on the findings and conditions in Resolution No. 2023-35.

PROJECT DESCRIPTION

Conditional Use Permit No. 2023-23 is a request by Sabrina Jimenez to establish a wellness studio in an existing building located at 1510 West Mineral King Avenue. The use, located in Unit A, will occupy 450 square feet of an overall 1,762 square foot building, having a point of entry independent from the State Farm Insurance office located on-site which occupies the other tenant space. The Floor Plan in Exhibit "B" details that the tenant space layout will be partitioned with two rooms and a restroom in the northwest corner of the second room. It should be noted that the space has not been used as a beauty salon in the past.

According to the Operational Statement in Exhibit "C", the use will contain one employee, operating Tuesday through Friday, 10:00 A.M. to 6:00 P.M. servicing one to three clients per day with services including facials, brow lamination, lash lifts, airbrush spray tanning, and energetic healing sessions. Additionally, all appointments are scheduled to reduce customer wait times and to reduce potential impacts to parking.

BACKGROUND INFORMATION

General Plan Land Use Designation:	Office
Zoning:	O-PA (Professional/Administrative Office Zone)
Surrounding Zoning and Land Use:	North: R-1-5 (Single-Family Residential) South: State Highway 198 East: O-PA / Nail and Salon West: O-PA / Urban Tree Foundation
Environmental Document	Categorical Exemption No. 2023-38
Site Plan:	N/A

PROJECT EVALUATION

Staff recommends approval of the Conditional Use Permit No. 2023-23, as conditioned, based on the project's consistency with the General Plan Land Use and the Zoning Ordinance.

Land Use Compatibility

The Visalia Zoning Matrix identifies uses such as stand-alone Barbers, Hairstylists, Cosmeticians, Day Spas, and similar uses (wellness studio) as conditionally permitted within the O-PA Zone, requiring submittal and approval of a Conditional Use Permit (CUP). Through the CUP process, potential impacts can be addressed thereby ensuring compatibility between the proposed use and existing surrounding uses.

A mixture of office, medical, salon, and service type uses are currently located within the vicinity of the project site, including an existing wellness studio situated directly to the east at 1506 West Mineral King Avenue, as well as an existing barber shop in a leased space one block to the west at 1640 W Mineral King Avenue. Parking needs for the use will be satisfied by the parking field depicted on the Site Plan in Exhibit "A". Staff concludes that the proposed use will not have a negative impact on the project site and surrounding area.

Parking

The subject site currently provides three striped parking stalls: two parking stalls in the front yard of the property and one ADA stall in the rear as accessed by an alley. The number of parking stalls established for the entire building were based off the general office parking ratio of one stall per 250 square feet of building area. As the total building includes 1,762 square feet of office space, the site would typically be required to have seven striped parking stalls. However, pursuant to Assembly Bill 2097, which went into effect January 1, 2023, this law prohibits public agencies from imposing minimum parking requirements on sites that are located within a half-mile radius of a major transit stop. *(Please note a major transit stop is defined as major transit stop" to include an existing or planned (1) rail or bus rapid transit station, (2) ferry terminal served by bus or rail transit, or (3) intersection of two or more major bus routes with service every 15 minutes or less during peak commute periods.)*

The City of Visalia Transit operates bus service along Route 1 with bus stops located on Main Street and Mooney Boulevard. Route 1 meets the definition of a "major transit stop" and the project site is within a half mile of Route 1 bus stops. Therefore, the site meets parking provisions per AB 2097. However, there is additional paved area west of the ADA parking stall that could be used for additional parking should the owner of the site elect to strip that area for parking.

Environmental Review

The requested action is considered Categorically Exempt under Section 15301 of the Guidelines for the Implementation of the California Environmental Quality Act (CEQA). (Categorical Exemption No. 2023-38). Projects determined to meet this classification consist of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of the use beyond that existing at the time of the lead agency's determination. The types of "existing facilities" itemized in the Class 1 are not intended to be all-inclusive of the types of projects.

RECOMMENDED FINDINGS

1. That the proposed project will not be detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
2. That the proposed conditional use permit is consistent with the policies and intent of the General Plan and Zoning Ordinance. Specifically, the project is consistent with the required findings of Zoning Ordinance Section 17.38.110:
    a. The proposed location of the conditional use permit is in accordance with the objectives of the Zoning Ordinance and the purposes of the zone in which the site is located.
    b. The proposed location of the conditional use and the conditions under which it would be operated or maintained will not be detrimental to the public health, safety, or welfare, nor materially injurious to properties or improvements in the vicinity.
3. That the project is considered Categorically Exempt under Section 15301 of the Guidelines for the Implementation of the California Environmental Quality Act (CEQA). (Categorical Exemption No. 2023-38).

RECOMMENDED CONDITIONS OF APPROVAL

1. That the use shall be operated in substantial compliance with the site plan, floor plan, and operational statement, in Exhibits “A”, “B”, and “C”.
2. That substantial changes to the site plan and/or operational plan, or an intensification of the use, may require evaluation by the Site Plan Review committee and/or an amendment to this Conditional Use Permit.
3. That all building signage shall require a separate building permit.
4. That all applicable federal, state and city laws, codes and ordinances be met.

APPEAL INFORMATION

According to the City of Visalia Zoning Ordinance Section 17.02.145, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal with applicable fees shall be in writing and shall be filed with the City Clerk at 220 North Santa Fe Street Visalia California. The appeal shall specify errors or abuses of discretion by the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the city’s website www.visalia.city or from the City Clerk.

Attachments:

- Related Plans and Policies
- Resolution No. 2023-35
- Exhibit “A” – Site Plan
- Exhibit “B” – Floor Plan
- Exhibit “C” – Operational Statement
- General Land Use Plan Map
- Zoning Map
- Aerial Map
- Location Map

Environmental Document # 2023-38

NOTICE OF EXEMPTION

City of Visalia
315 E. Acequia Ave.
Visalia, CA 93291

To: County Clerk
County of Tulare
County Civic Center
Visalia, CA 93291-4593

Conditional Use Permit No. 2023-23
PROJECT TITLE

1510 W Mineral King Avenue (APN: 093-283-012)
PROJECT LOCATION

Visalia
PROJECT LOCATION - CITY

Tulare
COUNTY

A request to establish a wellness studio in a 450 square foot office space in the O-PA (Professional /Administrative Office) zone.
DESCRIPTION - Nature, Purpose, & Beneficiaries of Project

City of Visalia
NAME OF PUBLIC AGENCY APPROVING PROJECT

Sabrina Jimenez, 1510 W Mineral King, Visalia, CA 93291, 559-403-6652
NAME AND ADDRESS OF APPLICANT CARRYING OUT PROJECT

Same as above
NAME AND ADDRESS OF AGENT CARRYING OUT PROJECT

EXEMPT STATUS: (Check one)

☐ Ministerial - Section 15268
☐ Emergency Project - Section 15269
☒ Categorical Exemption - State type and Section number: **Section 15301**
☐ Statutory Exemptions- State code number:

A request to re-use an existing building, previously used for a physical therapist's office, as a wellness studio. Additionally, there are not proposed alterations or changes to the site or building.
REASON FOR PROJECT EXEMPTION

Nathan Perez, Planning Intern
CONTACT PERSON

(559) 713-4449
AREA CODE/PHONE

July 19, 2023
DATE

ENVIRONMENTAL COORDINATOR
Brandon Smith, AICP

Related Plans & Policies
Conditional Use Permits
(Section 17.38)

17.38.010 Purposes and powers

In certain zones conditional uses are permitted subject to the granting of a conditional use permit. Because of their unusual characteristics, conditional uses require special consideration so that they may be located properly with respect to the objectives of the zoning ordinance and with respect to their effects on surrounding properties. In order to achieve these purposes and thus give the zone use regulations the flexibility necessary to achieve the objectives of this title, the planning commission is empowered to grant or deny applications for conditional use permits and to impose reasonable conditions upon the granting of such permits. (Prior code § 7525)

17.38.020 Application procedures

A. Application for a conditional use permit shall be made to the planning commission on a form prescribed by the commission which shall include the following data:

1. Name and address of the applicant;
2. Statement that the applicant is the owner of the property or is the authorized agent of the owner;
3. Address and legal description of the property;
4. The application shall be accompanied by such sketches or drawings as may be necessary by the planning division to clearly show the applicant's proposal;
5. The purposes of the conditional use permit and the general description of the use proposed;
6. Additional information as required by the historic preservation advisory committee.

B. The application shall be accompanied by a fee set by resolution of the city council sufficient to cover the cost of handling the application. (Prior code § 7526)

17.38.030 Lapse of conditional use permit

A conditional use permit shall lapse and shall become void twenty-four (24) months after the date on which it became effective, unless the conditions of the permit allowed a shorter or greater time limit, or unless prior to the expiration of twenty-four (24) months a building permit is issued by the city and construction is commenced and diligently pursued toward completion on the site which was the subject of the permit. A permit may be renewed for an additional period of one year; provided, that prior to the expiration of twenty-four (24) months from the date the permit originally became effective, an application for renewal is filed with the planning commission. The commission may grant or deny an application for renewal of a conditional use permit. In the case of a planned residential development, the recording of a final map and improvements thereto shall be deemed the same as a building permit in relation to this section. (Ord. 2001-13 § 4 (part), 2001: prior code § 7527)

17.38.040 Revocation

Upon violation of any applicable provision of this title, or, if granted subject to a condition or conditions, upon failure to comply with the condition or conditions, a conditional use permit shall be suspended automatically. The planning commission shall hold a public hearing within sixty (60) days, in accordance with the procedure prescribed in Section 17.38.080, and if not satisfied that the regulation, general provision or condition is being complied with, may revoke the permit or take such action as may be necessary to insure compliance with the regulation, general provision or condition. Appeals of the decision of the planning commission may be made to the city council as provided in Section 17.38.120. (Prior code § 7528)

17.38.050 New application

Following the denial of a conditional use permit application or the revocation of a conditional use permit, no application for a conditional use permit for the same or substantially the same conditional use on the same or substantially the same site shall be filed within one year from the date of denial or revocation of the permit unless such denial was a denial without prejudice by the planning commission or city council. (Prior code § 7530)

17.38.060 Conditional use permit to run with the land

A conditional use permit granted pursuant to the provisions of this chapter shall run with the land and shall continue to be valid upon a change of ownership of the site or structure which was the subject of the permit application subject to the provisions of Section 17.38.065. (Prior code § 7531)

17.38.065 Abandonment of conditional use permit

If the use for which a conditional use permit was approved is discontinued for a period of one hundred eighty (180) days, the use shall be considered abandoned and any future use of the site as a conditional use will require the approval of a new conditional use permit.

17.38.070 Temporary uses or structures

A. Conditional use permits for temporary uses or structures may be processed as administrative matters by the city planner and/or planning division staff. However, the city planner may, at his/her discretion, refer such application to the planning commission for consideration.

B. The city planner and/or planning division staff is authorized to review applications and to issue such temporary permits, subject to the following conditions:

1. Conditional use permits granted pursuant to this section shall be for a fixed period not to exceed thirty (30) days for each temporary use not occupying a structure, including promotional enterprises, or six months for all other uses or structures.
2. Ingress and egress shall be limited to that designated by the planning division. Appropriate directional signing, barricades, fences or landscaping shall be provided where required. A security officer may be required for promotional events.
3. Off-street parking facilities shall be provided on the site of each temporary use as prescribed in Section 17.34.020.
4. Upon termination of the temporary permit, or abandonment of the site, the applicant shall remove all materials and equipment and restore the premises to their original condition.
5. Opening and closing times for promotional enterprises shall coincide with the hours of operation of the sponsoring commercial establishment. Reasonable time limits for other uses may be set by the city planner and planning division staff.
6. Applicants for a temporary conditional use permit shall have all applicable licenses and permits prior to issuance of a conditional use permit.
7. Signing for temporary uses shall be subject to the approval of the city planner.
8. Notwithstanding underlying zoning, temporary conditional use permits may be granted for fruit and vegetable stands on properties primarily within undeveloped agricultural areas. In reviewing applications for such stands, issues of traffic safety and land use compatibility shall be evaluated and mitigation measures and conditions may be imposed to ensure that the stands are built and are operated consistent with appropriate construction standards, vehicular access and off-street parking. All fruits and vegetables sold at such stands shall be grown by the owner/operator or purchased by said party directly from a grower/farmer.

C. The applicant may appeal an administrative decision to the planning commission. (Ord. 9605 § 30 (part), 1996: prior code § 7532)

17.38.080 Public hearing--Notice

A. The planning commission shall hold at least one public hearing on each application for a conditional use permit.

B. Notice of the public hearing shall be given not less than ten days nor more than thirty (30) days prior to the date of the hearing by mailing a notice of the time and place of the hearing to property owners within three hundred (300) feet of the boundaries of the area occupied or to be occupied by the use which is the subject of the hearing, and by publication in a newspaper of general circulation within the city. (Prior code § 7533)

17.38.090 Investigation and report

The planning staff shall make an investigation of the application and shall prepare a report thereon which shall be submitted to the planning commission. (Prior code § 7534)

17.38.100 Public hearing--Procedure

At the public hearing the planning commission shall review the application and the statement and drawing submitted therewith and shall receive pertinent evidence concerning the proposed use and the proposed conditions under which it would be operated or maintained, particularly with respect to the findings prescribed in Section 17.38.110. The planning commission may continue a public hearing from time to time as it deems necessary. (Prior code § 7535)

17.38.110 Action by planning commission

A. The planning commission may grant an application for a conditional use permit as requested or in modified form, if, on the basis of the application and the evidence submitted, the commission makes the following findings:

1. That the proposed location of the conditional use is in accordance with the objectives of the zoning ordinance and the purposes of the zone in which the site is located;

2. That the proposed location of the conditional use and the conditions under which it would be operated or maintained will not be detrimental to the public health, safety or welfare, or materially injurious to properties or improvements in the vicinity.

B. A conditional use permit may be revocable, may be granted for a limited time period, or may be granted subject to such conditions as the commission may prescribe. The commission may grant conditional approval for a permit subject to the effective date of a change of zone or other ordinance amendment.

C. The commission may deny an application for a conditional use permit. (Prior code § 7536)

17.38.120 Appeal to city council

The decision of the City planning commission on a conditional use permit shall be subject to the appeal provisions of Section 17.02.145. (Prior code § 7537) (Ord. 2006-18 § 6, 2007)

17.38.130 Effective date of conditional use permit

A conditional use permit shall become effective immediately when granted or affirmed by the council, or upon the sixth working day following the granting of the conditional use permit by the planning commission if no appeal has been filed.(Prior code § 7539)

RESOLUTION NO. 2023-35

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF VISALIA APPROVING CONDITIONAL USE PERMIT NO. 2023-23, A REQUEST TO ESTABLISH A WELLNESS STUDIO IN A 450 SQUARE FOOT LEASED OFFICE SPACE IN THE O-PA (PROFESSIONAL/ADMINISTRATIVE OFFICE) ZONE. THE SITE IS LOCATED AT 1510 WEST MINERAL KING AVENUE (APN: 093-283-012).

WHEREAS, Conditional Use Permit No. 2023-23, is a request to establish a beauty salon in a 450 square foot leased office space in the O-PA (Professional/Administrative Office) zone. The project site is located at 1510 West Mineral King Avenue (APN: 093-283-012); and

WHEREAS, the Planning Commission of the City of Visalia, after duly published notice did hold a public hearing before said Commission on August 14, 2023; and

WHEREAS, the Planning Commission of the City of Visalia finds the Conditional Use Permit to be in accordance with Chapter 17.38.110 of the Zoning Ordinance of the City of Visalia based on the evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, the Planning Commission finds the project to be Categorically Exempt consistent with the California Environmental Quality Act (CEQA) and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT RESOLVED that the project is exempt from further environmental review pursuant to CEQA Section 15301.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia makes the following specific findings based on the evidence presented:

1. That the proposed project will not be detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
2. That the proposed conditional use permit is consistent with the policies and intent of the General Plan and Zoning Ordinance. Specifically, the project is consistent with the required findings of Zoning Ordinance Section 17.38.110:
    a. The proposed location of the conditional use permit is in accordance with the objectives of the Zoning Ordinance and the purposes of the zone in which the site is located.
    b. The proposed location of the conditional use and the conditions under which it would be operated or maintained will not be detrimental to the public health, safety, or welfare, nor materially injurious to properties or improvements in the vicinity.
3. That the requested action is Categorically Exempt under Section 15301 of the Guidelines for the Implementation of the California Environmental Quality Act (Categorical Exemption No. 2023-38).

BE IT FURTHER RESOLVED that the Planning Commission hereby approves the Conditional Use Permit on the real property here described in accordance with the terms of this resolution under the provisions of Section 17.38.110 of the Ordinance Code of the City of Visalia, subject to the following conditions:

1. That the use shall be operated in substantial compliance with the site plan, floor plan, and operational statement, in Exhibits “A”, “B”, and “C”.
2. That substantial changes to the site plan and/or operational plan, or an intensification of the use, may require evaluation by the Site Plan Review committee and/or an amendment to this Conditional Use Permit.
3. That all building signage shall require a separate building permit.
4. That all applicable federal, state and city laws, codes and ordinances be met.

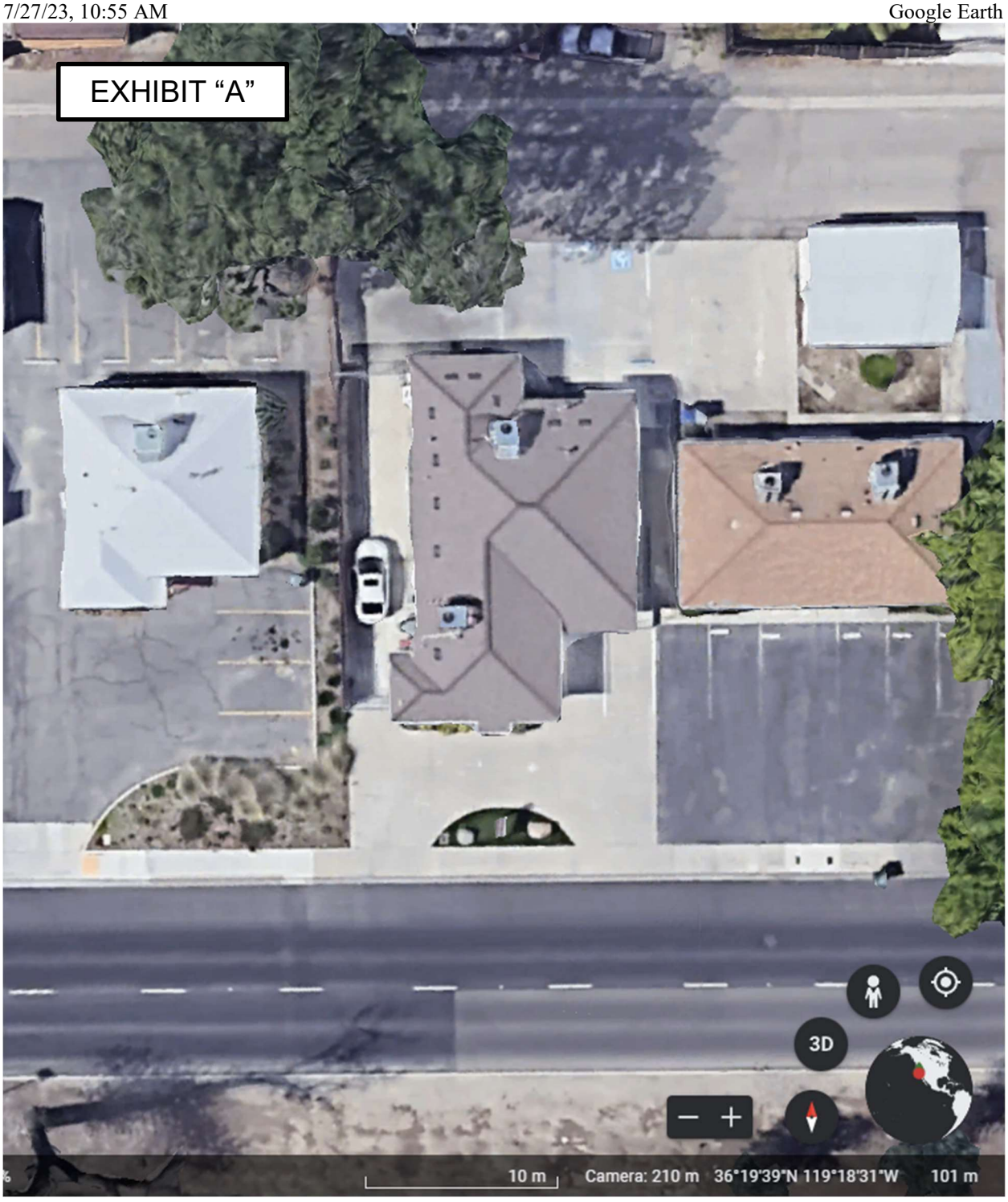

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EXHIBIT “B”

FLOOR PLAN

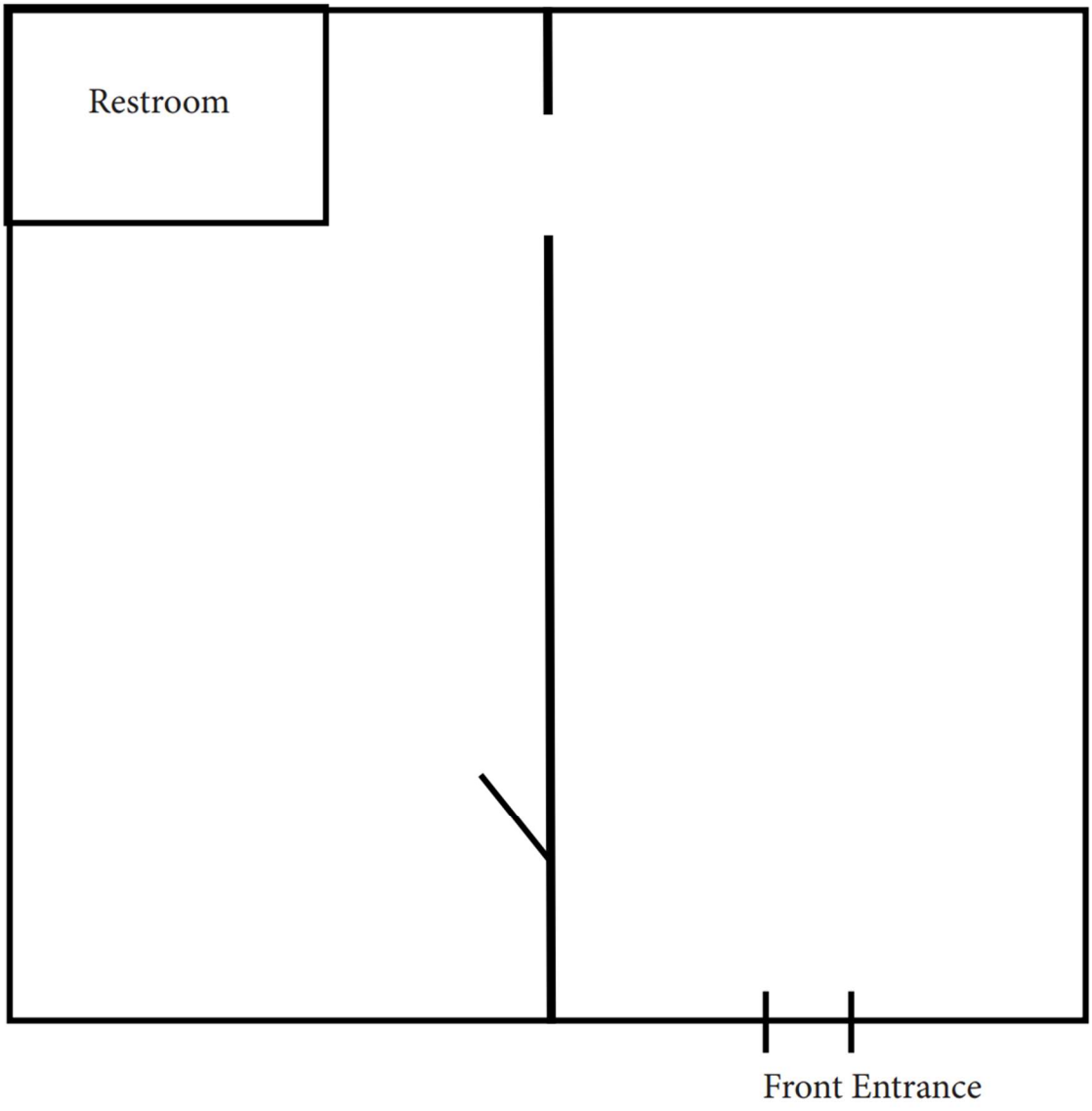


EXHIBIT “C”

Sabrina Jimenez
1510 W Mineral King
Visalia, CA 93291
(559) 403-6652
info@metabeautybar.com

Metamorphosis Isn’t Just for Butterflies…

Empower Your Mind ~ Empower Your Body ~ Embrace The Ultimate You

Summary

At Metamorphosis we are more than just a beauty bar, we are an experience.

We offer a place of wellness and beauty for you to surrender, relax, and unwind while we work to transform your mind, body, and soul one service at a time.

Mission Statement

We offer customizable beauty treatments that fit your needs, desires, and budget.

With our holistic approach to your well-being and noninvasive treatments you will leave feeling relaxed, refreshed, inspired, and wanting to schedule your next appointment.

Services Offered

Facials, Waxing, Brow Lamination, Lash Lifts, Spray Tanning, Energetic Healing

Hours of Operation

By Appointment Only Tuesday-Friday ~10:00-6:00

My name is Sabrina Jimenez, and I am the sole proprietor of Metamorphosis Beauty and Beyond. Metamorphosis Beauty and Beyond is seeking approval for a conditional use permit to operate out of a 450 sq ft leased office space located at 1510 W Mineral King. The proposed office is considered a stand-alone space and separated from the existing business that's currently operating at this location. The proposed office location will also have its own entrance separate from the main office. The building is owned by James Parsley with State Farm Insurance, and he currently operates his business out of the main office.

Metamorphosis Beauty and Beyond is a small multi-functional skincare and wellness studio specializing in a holistic and modern approach to the beauty needs of their clientele. We welcome our clients to experience our customized and signature services such as facials, brow lamination, lash lifts, airbrush spray tanning, and energetic healing sessions.

Our hours of operation are Tuesday through Friday from 10:00 am to 6:00 pm. A normal operating day consists of one to three clients per day. All services are offered by appointment only and we only service one client at a time.

By following this protocol, it will eliminate any need for concern pertaining to heavy traffic, parking issues, or delivery trucks on Mineral King since there will be minimal people throughout the day. This location offers ample parking in the back of the office building as well.

By being granted the conditional use permit for this office space, it will allow me the opportunity to succeed with my business and offer a peaceful environment for my clients seeking solace during their services. Thank you for your time and consideration with this matter.

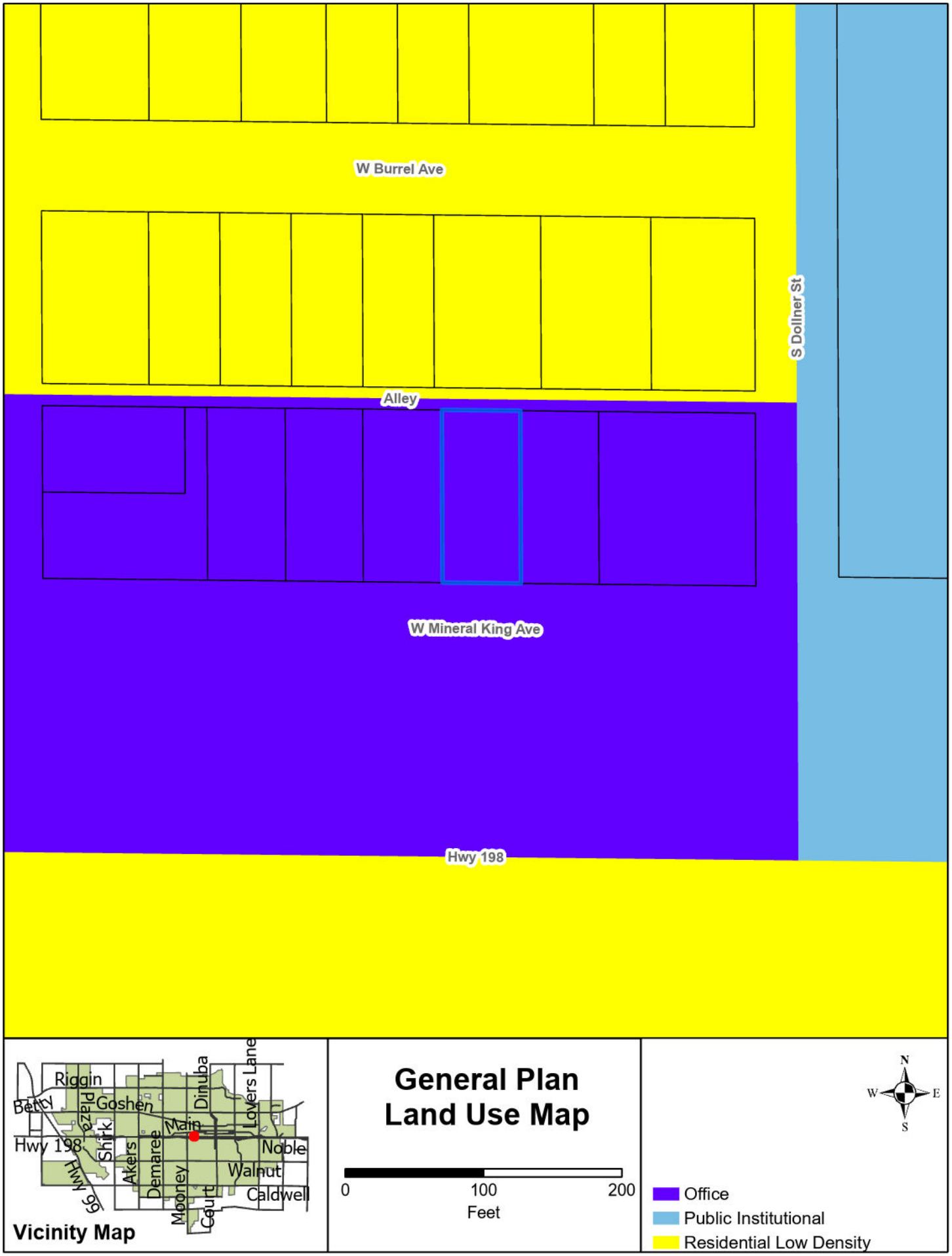
If you should have any questions or need more information, please do not hesitate to contact me directly at (559) 403-6652.

Thank you,

Sabrina Jimenez

Owner

Metamorphosis Beauty and Beyond



Vicinity Map

General Plan Land Use Map

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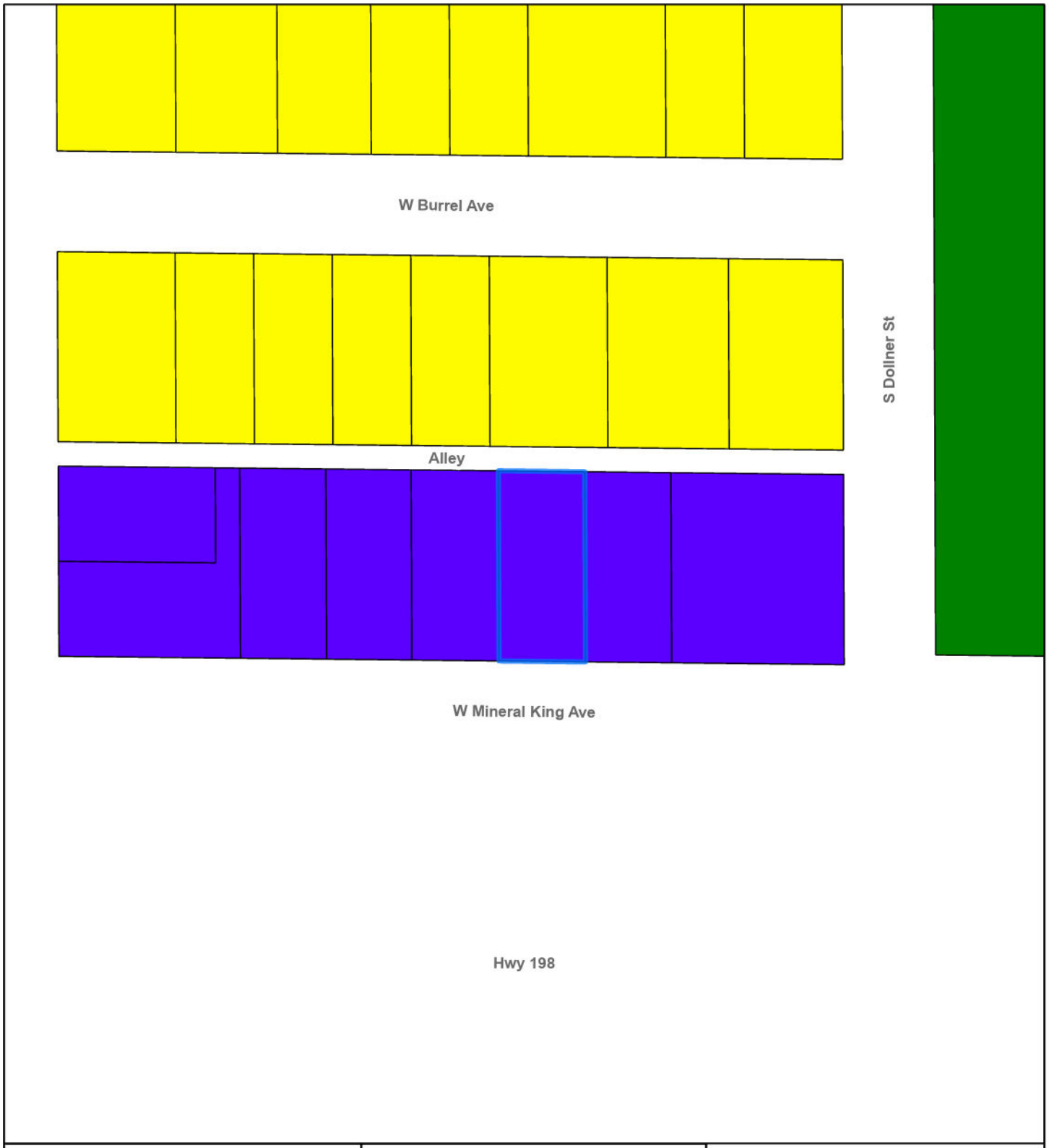
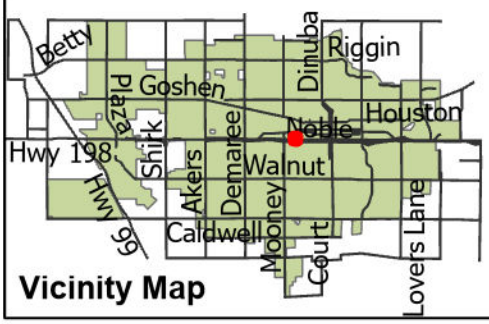
Feet

N
W E
S

- Office
- Public Institutional
- Residential Low Density





Vicinity Map

Zoning Map

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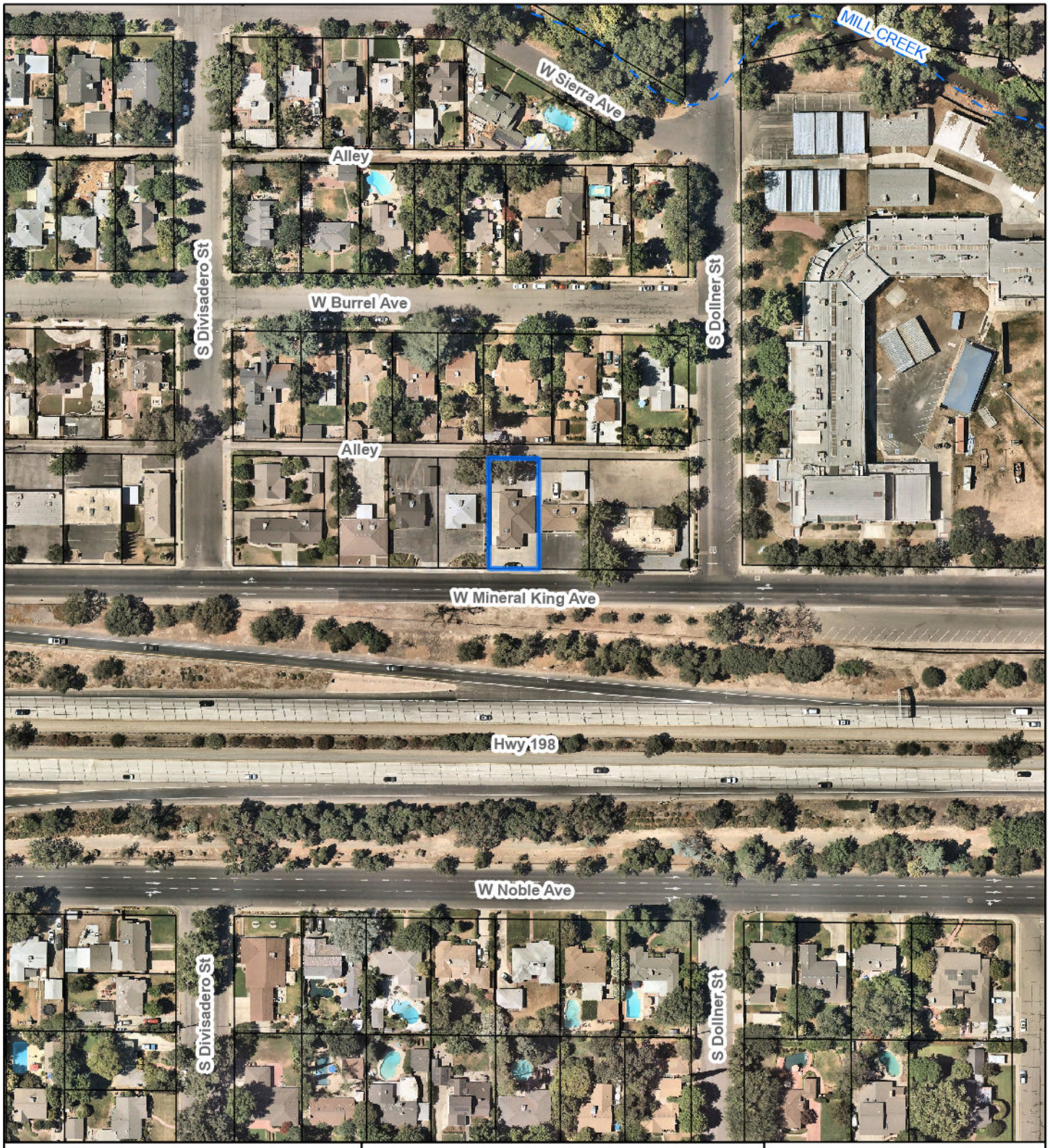
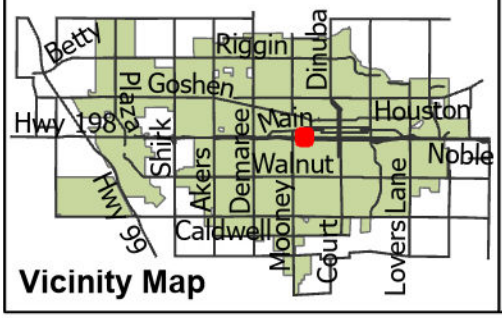
Feet

N W E S

- O-PA Professional / Admin Office
- QP Quasi-Public
- R-1-5 Single-family Residenital





Vicinity Map

Aerial Photo

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Feet

VISALIA

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W Linden Ave
MILL CREEK
W Sierra Ave
Alley
S Divisadero St
S Dollner St
W Burrel Ave
Project Site
Alley
W Mineral King Ave
Hwy 198
W Noble Ave
S Divisadero St
S Dollner St
Vicinity Map
Betty
Goshen
Plaza
Shirk
Akers
Demaree
Dinuba
Riggin
Houston
Noble
Walnut
Mooney
Caldwell
Court
Lovers Lane
Hwy 198
99 HWY
Location Map
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Feet
WATERWAYS
RAILROADS
CITY LIMITS
PARCELS

REPORT TO CITY OF VISALIA PLANNING COMMISSION

HEARING DATE: August 14, 2023

PROJECT PLANNER: Brandon Smith, Principal Planner
Phone No.: (559) 713-4636
Email: brandon.smith@visalia.city

SUBJECT: **Pratt Family Ranch Tentative Subdivision Map No. 5583:** A request to subdivide 49.43 acres into 247 lots for residential use and additional lots for public and private parks, landscape / lighting district lots, and private streets with gated access, to be located within the R-1-5 (Single-Family Residential), R-M-2 (Multi-Family Residential), and QP (Quasi-Public) zone districts upon annexation.

Specific Plan No. 2021-06: A request to establish a new specific plan (Pratt Family Ranch Specific Plan) on 95.56 acres, including districts for low density residential, medium density residential, and parks and open space, and establishment of lots below minimum lot size. Full buildout of the plan will accommodate approximately 541 dwelling units and 8.3 acres of parks & open space, to be developed across Urban Development Boundary Tiers II and III.

General Plan Amendment No. 2021-05: A request to amend the location and acreage of General Plan land use designations within 95.56 acres, resulting in the elimination of Very Low Density Residential designation and redistribution of Low Density Residential, Medium Density Residential, and Parks / Recreation designations.

Annexation No. 2021-04: A request to annex 95.56 acres, located within the City of Visalia Urban Development Boundary Tiers II and III, into the Visalia city limits.

Applicant: D.R. Horton CA3, Inc.

Location: The project site is located north of Riverway Drive on the west and east sides of Mooney Boulevard. (APN: 078-010-025, 028, 029; 078-110-022, 023)

STAFF RECOMMENDATION

Pratt Family Ranch Tentative Subdivision Map No. 5583:

Staff recommends approval of the Pratt Family Ranch Tentative Subdivision Map No. 5583, as conditioned, based on the findings and conditions in Resolution No. 2023-36. Staff's recommendation is based on the conclusion that the request is consistent with the Visalia General Plan, Zoning and Subdivision Ordinances, Housing Accountability Act (Government Code section 65589.5) and the Visalia Housing Element.

General Plan Amendment No. 2021-05, Specific Plan No. 2021-06, Annexation No. 2021-04:

Staff recommends that the Planning Commission recommend that City Council approve these entitlements, as conditioned, based on the findings in Resolution Nos. 2023-37, 2023-38, and 2023-39. Staff's recommendation is based on the conclusion that the request is consistent with the Visalia General Plan.

RECOMMENDED MOTION

I move to approve **Pratt Family Ranch Tentative Subdivision Map No. 5583**, based on the findings and conditions in Resolution No. 2023-36.

I move to recommend approval of **General Plan Amendment No. 2021-05**, based on the findings in Resolution No. 2023-38.

I move to recommend approval of **Specific Plan No. 2021-06**, based on the findings and conditions in Resolution No. 2023-39.

I move to recommend approval of **Annexation No. 2021-04**, based on the findings in Resolution No. 2023-37.

PROJECT DESCRIPTION

The applicant, D.R. Horton, CA3, Inc. has filed entitlement applications for the development of a private 541-lot single-family residential subdivision with both public streets and private gated streets, on parcels totaling 95.56 acres located outside of City Limits, within the Tier II and Tier III urban development boundaries. The property will be developed entirely with single-family dwellings on City standard-size lots and on small lots, including some gated small-lot communities. The project site is currently vacant except for one residence, and was previously employed for agricultural use. Entitlements for this project consist of an annexation, tentative subdivision map, adoption of a specific plan (which includes the establishment of a planned residential development), and a general plan amendment.

The request for development across the two growth tiers is being made in accordance with General Plan Land Use Policy LU-P-22, which allows for City Council approval of master plans (or, in this case, a specific plan), following Planning Commission review and recommendation, for sites under a single ownership, which includes developmental land within multiple development tiers.

Annexation No. 2021-04 is a request to annex parcels totaling approximately 95-acres located outside the city limits and within Tulare County (see Exhibit "G"). Upon annexation, the Zoning designations for the project area will consist of R-1-5 (Single-Family Residential 5,000 square foot minimum site area), R-M-2 (Multi-Family Residential, one unit per 3,000 square feet site area) and Q-P (Quasi-Public), consistent with the underlying General Plan land use designations as proposed through the General Plan Amendment.

General Plan Amendment No. 2021-05 is requested to redistribute land use designations that are located upon several sites that are under a single ownership. Current and proposed land use designations are summarized as follows:

Land Use (Zoning) Designation	Existing	Proposed
Very Low Density Residential (R-1-20 zone designation)	16 acres [all in Tier III]	0 acres
Low Density Residential (R-1-5 designation)	51 acres	57 acres (including R.O.W.)
Medium Density Residential (R-M-2 designation)	25 acres [all in Tier II]	31 acres (including R.O.W.)
Parks / Recreation (QP designation)	4 acres [all in Tier II]	8 acres

The property currently has a land use designation of Residential Very Low Density along its north side which abuts a large Parks/Recreation designation on the south side of the St. Johns River, and Residential Medium Density and Park/Recreation designations that are currently confined to Tier II (see Exhibit "H"). The changes in designation will eliminate the Residential Very Low Density Designation and spread the balance of the designations to create a community with mixtures of lot sizes and park and trail amenities, as explained further in the specific plan (see Exhibit "I").

Specific Plan No. 2021-04 establishes the Pratt Family Ranch Specific Plan ("Plan"), which is applicable to the subdivision area plus future development within Tier 3 northerly to Avenue 320 that is also held by the property owner. The purpose of the Plan is to carry out establish land use and development patterns over the Tier 2 and 3 areas in accordance with General Plan Policy LU-P-22. This is further done through the establishment of a Development Agreement, which sets criteria for development between growth tiers and specific improvements to be installed with each tier.

The Plan establishes a master land use plan (see Exhibit "A"), together with the approval of General Plan Amendment No. 2021-05. The Plan further provides design and development standards for the property's residential communities, providing deviations to City development standards (Section 4). For the gated neighborhoods that contain small lot single-family residences on property to be zoned R-M-2, elevations and floor plans for three home models to be associated with the development are provided, each with multiple exterior treatment options. The plans are all two-story units ranging in size from 1,378 square feet to 1,775 square feet of livable space (see Exhibits "E" and "F").

A key feature of the Specific Plan is the placement of parks in the center and southeast portions of the property (see Figure 4-12) and a pedestrian trail contained on minimum 20-foot-wide linear lots connecting the open and gated neighborhoods with St. Johns River and Mooney Boulevard on the south end. The Plan establishes parks and trails with uniform features and amenities, such as landscaping, lighting features, and open space features. The Plan goes into more clear detail in Sections 5, 6, and 7 on the development's circulation, infrastructure, administration and implementation. A separate phasing exhibit (see Exhibit "B") illustrates the order of development along with the placement of the City's growth tier boundary.

The **Pratt Family Ranch Tentative Subdivision Map** is a request to subdivide 49.43 acres into a 247-lot single-family residential subdivision at a density of 4.94 dwelling units per acre (see Exhibit "C"). The subdivision map covers the entirety of the project area that is within Tier II, with a small portion (estimated at 4 acres) that extends into Tier III due to the subdivision's lot and street configuration.

The subdivision, through dedication, will establish right-of-way necessary for curb-to-curb development of collector streets Pratt Avenue and Mooney Boulevard within the subdivision. A round-about, shown on the map in concept form, is proposed for the intersection at Mooney Boulevard & River Way Avenue, to allow Mooney Boulevard to transition easterly and align with the project's eastern boundary.

The subdivision contains three distinct lot types that are confined to different areas of the project site. Two lot types will correspond to the R-1-5 zone or Low Density Residential designation: the 50' x 100' lots (i.e., minimum 5,000 sq. ft.) and the 45' x 90' lots (i.e., minimum 4,050 square feet). These aforementioned lots will utilize public streets and will generally conform to the City's zoning standards, with zone exceptions as described in the Specific Plan. The densities of these two lot types will be 5.2 and 6.4 dwelling units per acre, consistent with the Low Density Residential land use classification of the General Plan, which notes density between 2 to 10 units per acre.

The lots within the R-M-2 zone or Medium Density Residential designation are sized 38' x 72' (i.e., minimum 2,736 square feet). The streets within this portion are gated and to be privately maintained by a homeowner association. No sidewalks will be installed along the private streets. Access to the subdivision will be via gated entries along Mooney Boulevard and via a local street accessible on the north side of Pratt Avenue. The density of this lot types within the subdivision will be 9.8 units per acre, however between the two Medium Density Residential neighborhoods depicted in the Specific Plan, the combined density of the two neighborhoods is 10.0 units per

acre (see Table 4-1). The density range of the Medium Density Residential land use classification of the General Plan is 10 to 15 units per acre.

The Specific Plan will enable deviation from the Visalia Municipal Code standards for lots within the R-1-5 and R-M-2 zones. The deviations are requested in the same manner as a planned residential development, where the deviations are sought in order to maximize benefits to the eventual residents of the development. The deviations are in the forms of setbacks, private streets and gated entries, and neighborhood parks. These deviations are explained further in the Project Evaluation section.

The development will be a gated private subdivision, with private streets, landscape outlots, walking trails, a neighborhood park, and additional amenities, all maintained by a homeowner's association (HOA).

The subdivision map will include the creation of several lettered lots maintained through a Landscaping and Lighting District (LLD). Outlots A through H will be established for purpose of containing landscaping and block walls along Pratt Avenue, Mooney Boulevard, other local streets, and portions of lots adjacent to interior street sides on the corner lots. Outlots C, E, F, and I are a minimum 20-feet in width to provide a trail connecting between the St. Johns River and Mooney Boulevard (see Figure 5-3 in Specific Plan). Outlot I will be a 0.71-acre lot that provides additional open space, and Outlot K will be a 1.61-acre dog park fronting on Mooney Boulevard and Riverway Avenue and thereby accessible to residents in the surrounding area. There will also be separate lots for the gated subdivision's private streets and HOA-maintained park.

The project site is within the City's Urban Development Boundary (UDB) Tier 2 and 3 and is subject to City's Agricultural Preservation Ordinance. This is discussed in greater detail in the Agricultural Preservation Ordinance section of the staff report below.

BACKGROUND INFORMATION

Existing General Plan Land Use Designation:	Residential Very Low Density, Residential Low Density, Residential Medium Density, Parks / Recreation	
Existing County Zoning:	AE-20 and AE-40	
Zoning upon annexation to City:	R-1-5 (Single-family Residential, 5,000 square foot minimum lot size), R-M-2 (Multi-family Residential, one unit per 3,000 sf. Ft. site area), QP (Quasi-Public)	
Surrounding General Plan and Land Use:	North:	Parks/Recreation / Vacant land, St. Johns River
	South:	Residential Low Density / Shannon Ranch single-family subdivision tract
	East:	Residential Very Low Density, Residential Low Density, Residential Medium Density, Parks/Recreation / Row crops
	West:	Residential Very Low Density, Residential Low Density / Vacant land, rural residence
Environmental Review:	Initial Study / Mitigated Negative Declaration No. 2023-37, State Clearinghouse #2023070368	
Special Districts:	None	

RELATED PLANS & POLICIES

Please see attached summary of related plans and policies.

RELATED PROJECTS

None.

PROJECT EVALUATION

Staff supports the annexation based on the project's consistency with the Land Use Element of the General Plan.

Specifically, the annexation will facilitate a residential subdivision development on a 95-acre site in a manner that is consistent with the existing residential neighborhood in the area, particularly the Shannon Ranch subdivision to the south.

Furthermore, staff recommends approval of Pratt Family Ranch Tentative Subdivision Map No. 5583, General Plan Amendment No. 2021-05, and Specific Plan No. 2021-06, based on the project's consistency with the Land Use Element of the General Plan, the Zoning and Subdivision Ordinances, Housing Accountability Act (Government Code section 65589.5) and the Visalia Housing Element for approval of the tentative subdivision map. The subdivision map proposes to develop a parcel of land that is designated for residential development at a density prescribed in the 2030 Visalia General Plan.

Annexation No. 2021-04

The project proponents have filed an application to initiate annexation of the 96-acre project site into the Visalia City limits. The site will be pre-zoned to R-1-5, R-M-2, and QP classifications, consistent with the subject site's corresponding General Plan land use designations. The annexation can be supported on the basis that the proposal is consistent with **Land Use Policy LU-P-21**, which allows for the annexation and development of residential land to occur within the Tier II Urban Development Boundary consistent with the City's Land Use Diagram.

The annexation of the Tier III Urban Development Boundary portion is consistent with **Land Use Policy LU-P-22**, which allows for annexation before development is permitted in Tier III under Policy LU-P-21. The policy explicitly allows for a project to annex and develop while the City still limiting development approvals to land within the Tier II designation.

The site can be serviced with all the requisite utility and infrastructure available to serve the site upon development. Cities can approve tentative maps prior to final approval of the annexation by the local agency formation commission (i.e., LAFCO) but cannot approve a final subdivision map until after the land is annexed and the annexation is recorded through the Tulare County Recorder. Staff has included this requirement as Condition No. 6 of the Pratt Family Ranch Tentative Subdivision Map No. 5583.

Development Agreement

A Development Agreement has been prepared by staff to accompany the proposed project (see Exhibit "J", based upon the proposal of a master-planned site that spans between Tiers II and III.

Specifically, **Land Use Policy LU-P-22** allows for master-planned sites that are under a single ownership or unified control to be annexed and developed, subject to the City Council approval of a master plan (in this case, a specific plan) and a development agreement. The intent of the development agreement is to spell out "details regarding the overall development,

density/intensity and phasing, infrastructure needs and financing, and what each party would do". The development agreement, once entered into between the City and the landowner or developer, would enable the property to annex and develop within Tier III, subject to criteria, while the City is still limiting development approvals to land within the Tier II designation.

The project proponent, on behalf of DR Horton, has specifically requested to allow the Pratt Family Ranch Specific Plan development to begin growth in the Tier II area and to have continuous growth into the Tier III portion of the plan (see memo attached as Exhibit "K"). The proposal of "continuous growth" infers not being interrupted by the requirement of meeting citywide expansion criteria as stated in Land Use Policy LU-P-21. The memo cites how the property has been designed as one cohesive neighborhood with parks, a walking trail, and other amenities that connect development situated in Tiers II and III.

Staff's draft Development Agreement recommends that certain criteria be met before the City will process any subdivision map entitlement in the Tier III area. The intent is to ensure that substantial progress and investment is made in the Tier II area, such that no portion of the Tier II area is being passed over prior to the Tier III area. The criteria are summarized as follows:

- Prior to the processing of a Tier III tentative subdivision map, all phases and lots specified in the Pratt Family Ranch Tentative Subdivision Map No. 5583 shall have final maps recorded with the Tulare County Recorder.
- Prior to the processing of a Tier III tentative subdivision map, permits for new dwelling units shall be issued for approximately 85% of the lots in the Pratt Family Ranch Tentative Subdivision Map No. 5583, based on the following criteria:
    - All (100% of) lots located within Sub Phase 1 of Phase 1 (i.e., 94 lots). This is the Low Density Residential area south of Pratt Avenue.
    - All (100% of) lots located within Sub Phase 2 of Phase 1 (i.e., 60 lots). This is the Medium Density Residential gated community.
    - At least 56 (62% of) lots located within Sub Phases 3 and 4 of Phase 1.
- Prior to the processing of a Tier III tentative subdivision map, improvements for Circulation Element streets, the proposed pedestrian trail and landscaping, HOA parks, and other public areas shown in the Tier II area shall be completed.
- A tentative subdivision map for the Tier III area can be filed and reviewed by the Site Plan Review Committee, and can subsequently be filed with the City of Visalia, but cannot be scheduled for hearing until the above criteria are met.

General Plan Consistency

Land Use Element Policies

The subdivision's design pattern and lot pattern consisting of a minimum lot size of 5,000 square feet is consistent with the site's Residential Low Density land use designation. The entire site has been designated for residential land uses since the adoption of the Visalia General Plan in 2014.

The project is consistent with General Plan **Land Use Policies LU-P-55 and LU-P-56**. The policies allow for residential development consistent with the Low Density Residential designation at a density range between 2 to 10 dwelling units per gross acre, and the Medium Density Residential designation at a density range between 10 to 15 dwelling units per gross acre.

Low Density Residential

Areas of the project designated as Low Density Residential will be developed at residential densities ranging between 5.0 and 6.4 units per acre consistent with the Low Density Residential

General Plan land use designation as well as the R-1-5 zoning district. The policy states: *"this designation is intended to provide for single-family subdivisions."* Compatibility with the surrounding area is required by the General Plan in the decision to approve the proposed subdivision. The proposed subdivision meets all codified standards contained in the Zoning and Subdivision Ordinances, as well as all General Plan policies pertaining to residential development. Staff finds that the proposed tentative subdivision map is compatible with the surrounding area and the Low Density Residential land use designation.

Medium Density Residential

The two areas of the Specific Plan designated as Medium Density Residential will have a combined density of 10.0 units per acre consistent with the Medium Density Residential General Plan land use designation as well as the R-M-2 zoning district. The Medium Density Residential designated area within the tentative subdivision map will be 9.8 units per acre.

The policy states: *"this designation can accommodate a mix of housing types including small-lot single-family … on infill lots or new development areas within walking distance of neighborhood nodes and corridors."* A commercial node, located on the northeast and northwest corners of Mooney Blvd. and Riggin Ave., is within one-half mile of the southern boundary of the project site. The proposed subdivision meets all codified standards contained in the Zoning and Subdivision Ordinances, as well as all General Plan policies pertaining to residential development.

Currently there is no other development surrounding the Medium Density Residential portions of the project site, except for the balance of the Pratt Family Ranch Specific Plan development. The two areas designated for small lot subdivisions will only directly abut the Specific Plan's R-1-5 zoned lots that are 4,250 sq. ft. in size (see Exhibit "A"), thereby providing a suitable transition between the Low and Medium Density areas. The balance of the Medium Density area will be bordered by arterial streets (Mooney and Avenue 320) on the north and east, and the landscape lots containing the pedestrian trail on the west and south.

The proposed subdivision does not meet all codified standards contained in the Zoning and Subdivision Ordinances. The applicant proposes setbacks that are smaller than what is required under the R-1-5 and R-M-2 standards, along with private streets. To address this, the applicant has submitted a Specific Plan which serves as a request for a Planned Residential Development, to permit deviations from Zoning Ordinance standards. The deviations are discussed in the Development Standards section of this report. As it stands, the proposal meets the intent of the Low and Medium Density Residential land use designations. The proposed deviations will still result in a development within the density limits of the land use designations.

Elimination of Very Low Density Residential

The existing General Plan land use map shows 16 acres of Residential Very Low Density designation (i.e., 0.1 to 2 dwelling units / gross acre) on the north sides of the property, at a depth of approximately 440 feet. The designation was implemented with the General Plan Update in 2014 and is intended to serve as a buffer on the outer perimeter of the City's growth area as it approaches the St. John's River, wherein residences would be permitted at a lesser density. **Land Use Policy LU-P-54** addresses the use of the Very Low Density Residential designation as an opportunity for a rural residential transition to surrounding agricultural areas.

The applicant has provided a response to the elimination of the designation, stating in Section 3.2 of the Specific Plan that *"the Very Low Density is starting to phase out in the housing market and with the ever-growing need of housing, high-density homes are a more desirable use of land."*

Staff finds that the removal of the designation at this location would not be wholly inconsistent with the General Plan's objectives and policies. At this location, the St. Johns River corridor serves as a natural boundary to growth and to agriculture uses on the other side, and a Parks /Recreation

designation further buffers the existing Very Low Density Designation from the St. Johns River. Thus, removal of the designation is not anticipated to result in growth inducing or intensification effects, given that there are other existing locations along the south side of the St. Johns River where development abuts directly to the St. John's River's riparian setback.

Housing Accountability Act (Government Code section 66589.5)

The Housing Accountability Act (HAA) requires local agencies to approve housing developments that are consistent with applicable general plan, zoning, and subdivision standards, including design review, if they were in effect at the time that the housing development application was deemed complete. A local agency cannot disapprove a project or lower its density unless it finds by a preponderance of the evidence that the project would have a specific, adverse impact on public health or safety, and that there is no feasible way to mitigate or avoid the impact[1].

With approval of the attached Planned Residential Development as detailed per the specific plan, the project is considered to be consistent, compliant, and in conformity with the General Plan, Zoning Ordinance, and single-family residential development standards. The lots proposed for Pratt Family Ranch subdivision meet density standards for the Very Low Density Residential land use designation and will be compatible with surrounding developed residential areas. Furthermore, the subdivision will develop a private network of local streets and improve adjacent Collector and Arterial public roadways, thereby facilitating increased street connectivity to accommodate future growth areas.

Background on Specific Plans

Specific plans are a type of guiding and policy utilized in California jurisdictions. Whereas general plans provide context, land uses, objectives and goals for an entire jurisdiction (i.e., county-wide or city-wide), a specific plan covers part of an area covered by the general plan. When being written for a particular document, a specific plan can also include zoning regulations for the mix of land uses within it, including architectural standards if desired. Specific plans may be voluntarily initiated by one or more property owners, or may be required or recommended by a general plan document. In this instance, the Pratt Family Ranch Specific Plan is being proposed based on Visalia General Plan Policy LU-P-22.

Specific plans are regulated by state law per Government Code Sections 65450 through 65457, and regulated by Visalia city law per Municipal Code Chapter 12.04 (see Related Plans and Policies for full text).

Development Standards

The Specific Plan (Table 4-1) and Tentative Subdivision Map (table at bottom of page 1) identify three unique minimum lot sizes that will be utilized in neighborhoods within the project area, summarized as follows:

- 50' x 100' (5,000 sq. ft.): Low Density Residential Designation / R-1-5 Zoning
- 45' x 90' (4,050 sq. ft.): Low Density Residential Designation / R-1-5 Zoning
- 38' x 72' (2,736 sq. ft.): Medium Density Residential Designation / R-M-2 Zoning

Setbacks and development standards for each neighborhood type are described below. Conformance of the development standards and any changes described herein will be enforced through Condition No. 1 of the Specific Plan.

[1] Gov. Code Section 65589.5(j)(1).

Low Density Residential, Lot size 50' x 100'

The lots with maximum size of 5,000 sq. ft. resemble City-standard R-1-5 zone district lots that would utilize standard single-family residential standards together with City standard street design.

Specific Plan Table 4-2 provides development standards for Low Density Residential lots, which comprise the 5,000 sq. ft. lots and the 4,050 sq. ft. lots. However, since the 5,000 sq. ft. lots have the ability to utilize typical City development standards for the single-family residential (R-1-5 zone) product, Staff is recommending that the City standards be utilized, excepting that rear yards for one-story dwellings may have a 20-foot setback to the rear property line. This is being recommended as conditions of approval in the TSM and Specific Plan.

Minimum Lot Area	Front	Side	Street Side	Rear
5,000 sq. ft.	15-ft. to habitable space. 22-ft. to garage	5-ft.	10-ft.	25-ft. for 2-story 20-ft. for 1-story

All lots will have lot depths ranging from approximately 100 feet to 113 feet, excepting lots located on knuckle street bulbs that account for roughly 10% of the total lot count. These lots will also be required to utilize standard single-family residential setback standards but are permitted to have a 20-foot setback for front-loading garages as identified in Section 17.12.080.C of the Zoning Ordinance.

It should be noted that these lots, which Staff is recommending that City standards be utilized, are the only lots that will be backing upon developed residential lots (i.e., Shannon Ranch), also within the R-1-5 zone and utilizing City standards.

Low Density Residential, Lot size 45' x 90'

Lots with maximum size of 4,500 sq. ft. are proposed in one district of the Specific Plan and the Tentative Subdivision Map. The Map identities these as Lots 133 through 184 – in total, 52 lots. These lots will be located in the R-1-5 zone and will utilize City standard street design.

Specific Plan Table 4-2 provides development standards for Low Density Residential lots, which comprise the 5,000 sq. ft. lots and the 4,050 sq. ft. lots.

The applicant has specified that the same residential plans/models will be utilized in the 45' x 90' lots and in the 38' x 72' lots.

The Specific Plan may deviate from normal zoning regulations and standards. Staff will consider such deviations if it can be shown that the deviations maximize benefits to the eventual residents of a development. The Specific Plan request entails certain deviations from City standards. Below is a comparison of the City standard setback for the R-1-5 zone and the setbacks as proposed in Table 4-2.

Minimum Lot Area	Front	Garage	Side	Street Side	Rear	Minimum rear yard sq. feet
City Standard R-1-5 Setbacks 5,000 sq. ft. minimum lot size	15'	22'	5'	10'	25'	N/A
Proposed Setbacks 4,000 sq. ft. minimum lot size	15'	20'	5'	10'	15'	675 sq. ft. (45' x 15')

Staff is recommending that the Specific Plan's proposed setbacks be utilized. Staff's recommendation is on the basis that this neighborhood is joined and adjacent to the medium density residential neighborhood which also utilizes deviated setbacks. These lots do not share any property lines with the 5,000 square foot lots. Also, the Specific Plan and Tentative Subdivision Map provide additional open space areas and access to a pedestrian trail that links St. Johns River to Mooney Boulevard.

Medium Density Residential, Lot size 38' x 72'

The Medium Density Residential lots, anticipated to accommodate a detached single-family dwelling, are proposed in two districts of the Specific Plan. One such district is included in the Tentative Subdivision Map. The Map identities these as Lots 185 through 244 – in total, 60 lots. These lots will be located in the R-M-2 zone and will utilize private streets with gated entry.

Specific Plan Table 4-3 provides development standards for these lots.

The applicant has specified that the same residential plans/models will be utilized in the 45' x 90' lots and in the 38' x 72' lots.

The Specific Plan may deviate from normal zoning regulations and standards. Staff will consider such deviations if it can be shown that the deviations maximize benefits to the eventual residents of a development. The Specific Plan request entails certain deviations from City standards.

- Setbacks. Below is a comparison of the City standard setback for the R-M-2 zone and the setbacks as proposed in Table 4-3.

Minimum Lot Area	Front	Garage	Side	Street Side	Rear	Minimum rear yard sq. feet
City Standard R-M-2 Setbacks One unit per 3,000 sq. ft.	15'	22'	5'	10'	25'	N/A
Proposed Setbacks 2.500 sq. ft. minimum lot size	12'	18'	4'	4'	10'	350 sq. ft. (35' x 10')

- Lot Width. City staff from Community Development and Public Works Departments have worked together with the applicant to achieve a subdivision design wherein individual roll-out cans for solid waste and recyclables can be placed on the street curbs, subject to conditions of approval enforced by the HOA.
- Private streets and gated entries. The local streets serving the subdivision are proposed to be privately maintained by an HOA. No sidewalks will be installed along the private streets, with the exception of the internal loop street surrounding the proposed pocket park, and lots leading to said park, which will contain landscaping and an eight-foot-wide trail/sidewalk on one side (see Exhibit "E"). Public access to the subdivision will be via gated entries along South Roeben Street and South Shirk Street. A temporary emergency-only access entry will be installed with Phase 1 of the subdivision, providing a second point of access to West Whitendale Avenue to the south while Phase 1 of the subdivision is under construction.
- HOA park. A 3.7-acre park, identified as Lot F in the subdivision map in Exhibit "A", is proposed to be centrally located and privately maintained by the HOA.

Per the project narrative in Exhibit "H", project amenities will be provided to occupants of the subdivision, to include walking trails and a centralized 3.7-acre park with oak trees, play equipment, and a small amphitheater that will host neighborhood events. The applicant states

that the deviations are requested to allow the lots to accommodate large homes, provide area for generous park space and amenities, and to facilitate the highly walkable, sociable neighborhood envisioned by the developer.

Medium Density Residential Building Elevations/Floor Plans

Building elevations and floor plans for the development are included in Exhibits "F" and "G". Per the submittal, the applicant will be providing single story residences, with 2,515 square feet to 3,507 square feet of livable space. Five floor plans are provided, with three to four bedrooms, each with three distinct design types to choose from. The proposed street facing façades will feature various forms of architectural ornamentation depending on the style chosen, such as batten siding, shutters, mission tile roofing, shingle siding, wood railings, glazed tile over doorways, brick/stone veneers, and metal awnings. The number of plan options provided and architectural detail incorporated support the applicants assertion that the development is unique and provides additional amenities above what is normally proposed. Consistency with the exterior elevations will be enforced through the Building Permit process. Conformance of the floor plans and elevations against the exhibits will be enforced through Condition No. 2 of the Specific Plan.

Landscape and Lighting Assessment District and Block Walls

A Landscaping and Lighting District (LLD) will be required for the long-term maintenance of the out lots, including the linear park, which include blocks walls, streetlights, landscaping, and all park amenities as noted on Exhibit "A".

The block walls along street frontages will be typical City standard block walls. The subdivision map block wall heights will be reduced to three feet where the block wall runs adjacent to the front yard setback areas. The three-foot transition areas are applicable for the corner residential lots within the two subdivisions. Staff has included Map Condition No. 5 to require the stepped down walls.

Traffic Circulation and Street Improvements

The developer of the Pratt Family Ranch subdivision will be required to construct street improvements to arterial and collector roadways as development progresses. The full circulation plan for the entire project, including street cross sections, is shown in Specific Plan Section 5.

Pratt Avenue and Mooney Boulevard are designated 84-foot wide collector streets. Both roadways are currently improved as two-lane County roadways with no frontage improvements on either side. The subdivision map will dedicate the rights-of-way for these roadways. The subdivision's initial development phase (shown in Exhibit "B" as Sub Phase 1 of Phase 1) will improve Pratt Avenue and Mooney Boulevard, south of Pratt Avenue, to their full width. Improvements being added by the subdivision will consist of a 6-foot sidewalk, 5-foot parkway, curb, gutter, parking lane, and Class II bike lane. The asphalt will be improved to accommodate two 12-foot travel lanes and one 8-foot park lane.

As part of the pedestrian trail improvements, there will be minimum 20-foot wide outlots on one side of each street connecting the path from the southern property line (to an existing 8-foot sidewalk) to Zachary Street. All portions of Pratt and Mooney that back to residential development will have 10-foot landscape lots outside of the public right-of-way dedicated through a Landscape and Lighting District. The district provides maintenance of the landscape lots, block walls, street pavement and street lighting.

Mooney Boulevard and Avenue 320. Future development in the Tier III portion will include the improvements of Mooney Boulevard and Avenue 320 on the perimeter of the project area. Mooney Boulevard will continue to be a 84-foot wide collector street with all street improvements on site. Avenue 320 is a designated arterial roadway that will be built with a 55-foot right-of-way,

half of its ultimate width. Currently, there are no built segments of Avenue 320 in the vicinity, and until there is future development to the west towards Demaree Street, Avenue 320 would only serve the project area. Extension of Avenue 320 easterly, across the St. Johns River, is shown as a deferred arterial in the City's General Plan but is not currently being contemplated since there is currently no planned growth across the river.

Traffic Round-About Design

The subdivision map and specific plan show a round-about at the intersection at Mooney Boulevard & River Way Avenue. There is no City policy or regulation that specifies the placement of a round-about at this location, however this type of traffic control has been chosen to allow Mooney Boulevard to more swiftly transition easterly, north of River Way Avenue, to align with the project's eastern boundary.

It is important to note that City staff has not accepted or approved any design for this round-about, and that a fair amount of geometric design is still needed before the City can accept the round-about and lock down its final geometry and design.

Furthermore, it is important to note that the final design may result in reconfiguration of proposed residential lots that back onto the round-about, slight adjustments to the final re-alignments of Mooney Boulevard and Pratt Avenue, and modifications to existing street and landscape improvements at the Mooney and Riverway intersection, including additional right of way for Riverway the transition. The developer's civil engineer will continue to work with the City Engineer and Traffic Engineer to solidify the round-about design.

Traffic Impact Study

A Traffic Impact Study (TIS) was prepared for the proposed project (ref.: Pratt Family Ranch Transportation Impact Study. VRPA Technologies, Inc., July 15, 2022). The purpose of the study is to analyze traffic conditions related to the development of the subdivision and its projected level of service (LOS) at opening year and at five-year increments, and the corresponding environmental impact as required by the California Environmental Quality Act (CEQA).

The TIS identified four intersections in the project vicinity that would experience unacceptable LOS in the long term.

- The TIS examined the intersections of Riggin and County Center and Riggin and Giddings and recommended the installation of traffic signals at these intersections. However, since the time of the preparation of the TIS, traffic signals have been installed at these intersections. The TIS and the environmental study's mitigation measures still recommend that the project contribute to the City's traffic impact fee program, which will directly or indirectly contribute to improvements.
- The intersection of Mooney and Ferguson is forecasted to operate at unacceptable levels under the existing and opening year scenarios (p.m. only). This intersection meets the peak hour signal warrant. With the installation of a traffic signal, the level of service will fall to acceptable levels. The TIS and the environmental study's mitigation measures therefore recommend that the project contribute to the City's traffic impact fee program, which will directly or indirectly contribute to improvements.
- The intersection of Riggin and Dinuba, specifically the eastbound turn lane, is forecasted to operate at unacceptable levels starting at the 10-year horizon. This intersection is already built out with a traffic signal and is managed by Caltrans. The TIS and the environmental study's mitigation measures therefore recommend that the project contribute to the City's traffic impact fee program, which will directly or indirectly contribute to improvements.

In addition, the TIS analyzed the intersection of Mooney and Riverway, which is proposed to have the installation of a roundabout. The TIS did not identify any level of service deficiencies, but due to the roundabout and the necessary transitions to existing roadways, the TIS recommended that later stages of the project approval process include the preparation of a design for the roundabout that is acceptable to the City.

A Vehicle Miles Traveled (VMT) analysis was also conducted by comparing the project's expected VMT per capita to regional averages. Since the study concluded that the project's VMT will be 28.2% less than the regional average, meeting the 16% level of significance threshold, the impacts to VMT are concluded to be less than significant.

Agricultural Preservation Ordinance Requirements

The 95-acre project site is in the City's Tier II and III urban development boundary and is designated as Prime Farmland as defined per the Tulare County Farmland Mapping and Monitoring Program. As a result, the development of this site is subject to the City's recently adopted Agricultural Preservation Ordinance.

On May 15, 2023, the City Council approved the second and final reading of Ordinance No. 2023-02, which adopts an addition to the Visalia Municipal Code referred to as Title 18 "Agricultural Land Preservation", Chapter 18.04 "Agricultural Land Preservation Program". This code creates an Agricultural Preservation Ordinance (APO) to implement Visalia General Plan Land Use Policy LU-P-34.

The APO established a process for the required preservation of agricultural land through the acquisition of agricultural conservation easements or the payment of an in-lieu fee for projects subject to the provisions of the ordinance.

The developer of the project is subject to complying with the requirements of the adopted APO since the site is located with the Tier II urban development boundary. The preserved land obligation shall be calculated at a ratio of one acre of preserved land for each acre of converted land. Converted land acreage shall be calculated by determining the applicable project acreage less the acreage of exclusions. In addition, the preserved land obligation, as established in Section 18.04.070(A), shall be preserved through acquisition of an agricultural easement in accordance with Section 18.04.080, unless eligible for payment of an in-lieu fee in accordance with Section 18.04.090.

The preserved land obligation shall be satisfied prior to issuance of any permit directly authorizing or resulting in disturbance to the project site. Compliance of the ordinance is achieved when either the approved agricultural conservation easement has been recorded or the applicant has remitted the approved in-lieu fee to the qualified entity.

Infrastructure

Water Service: Staff has included Condition No. 5 that requires a valid Will Serve Letter from the California Water Service Company if, prior to development of the subdivision, the determination of water availability letter lapses.

Sanitary Sewer: The sewer system will have to be extended to the boundaries of the development where future connection and extension is anticipated. The sewer system will be sized in order to service the entire subdivision. The sanitary sewer master plan for the entire development will be required to be submitted for approval prior to approval of any portion of the system. The City's Wastewater Treatment Plan has confirmed that it has capacity to effectively accommodate the project's two tiers of development.

Storm Drainage: The storm drainage system will have to be extended to the boundaries of the development where future connection and extension is anticipated. The storm drain system will

be sized in order to service the entire subdivision. A storm drainage plan for each development proposal will be required to be submitted to the City for approval.

Subdivision Map Act Findings

California Government Code Section 66474 lists seven findings for which a legislative body of a city or county shall deny approval of a tentative map if it is able to make any of these findings. These seven "negative" findings have come to light through a recent California Court of Appeal decision (*Spring Valley Association v. City of Victorville*) that has clarified the scope of findings that a city or county must make when approving a tentative map under the California Subdivision Map Act.

Staff has reviewed the seven findings for a cause of denial and finds that none of the findings can be made for the proposed project. The seven findings and staff's analysis are below. Recommended finings in response to this Government Code section are included in the recommended findings for the approval of the tentative subdivision and tentative parcel map.

GC Section 66474 Finding	Analysis
(a) That the proposed map is not consistent with applicable general and specific plans as specified in Section 65451.	The proposed map haw been found to be consistent with the City's General Plan and the proposed Pratt Family Ranch Specific Plan. This is included as recommended Finding No. 1 of the Tentative Subdivision Map.
(b) That the design or improvement of the proposed subdivision is not consistent with applicable general and specific plans.	The proposed design and improvement of the maps have been found to be consistent with the City's General Plan and Pratt Family Ranch Specific Plan. This is included as recommended Finding No. 1 of the Tentative Subdivision Map.
(c) That the site is not physically suitable for the type of development.	The site is physically suitable for the proposed map and its affiliated development plan, which is designated as Low Density Residential, Medium Density Residential, and Parks/Recreation, and is developed at densities that are within the allowed ranges of the specified land use designations. This is included as recommended Finding No. 3 of the Tentative Subdivision and Tentative Parcel Maps.
(d) That the site is not physically suitable for the proposed density of development.	The site is physically suitable for the proposed maps and its affiliated development plan, which is designated as Low Density Residential. This is included as recommended Finding No. 4 of the Tentative Subdivision Map.
(e) That the design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat.	The proposed design and improvements of the map has not been found likely to cause environmental damage or substantially and avoidably injure fish or wildlife or their habitat. This finding is further supported by the project's determination of no new effects under the Guidelines for the Implementation of the California Environmental Quality Act (CEQA), included as recommended Finding No. 6 of the Tentative Subdivision Map.

(f) That the design of the subdivision or type of improvements is likely to cause serious public health problems.	The proposed design of the map has been found to not cause serious public health problems. This is included as recommended Finding No. 2 of the Tentative Subdivision Map.
(g) That the design of the subdivision or the type of improvements will conflict with easements, acquired by the public at large, for access through or use of property within the proposed subdivision.	The proposed design of the map does not conflict with any existing or proposed easements located on or adjacent to the subject property. This is included as recommended Finding No. 5 of the Tentative Subdivision Map.

Environmental Review

An Initial Study and Mitigated Negative Declaration were prepared for the proposed project. Initial Study and Mitigated Negative Declaration No. 2023-37 disclosed that environmental impacts are determined to be less than significant with the incorporation of mitigation to address significant impacts to the following resources:

- One (1) mitigation measure pertaining to Agricultural would reduce impacts of the Project's loss of agricultural land to a level that would be less than significant.
- Seven (7) mitigation measures pertaining to Biological Resources would reduce impacts of the Project to special-status wildlife species (i.e. Swainson's Hawk, San Joaquin Kit Fox, Western Burrowing Owl, American Badger) to a level that would be less than significant.
- Three (3) mitigation measures pertaining to Cultural Resources would reduce the impacts of the Project on the potential of exposing historical or archaeological materials during construction to a level that would be less than significant.
- Two (2) mitigation measures pertaining to submittal of plans for storm water pollution and pollutant discharge would reduce impacts to soil erosion or the loss of topsoil at the Project site to a level that would be less than significant.
- One (1) mitigation measure pertaining to Noise would reduce the impacts of the Project related to construction noise to a level that would be less than significant.
- Two (2) mitigation measures pertaining to payment of transportation impact fees would reduce impacts to traffic at the Project site to a level that would be less than significant.

With the mitigation incorporated into the project, staff concludes that Initial Study and Mitigated Negative Declaration No. 2023-37 adequately analyzes and addresses the proposed project and reduces environmental impacts to a less than significant level.

RECOMMENDED FINDINGS

If the Planning Commission finds that the Annexation, Specific Plan, and General Plan Amendment are consistent with the intent of the General Plan, staff recommends that the following findings be made:

Annexation No. 2021-04

1. That the Annexation is consistent with the intent of the General Plan and Zoning Ordinance, and is not detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
2. That the proposed Annexation, which will re-designate 95 acres of AE-20 (Agricultural Exclusive 20-acre) and AE-40 (Agricultural Exclusive 40-acre) County zone district to approximately 8 acres of QP (Quasi-Public), 57 acres of R-1-5 (Single-family Residential,

5,000 square feet minimum lot size) zone, and 31 acres of R-M-2 (Multi-family Residential, one unit per 3,000 square feet) will not impose new land uses or development that will adversely affect the subject site or adjacent properties.

3. That the parcel is not located within an Agricultural Preserve.
4. That the parcel will be annexed into Voting District 4 per the Council Election Voting District Map.
5. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2023-37, is hereby adopted. Furthermore, the design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

General Plan Amendment No. 2021-05

1. That the proposed General Plan Amendment is consistent with the goals, objectives, and policies of the General Plan, and is not detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
2. That the proposed General Plan Amendment changing 16 acres of Residential Very Low Density designation to 6 acres of Residential Low Density designation, 6 acres of Residential Medium Density, and 4 acres of Parks / Recreation will not impose new land uses or development that will adversely affect the subject site or adjacent properties.
3. That the proposed land use designations under the proposed General Plan Amendment results in land uses that do not impact the rural residential transition at the City's outer limits of its growth boundary or cause growth inducing or intensification effects on the outer limits of the growth boundary, since the St. Johns River corridor serves as a natural boundary to growth and to agriculture uses on the other side, and a Parks/Recreation designation further buffers the existing Very Low Density Designation from the St. Johns River.
4. That the General Plan Amendment will help facilitate additional residential units within the Tier 2 and 3 Urban Development Boundaries. The proposed subdivision is compatible with the adjacent residential uses.
5. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2023-37, is hereby adopted. Furthermore, the design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

Specific Plan No. 2021-06

1. That the Pratt Family Ranch Specific Plan has been prepared in accordance with adopted local ordinance – in particular, Chapter 12.04 of the Visalia Municipal Code.
2. That the Pratt Family Ranch Specific Plan has been prepared in accordance with adopted State law – in particular, Sections 65450 through 65457 of the California Government Code.
3. That the Pratt Family Ranch Specific Plan is consistent with the Visalia General Plan, and in particular, satisfactorily meets the intent of LU-P-22
4. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2023-37, is hereby adopted. Furthermore, the design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

5. That the Pratt Family Ranch Specific Plan is consistent with the intent of the General Plan, Subdivision Ordinance, and Zoning Ordinance, and is not detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the vicinity.

Pratt Family Ranch Tentative Subdivision Map No. 5583

1. That the proposed location and layout of the Pratt Family Ranch Tentative Subdivision Map No. 5583, its improvement and design, and the conditions under which it will be maintained, is consistent with the policies and intent of the General Plan, Zoning Ordinance, and Subdivision Ordinance, and the proposed Pratt Family Ranch Specific Plan. The 49-acre project site, which is the site of the proposed 247 lot single-family residential subdivision, is consistent with Land Use Policy LU-P-19 of the General Plan. Policy LU-P-19 states "ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy."
2. That the proposed Pratt Family Ranch Tentative Subdivision Map No. 5583, its improvement and design, and the conditions under which it will be maintained will not be detrimental to the public health, safety, or welfare, nor materially injurious to properties or improvements in the vicinity, nor is it likely to cause serious public health problems. The project site is bordered by existing residential development to the west and south, and will be compatible with adjacent residential uses that are similarly zoned R-1-5.
3. That the site is physically suitable for the proposed tentative subdivision map. The project is consistent with the intent of the General Plan, Zoning Ordinance and Subdivision Ordinance, and the proposed Pratt Family Ranch Specific Plan, and is not detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the vicinity. The project site is adjacent to land zoned for residential development, and the subdivision itself is designated as Low Density Residential and Medium Density Residential, and developed at densities that are within the allowed ranges of the specified land use designations.
4. That the site is physically suitable for the proposed tentative subdivision map and the project's density, which is consistent with the proposed Low Density Residential General Plan Land Use Designation while being developed at densities between 5.0 and 6.4 units per acre, and the proposed Medium Density Residential General Plan Land Use Designation while being developed at 10.0 units per acre. The design of the proposed subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision. The 247-lot subdivision is designed to comply with the City's Engineering Improvement Standards. Areas of dedication will be obtained as part of the tentative map recording for new street improvements, including the construction of curb, gutter, curb return, sidewalk, parkway landscaping, and pavement.
5. That the design of the proposed subdivision and the type of improvements will not conflict with easements acquired by the public at large for access through or use of property within the proposed subdivision. The 247-lot subdivision is designed to comply with the City's Engineering Improvement Standards. Areas of dedication will be obtained as part of the tentative map recording.
6. The proposed location of the tentative subdivision map is in accordance with the Visalia General Plan and the objectives of the Zoning and Subdivision Ordinances. The proposed location of the subdivision is in accordance with the objectives of the Zoning Ordinance and the purposes of the zone in which the site is located. Multiple General Plan policies identify the implementation of development standards to ensure that new single-family residential development will contribute to positive land use compatibility. The size of the property combined with the number of residential lots proposed is consistent and compatible with existing surrounding residential development.

The proposed project will result in the creation of new single-family residential developments which, for the Low Density Residential portion at a density between 5.0 and 6.4 units per acre, and for the Medium Density Residential portion at a density of 10 units per acre, is consistent with General Plan land use designations of Low and Medium Density Residential and the R-1-5 and R-M-2 zoning designations that will be applied to the site when annexed into the city limits.

7. The Housing Accountability Act (Government Code Section 66589.5) requires local agencies to approve housing developments that are consistent with applicable, objective general plan, zoning, and subdivision standards and criteria, including design review standards, in effect at the time that the housing development project's application is determined to be complete. A local agency cannot disapprove a project or lower its density unless it finds by a preponderance of the evidence that the project would have a specific, adverse impact on public health or safety, and there is no feasible way to mitigate or avoid the impact. There is no evidence that the project would cause quantifiable significant unavoidable impacts on public health and safety. The project is consistent, compliant, and in conformity with the General Plan, Zoning Ordinance and development standards.
8. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2023-37, is hereby adopted. Furthermore, the design of the subdivision or the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

RECOMMENDED CONDITIONS

Annexation No. 2021-04

1. Upon annexation, the territory shall be zoned R-1-5 (Single-Family Residential 5,000 square foot minimum site area), R-M-2 (Multi-Family Residential, one unit per 3,000 square feet site area) and Q-P (Quasi-Public), consistent with the underlying General Plan land use designations as proposed through the General Plan Amendment.
2. That the applicant(s) enter into a Pre-Annexation Agreement with the City which memorializes the required fees, policies, and other conditions applicable to the annexation. The draft Pre-Annexation Agreement is attached herein as Attachment "B" of Resolution No. 2023-37. The agreement is subject to final approval by the City Council of the City of Visalia.

Specific Plan No. 2021-06

1. That the Pratt Family Ranch Specific Plan be adopted in substantial compliance with the Specific Plan attached as Attachment "A" of Resolution No. 2023-39, except incorporating the following modifications:
    a. That separate development standards be utilized for the Low Density Residential neighborhoods having minimum lot sizes of 4,000 and 5,000 square feet as follows:
        i. For the minimum 5,000 square foot lots (i.e., 50-foot x 100-foot), City standards specified in Municipal Code Sections 17.12 080 through 17.12.100 be utilized, excepting that rear yards for one-story dwellings may have a minimum 20-foot setback to the rear property line.
        ii. For the minimum 4,000 square foot lots (i.e., 45-foot x 90-foot), the Specific Plan's proposed setbacks in Table 4-2 be utilized.

2. That dwellings on the lots within the Medium Density Residential land use designations and having minimum 2,500 square foot lot area conform to the floor plans and elevations contained within Exhibits “E” and “F”, which shall be included as an Appendix to the Pratt Family Ranch Specific Plan.
3. That the Pratt Family Ranch Specific Plan be developed in accordance with the development agreement, attached as Exhibit “J”, which shall be signed and recorded prior to the recording of any final maps.

Pratt Family Ranch Tentative Subdivision Map No. 5583

1. That the subdivision map be developed in substantial compliance with the comments and conditions of the Site Plan Review Committee as set forth under Site Plan Review No. 2020-204 incorporated herein by reference.
2. That the Pratt Family Ranch Tentative Subdivision Map No. 5583 be prepared in substantial compliance with the subdivision map in Exhibit “C”.
3. That development standards for this map shall be in compliance with those defined in the Pratt Family Ranch Specific Plan.
4. That the mitigation measures found within the Mitigation Monitoring Plan for Mitigated Negative Declaration No. 2023-37 are hereby incorporated as conditions of the Pratt Family Ranch Tentative Subdivision Map No. 5583.
5. That prior to the issuance of any residential building permit on the site, the applicant / developer shall obtain and provide the City with a valid Will Serve Letter from the California Water Service Company.
6. That approval of the Pratt Family Ranch Tentative Subdivision Map No. 5583 shall not become effective unless Annexation No. 2021-04, placing the project site within the corporate limits of the City of Visalia, is approved by the Tulare County Local Agency Formation Commission (LAFCO) and is fully executed to include all conditions contained in the Pre-Annexation Agreement for Annexation No. 2021-04.
7. That the Project be null and void unless General Plan Amendment No. 2021-05 and Specific Plan No. 2021-06 are approved by the City of Visalia.
8. That all applicable federal, state, regional, and city policies and ordinances be met.

APPEAL INFORMATION

Annexation No. 2021-04, General Plan Amendment No. 2021-05, Specific Plan No. 2021-06

For the Annexation, General Plan Amendment, and Specific Plan, the Planning Commission’s recommendation is advisory only. The final decision will be by the Visalia City Council following a public hearing. Therefore, the Planning Commission’s recommendation in this matter is not appealable.

Pratt Family Ranch Tentative Subdivision Map No. 5583

According to the City of Visalia Subdivision Ordinance Section 16.28.080, an appeal to the City Council may be submitted within ten days following the date of a decision by the Planning Commission. An appeal with applicable fees shall be in writing and shall be filed with the City Clerk at 220 North Santa Fe St., Visalia, CA, 93292. The appeal shall specify errors or abuses of discretion by the Planning Commission, or decisions not supported by the evidence in the record. The appeal form can be found on the City’s website www.visalia.city or from the City Clerk.

Attachments:

- Related Plans and Policies
- Resolution No. 2023-36 – Pratt Family Ranch Tentative Subdivision Map No. 5583
- Resolution No. 2023-37 – Annexation No. 2021-04
  - Attachment “A” – Annexation Area
  - Attachment “B” – Annexation Agreement
- Resolution No. 2023-38 – General Plan Amendment No. 2021-05
- Resolution No. 2023-39 – Specific Plan No. 2021-06
  - Attachment “A” – Pratt Family Ranch Specific Plan
- Exhibit "A" – Plan Area Concept (Figure 4.1 of Specific Plan)
- Exhibit “B” – Phasing Map between Tiers 2 & 3
- Exhibit “C” – Pratt Family Ranch Tentative Subdivision Map No. 5583
- Exhibit "D" – Gated Lot Fit Exhibit
- Exhibit “E” – Gated Lot Model Floor Plans
- Exhibit “F” – Gated Lot Model Elevations
- Exhibit “G” – Annexation Area
- Exhibit “H” – Existing General Plan designations (Figure 3.1 of Specific Plan)
- Exhibit “I” – Proposed General Plan designations (Figure 3.2 of Specific Plan)
- Exhibit “J” – Draft Development Agreement
- Exhibit “K” – Memorandum regarding request for Tier III development
- Initial Study / Mitigated Negative Declaration
- Appendices: IS/MND Technical Studies: Air Quality/GHG, Biological, Cultural Resources, Traffic Impact Study, Water Supply Assessment
- Comments from Site Plan Review Item No. 2020-204
- General Plan Land Use Map
- Zoning Map
- Aerial Map
- Location Map

RELATED PLANS AND POLICIES

General Plan and Zoning: The following General Plan and Zoning Ordinance policies apply to the proposed project:

General Plan Land Use Policies:

LU-P-19: Ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy. The General Plan Land Use Diagram establishes three growth rings to accommodate estimated City population for the years 2020 and 2030. The Urban Development Boundary I (UDB I) shares its boundaries with the 2012 city limits. The Urban Development Boundary II (UDB II) defines the urbanizable area within which a full range of urban services will need to be extended in the first phase of anticipated growth with a target buildout population of 178,000. The Urban Growth Boundary (UGB) defines full buildout of the General Plan with a target buildout population of 210,000. Each growth ring enables the City to expand in all four quadrants, reinforcing a concentric growth pattern.

LU-P-21: Allow annexation and development of residential, commercial, regional retail, and industrial land to occur within the Urban Development Boundary (Tier II) and the Urban Growth Boundary (Tier III) consistent with the City's Land Use Diagram, according to the following phasing thresholds: • "Tier II": Tier II supports a target buildout population of approximately 178,000. The expansion criteria for land in Tier II is that land would only become available for development when building permits have been issued in Tier I at the following levels, starting from April 1, 2010:

Residential: after permits for 5,850 housing units have been issued.

LU-P-22: Allow for City Council approval of master plans, following Planning Commission review and recommendation, for sites under a single ownership or unified control, which may include developable land within both multiple development tiers. Allow for pre-zoning of this master planned land, subject to execution of a development agreement between the City and the land owner conforming to the requirements of Government Code Section 65864 et seq., with the project allowed to annex and develop while the City is still limiting development approvals to land within the Tier I or Tier II designation.

An approved master-planned site then could be annexed before development is permitted in Tier II or Tier III under Policy LU-P-21. The development agreement would spell out details on overall development, density/intensity and phasing, infrastructure needs and financing, and what each party would do. This policy will allow large land owners, with Council approval, to have a longer time frame for development and infrastructure planning, consistent with the vision of the General Plan, and also "nail down" the numbers for their financial partners while still maintaining the City's interest in having concentric growth through a phasing plan.

LU-P-54: Update the Zoning Ordinance to reflect the Very Low Density Residential designation on the Land Use Diagram and create opportunities for residential dwellings at 0.1 to 2 units per gross acre, providing for single-family detached housing on large lots and a rural residential transition to surrounding agricultural areas.

LU-P-55: Update the Zoning Ordinance to reflect the Low Density Residential designation on the Land Use Diagram for development at 2 to 10 dwelling units per gross acre, facilitating new planned neighborhoods and infill development in established areas. This designation is intended to provide for single-family detached housing with densities typical of single-family subdivisions. Duplex units, townhouses, and small-lot detached housing may be incorporated as part of Low Density Residential developments. Development standards will ensure that a desirable single-family neighborhood character is maintained.

LU-P-56: Update the Zoning Ordinance to reflect the Medium Density Residential designation on the Land Use Diagram for development at 10 to 15 dwelling units per gross acre.

This designation can accommodate a mix of housing types including small-lot single-family, townhouses, two- and four-plexes, and garden apartments, on infill lots or new development areas within walking distance of neighborhood nodes and corridors. Medium Density Residential development may also be permitted on corner lots in single-family zones and in infill areas where it can be made to be consistent with adjacent properties through the conditional use process. Development standards will ensure that new development contributes positively to the larger community environment. Projects on sites larger than five acres or involving more than 60 units will require discretionary review.

Municipal Code Chapter 12.04 ADOPTION OFD SPECIFIC PLANS

12.04.010 Adoption.

A. The planning commission shall hold a public hearing on any specific plan, or amendment to any specific plan, and submit their findings and recommendation to city council.

B. City council shall reject or adopt by resolution the specific plan, or specific plan amendment, by a majority vote. (Prior code § 7197.0)

12.04.020 Application to ordinances of city council.

Nothing in this chapter applies to the adoption or amendment of any ordinance by the legislative body, except ordinances expressly adopting or amending a specific plan initiated pursuant to this chapter. (Prior code § 7197.1)

12.04.030 Rules and regulations.

The city council may determine and establish administrative rules and procedures for the application and enforcement of specific plans and regulations, and may assign or delegate such administrative functions, powers and duties to the planning or other agency as may be necessary or desirable. (Prior code § 7197.2)

12.04.040 Boards in aid of administration.

The city council may create boards of review, appeal, and adjustment, in connection with any portion of the specific plan. (Prior code § 7197.3)

12.04.050 Street improvement--Conformance with plan.

No street shall be improved and no sewers or connections or other improvements shall be laid or authorized in any street within any territory for which there is an adopted specific street or highway plan until the matter has been referred to the planning commission for a report as to conformity with such specific street or highway plan unless one of the following conditions applies:

A. The street has been accepted, opened or has otherwise received the legal status of a public street prior to the adoption of the plan;

B. It corresponds with streets shown on the plan;

C. It corresponds with streets shown on a subdivision map or record of survey approved by the legislative body;

D. It corresponds with streets shown on a subdivision map previously approved by the planning commission;

E. It is a local residential street not shown on the specific plan and is approved by the site plan review committee. (Prior code § 7197.4)

12.04.060 Open space and landscaping--Conformance with plan.

No street shall be improved, no sewers or connections or other improvements shall be laid or public building or works, including school buildings, constructed within any territory for which the Council has adopted a specific plan regulating the development of the use of open-space land and landscaping until a finding has been made that the open space and landscaping are in substantial compliance with the adopted specific plan. (Prior code § 7197.5)

12.04.070 Improvements--Cost distribution.

The cost of all public improvements of specific benefit to the area for which there is an adopted specific plan may be distributed among all properties in the plan area based on benefit. City council shall assess the cost of improvements to each property, based on the benefit to that property. The assessment process shall include public hearing affording each property owner affected an opportunity to be heard. The public hearing process may be waived on any parcel where the property owner has voluntarily agreed to the assessment. This agreement shall be recorded and run with the property ownership. The parcel assessment may be collected at the time of building permit issuance and may replace other existing fees where the same improvements are paid for through a new collection method. (Prior code § 7197.6)

Zoning Ordinance Chapter 17.12 R-1 SINGLE-FAMILY RESIDENTIAL ZONE

17.12.010 Purpose and intent.

In the R-1 single-family residential zones (R-1-5, R-1-12.5, and R-1-20), the purpose and intent is to provide living area within the city where development is limited to low density concentrations of one-family dwellings where regulations are designed to accomplish the following: to promote and encourage a suitable environment for family life; to provide space for community facilities needed to compliment urban residential areas and for institutions that require a residential environment; to minimize traffic congestion and to avoid an overload of utilities designed to service only low density residential use.

17.12.015 Applicability.

The requirements in this chapter shall apply to all property within R-1 zone districts.

17.12.050 Site area.

The minimum site area shall be as follows:

Zone	Minimum Site Area
R-1-5	5,000 square feet
R-1-12.5	12,500 square feet
R-1-20	20,000 square feet

A. Each site shall have not less than forty (40) feet of frontage on the public street. The minimum width shall be as follows:

Zone	Interior Lot	Corner Lot
R-1-5	50 feet	60 feet
R-1-12.5	90 feet	100 feet
R-1-20	100 feet	110 feet

B. Minimum width for corner lot on a side on cul-de-sac shall be eighty (80) feet, when there is no landscape lot between the corner lot and the right of way.

17.12.060 One dwelling unit per site.

In the R-1 single-family residential zone, not more than one dwelling unit shall be located on each site, with the exception to Section 17.12.020(J).

17.12.080 Front yard.

A. The minimum front yard shall be as follows:

Zone	Minimum Front Yard
R-1-5	Fifteen (15) feet for living space and side-loading garages and twenty-two (22) feet for front-loading garages or other parking facilities, such as, but not limited to, carports, shade

canopies, or porte cochere. A Porte Cochere with less than twenty-two (22) feet of setback from property line shall not be counted as covered parking, and garages on such sites shall not be the subject of a garage conversion.

R-1-12.5 Thirty (30) feet

R-1-20 Thirty-five (35) feet

B. On a site situated between sites improved with buildings, the minimum front yard may be the average depth of the front yards on the improved site adjoining the side lines of the site but need not exceed the minimum front yard specified above.

C. On cul-de-sac and knuckle lots with a front lot line of which all or a portion is curvilinear, the front yard setback shall be no less than fifteen (15) feet for living space and side-loading garages and twenty (20) feet for front-loading garages.

17.12.090 Side yards.

A. The minimum side yard shall be five feet in the R-1-5 and R-1-12.5 zone subject to the exception that on the street side of a corner lot the side yard shall be not less than ten feet and twenty-two (22) feet for front loading garages or other parking facilities, such as, but not limited to, carports, shade canopies, or porte cocheres.

B. The minimum side yard shall be ten feet in the R-1-20 zone subject to the exception that on the street side of a corner lot the side yard shall be not less than twenty (20) feet.

C. On a reversed corner lot the side yard adjoining the street shall be not less than ten feet.

D. On corner lots, all front-loading garage doors shall be a minimum of twenty-two (22) feet from the nearest public improvement or sidewalk.

E. Side yard requirements may be zero feet on one side of a lot if two or more consecutive lots are approved for a zero lot line development by the site plan review committee.

F. The placement of any mechanical equipment, including but not limited to, pool/spa equipment and evaporative coolers shall not be permitted in the five-foot side yard within the buildable area of the lot, or within five feet of rear/side property lines that are adjacent to the required side yard on adjoining lots. This provision shall not apply to street side yards on corner lots, nor shall it prohibit the surface mounting of utility meters and/or the placement of fixtures and utility lines as approved by the building and planning divisions.

17.12.100 Rear yard.

In the R-1 single-family residential zones, the minimum yard shall be twenty-five (25) feet, subject to the following exceptions:

A. On a corner or reverse corner lot the rear yard shall be twenty-five (25) feet on the narrow side or twenty (20) feet on the long side of the lot. The decision as to whether the short side or long side is used as the rear yard area shall be left to the applicant's discretion as long as a minimum area of one thousand five hundred (1,500) square feet of usable rear yard area is maintained. The remaining side yard to be a minimum of five feet.

B. Accessory structures not exceeding twelve (12) feet may be located in the required rear yard but not closer than three feet to any lot line provided that not more than twenty (20) percent of the area of the required rear yard shall be covered by structures enclosed on more than one side and not more than forty (40) percent may be covered by structures enclosed on only one side. On a reverse corner lot an accessory structure shall not be located closer to the rear property line than the required side yard on the adjoining key lot. An accessory structure shall not be closer to a side property line adjoining key lot and not closer to a side property line adjoining the street than the required front yard on the adjoining key lot.

C. Main structures may encroach up to five feet into a required rear yard area provided that such encroachment does not exceed one story and that a usable, open, rear yard area of at least one thousand five hundred (1,500) square feet shall be maintained. Such encroachment and rear yard area shall be approved by the city planner prior to issuing building permits.

17.12.110 Height of structures.

In the R-1 single-family residential zone, the maximum height of a permitted use shall be thirty-five (35) feet, with the exception of structures specified in Section 17.12.100(B).

17.12.120 Off-street parking.

In the R-1 single-family residential zone, subject to the provisions of Chapter 17.34.

17.12.130 Fences, walls and hedges.

In the R-1 single-family residential zone, fences, walls and hedges are subject to the provisions of Section 17.36.030.

Chapter 17.60 DEVELOPMENT AGREEMENTS

17.60.010 Authority for adoption and applications.

These regulations are adopted under the authority of Government Code Sections 65864--65869.5.

A. Applications.

1. The city planner shall prescribe the form for each application, notice and documents provided for or required under these regulations for the preparation and implementation of development agreements.

2. The city planner may require an applicant to submit such information and supporting data as the city planner considers necessary to process the application.

B. Fees. The city council shall by separate resolution fix the schedule of fees and charges imposed for the filing and processing of each application and document provided for or required under these regulations.

C. Qualification as an Applicant. Only a qualified applicant may file an application to enter into a development agreement. A qualified applicant is a person who has legal or equitable interest in the real property that is the subject of the development agreement. Applicant includes authorized agent. The city planner may require an applicant to submit proof of his interest in the real property and of the authority of the agent to act for the applicant. Before processing the application, the city planner may obtain the opinion of the city attorney as to the sufficiency of the applicant's interest in the real property to enter into the agreement.

D. Proposed Form of Agreement. Each application shall be accompanied by the form of development agreement proposed by the applicant. This requirement may be met by designating the city's standard form of development agreement and including specific proposals for changes in or additions to the language of the standard form.

E. Review of Application. The city planner shall endorse on the application the date it is received. He shall review the application and may reject it if it is incomplete or inaccurate for processing. If he finds that the application is complete, he shall accept it for filing. The city planner shall review the application and determine the additional requirements necessary to complete the agreement. After receiving the required information, a staff report and recommendation shall be prepared, which shall state whether or not the agreement as proposed or in an amended form would be consistent with the general plan and any applicable specific plan. (Ord. 2017-01 (part), 2017: Ord. 9605 § 30 (part), 1996: prior code § 7740)

17.60.020 Hearing and notice.

A. The planning commission and city council shall each hold a public hearing on each application for a development agreement. The city planner shall give notice of intention to consider adoption of the development agreement. Notice of the public hearing shall be given not less than ten days nor more than thirty (30) days prior to the date of the hearing by mailing a notice to all property owners within three hundred (300) feet of the property that is the subject of the proposed development agreement, and by publication in a newspaper of general circulation within the city. The form of the notice of intention to consider adoption of the development agreement shall contain:

1. The time and place of the hearing;

2. A general explanation of the matter to be considered including a general description of the area affected;

3. Other information required by specific provision of these regulations or which the city planner considers necessary or desirable.

B. The failure of any person entitled to notice required by law or these regulations to actually receive such notice, does not affect the authority of the city to enter into a development agreement. No action, inaction or recommendation regarding the proposed development agreement shall be held void or invalid or be set aside by a court by reason of any error, irregularity, informality, neglect or omission ("error") as to any matter pertaining to petition, application, notice, finding, record, hearing, report, recommendation, or any matters of procedure whatever unless after an examination of the entire case, including the evidence, the court is of the opinion that the error complained of was prejudicial and that by reason of the error the complaining party sustained and suffered substantial injury, and that a different result would have been probable if the error had not occurred or existed. There is not presumption that error is prejudicial or that injury was done if error is shown. (Ord. 2017-01 (part), 2017: Ord. 9605 § 30 (part), 1996: prior code § 7741)

17.60.030 Action by planning commission.

A. After the public hearing, the planning commission shall make its recommendation in writing to the city council. The recommendation shall include the planning commission's determination whether or not the following findings can be made:

1. That the proposed development agreement is consistent with the objectives, policies, general land uses and programs specified in the general plan, any applicable specific plan, and/or any proposed amendment to the general plan or applicable specific plan submitted simultaneously and in conjunction with the proposed development agreement;

2. That the proposed development agreement is compatible with the uses authorized in, and the regulations prescribed for, the land use district in which the real property is located;

3. That the proposed development agreement is in conformity with public convenience, general welfare and good land use practice;

4. That the proposed development agreement will not be detrimental to the public health, safety and general welfare;

5. That the proposed development agreement will not adversely affect the orderly development of property or the preservation of property values.

B. The recommendation shall include the reasons for the recommendation. (Ord. 2017-01 (part), 2017: prior code § 7742)

17.60.040 Action by city council.

A. After the city council completes the public hearing, it may accept, modify or disapprove the recommendation of the planning commission. It may, but need not, refer matters not previously considered by the planning commission during its hearing back to the planning commission for report and recommendation.

B. The planning commission may, but need not, hold a public hearing on matters referred back to it by the city council.

C. The city council may not approve the development agreement unless it finds that the provisions of the agreement are consistent with the general plan, and any applicable specific plan. Any proposed change in the general plan or applicable specific plan must be approved prior to, but simultaneously with, the approval of the development agreement.

D. If the city council approves the development agreement, it shall do so by the adoption of an ordinance. Upon the ordinance approving the development agreement taking effect, the city may enter into the agreement. (Ord. 2017-01 (part), 2017: prior code § 7743)

17.60.050 Amendment or cancellation of agreement by mutual consent.

Either party may propose an amendment to or cancellation in whole or in part of the development agreement previously entered into. The procedure for such proposing and adoption of an amendment or cancellation is the same as the procedure for entering into an agreement in the first instance, as prescribed by Sections 17.60.010 through 17.60.040. However, where the city initiates the proposed amendment to or cancellation in whole or in part of the development agreement, it shall first give notice to the property owner of its intention to initiate such proceedings at least thirty (30) days in advance of the giving of notice of intention to consider the amendment or cancellation required by this section. (Ord. 2017-01 (part), 2017: prior code § 7744)

17.60.060 Recordation.

Within ten days after the city enters into the development agreement, the city clerk shall have the agreement recorded with the county recorder. If the parties to the agreement or their successors in interest amend or cancel the agreement as provided in Section 17.60.050, or if the city terminates or modifies the agreement as provided in Section 17.60.050 for failure of the applicant to comply in good faith with the terms or conditions of the agreement, the city clerk shall have notice of such action recorded with the county recorder. (Ord. 2017-01 (part), 2017: prior code § 7745)

17.60.070 Periodic review.

A. Time for and Initiation of Review. The city planning staff shall review the development agreement every twelve (12) months from the date the agreement is entered into. The time for review may be modified either by agreement between the parties or by initiation in one or more of the following ways:

1. Recommendation of the planning staff;

2. Affirmative vote of at least three members of the planning commission;

3. Affirmative vote of at least three members of the city council.

B. Notice of Periodic Review. The city planner shall begin the review proceeding by giving notice to the property owner that the city intends to undertake a periodic review of the development agreement. Following the review of the development agreement, the city planner shall make a determination that the property owner has made good faith performance and compliance with the terms of the agreement. If such finding is made by the city planner, no further action on the part of the city need be taken. If the city planner finds reasonable cause or evidence that the property owner has not demonstrated good faith performance and compliance with the terms of the agreement, such finding constitutes grounds for referring the matter of periodic review before the planning commission in public hearing. The city planner shall give the notice at least thirty (30) days in advance of the time at which the matter will be considered by the planning commission.

C. Public Hearing. The planning commission shall conduct a public hearing at which the property owner must demonstrate good faith compliance with the terms of the agreement. The burden of proof on this issue is upon the property owner.

D. Findings Upon Public Hearing. The planning commission shall determine upon the basis of substantial evidence whether or not the property owner has, for the period under review, complied in good faith with the terms and conditions of the agreement.

E. Procedure Upon Findings.

1. If the planning commission finds and determines on the basis of substantial evidence that the property owner has complied in good faith with the terms and conditions of the agreement during the period under review, the review for that period is concluded;

2. If the planning commission finds and determines on the basis of substantial evidence that the property owner has not complied in good faith with the terms and conditions of the agreement during the period under review, the planning commission may recommend to the city council that the agreement be modified or terminated. (Ord. 2017-01 (part), 2017: Ord. 9605 § 30 (part), 1996: prior code § 7746)

17.60.080 Modification or termination.

A. If, upon a finding under Section 17.60.070(E)(2), the planning commission recommends the modification or termination of the agreement, the city council shall give notice to the property owner of its intention to consider such modification or termination. The notice shall contain:

1. The time and place of the council meeting at which the matter is to be considered;

2. A statement as to whether the city proposes to terminate or to modify the development agreement;

3. Other information that the city considers necessary to inform the property owner of the nature of the proceeding.

B. Action by City Council. At the time and place set for the consideration of modification or termination, the property owner shall be given an opportunity to be heard. The city council may modify or terminate the agreement. The council may, but need not, refer the matter back to the planning commission for further proceedings. The council may impose those conditions to the action it takes as it considers necessary to protect the interests of the city. The decision of the council is final. (Ord. 2017-01 (part), 2017: prior code § 7747)

17.60.090 Moratorium on further development.

In the event that the applicant fails to complete the agreement as specified under Section 17.60.060, or the agreement is terminated as specified under Section 17.60.080, the city council shall enact an urgency ordinance placing a moratorium on further development activities on the property which is the subject of the agreement so terminated. The moratorium shall continue until such time as a new development agreement is executed; or until the property is rezoned or other regulations or controls on the development of the property are enacted that the city considers sufficient to protect its interests. (Ord. 2017-01 (part), 2017: prior code § 7748)

GOVERNMENT CODE SECTION 65450 - 65457

65450. After the legislative body has adopted a general plan, the planning agency may, or if so directed by the legislative body, shall, prepare specific plans for the systematic implementation of the general plan for all or part of the area covered by the general plan.

65451. (a) A specific plan shall include a text and a diagram or diagrams which specify all of the following in detail:
(1) The distribution, location, and extent of the uses of land, including open space, within the area covered by the plan.
(2) The proposed distribution, location, and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan.
(3) Standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable.
(4) A program of implementation measures including regulations, programs, public works projects, and financing measures necessary to carry out paragraphs (1), (2), and (3).
(b) The specific plan shall include a statement of the relationship of the specific plan to the general plan.

65452. The specific plan may address any other subjects which in the judgment of the planning agency are necessary or desirable for implementation of the general plan.

65453. (a) A specific plan shall be prepared, adopted, and amended in the same manner as a general plan, except that a specific plan may be adopted by resolution or by ordinance and may be amended as often as deemed necessary by the legislative body.
(b) A specific plan may be repealed in the same manner as it is required to be amended.

65454. No specific plan may be adopted or amended unless the proposed plan or amendment is consistent with the general plan.

65455. No local public works project may be approved, no tentative map or parcel map for which a tentative map was not required may be approved, and no zoning ordinance may be adopted or amended within an area covered by a specific plan unless it is consistent with the adopted specific plan.

65456. (a) The legislative body, after adopting a specific plan, may impose a specific plan fee upon persons seeking governmental approvals which are required to be consistent with the specific plan. The fees shall be established so that, in the aggregate, they defray but as estimated do not exceed, the cost of preparation, adoption, and administration of the specific plan, including costs incurred pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code. As nearly as can be estimated, the fee charged shall be a prorated amount in accordance with the applicant's relative benefit derived from the specific plan. It is the intent of the Legislature in providing for such fees to charge persons who benefit from specific plans for the costs of developing those specific plans which result in savings to them by reducing the cost of documenting environmental consequences and advocating changed land uses which may be authorized pursuant to the specific plan.
(b) Notwithstanding Section 66016, a city or county may require a person who requests adoption, amendment, or repeal of a specific plan to deposit with the planning agency an amount equal to the estimated cost of preparing the plan, amendment, or repeal prior to its preparation by the planning agency.
(c) Copies of the documents adopting or amending the specific plan, including the diagrams and text, shall be made available to local agencies, and shall be made available to the general public as follows:
(1) Within one working day following the date of adoption, the clerk of the legislative body shall make the documents adopting or amending the plan, including the diagrams and text, available to the public for inspection.
(2) Within two working days after receipt of a request for a copy of the documents adopting or amending the plan, including the diagrams and text, accompanied by payment for the reasonable cost of copying, the clerk shall furnish the requested copy to the person making the request.

(d) A city or county may charge a fee for a copy of a specific plan or amendments to a specific plan in an amount that is reasonably related to the cost of providing that document.

65457. (a) Any residential development project, including any subdivision, or any zoning change that is undertaken to implement and is consistent with a specific plan for which an environmental impact report has been certified after January 1, 1980, is exempt from the requirements of Division 13 (commencing with Section 21000) of the Public Resources Code. However, if after adoption of the specific plan, an event as specified in Section 21166 of the Public Resources Code occurs, the exemption provided by this subdivision does not apply unless and until a supplemental environmental impact report for the specific plan is prepared and certified in accordance with the provisions of Division 13 (commencing with Section 21000) of the Public Resources Code. After a supplemental environmental impact report is certified, the

exemption specified in this subdivision applies to projects undertaken pursuant to the specific plan.
(b) An action or proceeding alleging that a public agency has approved a project pursuant to a specific plan without having previously certified a supplemental environmental impact report for the specific plan, where required by subdivision (a), shall be commenced within 30 days of the public agency’s decision to carry out or approve the project.

RESOLUTION NO 2023-36

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF VISALIA APPROVING PRATT FAMILY RANCH TENTATIVE SUBDIVISION MAP NO. 5583: A REQUEST TO SUBDIVIDE 49.43 ACRES INTO 247 LOTS FOR RESIDENTIAL USE AND ADDITIONAL LOTS FOR PUBLIC AND PRIVATE PARKS, LANDSCAPE / LIGHTING DISTRICT LOTS, AND PRIVATE STREETS WITH GATED ACCESS, TO BE LOCATED WITHIN THE R-1-5 (SINGLE-FAMILY RESIDENTIAL), R-M-2 (MULTI-FAMILY RESIDENTIAL), AND QP (QUASI-PUBLIC) ZONE DISTRICTS UPON ANNEXATION. THE PROJECT SITE IS LOCATED NORTH OF RIVERWAY DRIVE ON THE WEST AND EAST SIDES OF MOONEY BOULEVARD. (APN: 078-010-025, 028, 029; 078-110-022, 023)

WHEREAS, Pratt Family Ranch Tentative Subdivision Map No. 5583 is a request to subdivide 49.43 acres into 247 lots for residential use and additional lots for public and private parks, landscape / lighting district lots, and private streets with gated access, to be located within the R-1-5 (Single-Family Residential), R-M-2 (Multi-Family Residential), and QP (Quasi-Public) zone districts upon annexation. The project site is located north of Riverway Drive on the west and east sides of Mooney Boulevard. (APN: 078-010-025, 028, 029; 078-110-022, 023); and

WHEREAS, the Planning Commission of the City of Visalia, after duly published notice, held a public hearing before said Commission on August 14, 2023; and

WHEREAS, the Planning Commission of the City of Visalia finds the Pratt Family Ranch Tentative Subdivision Map No. 5583 in accordance with Chapter 16.16 of the Subdivision Ordinance of the City of Visalia, based on the evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, an Initial Study was prepared which disclosed that no significant environmental impacts would result from this project; and

NOW, THEREFORE, BE IT RESOLVED that Mitigated Negative Declaration No. 2023-37 was prepared for Annexation No. 2021-04, General Plan Amendment No. 2021-05, Specific Plan No. 2021-06, and Pratt Family Ranch Tentative Subdivision Map No. 5583 consistent with the California Environmental Quality Act and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia makes the following specific findings based on the evidence presented:

1. That the proposed location and layout of the Pratt Family Ranch Tentative Subdivision Map No. 5583, its improvement and design, and the conditions under which it will be maintained, is consistent with the policies and intent of the General Plan, Zoning

Ordinance, and Subdivision Ordinance, and the proposed Pratt Family Ranch Specific Plan. The 49-acre project site, which is the site of the proposed 247 lot single-family residential subdivision, is consistent with Land Use Policy LU-P-19 of the General Plan. Policy LU-P-19 states “ensure that growth occurs in a compact and concentric fashion by implementing the General Plan’s phased growth strategy.”

2. That the proposed Pratt Family Ranch Tentative Subdivision Map No. 5583, its improvement and design, and the conditions under which it will be maintained will not be detrimental to the public health, safety, or welfare, nor materially injurious to properties or improvements in the vicinity, nor is it likely to cause serious public health problems. The project site is bordered by existing residential development to the west and south, and will be compatible with adjacent residential uses that are similarly zoned R-1-5.

3. That the site is physically suitable for the proposed tentative subdivision map. The project is consistent with the intent of the General Plan, Zoning Ordinance and Subdivision Ordinance, and the proposed Pratt Family Ranch Specific Plan, and is not detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the vicinity. The project site is adjacent to land zoned for residential development, and the subdivision itself is designated as Low Density Residential and Medium Density Residential, and developed at densities that are within the allowed ranges of the specified land use designations.

4. That the site is physically suitable for the proposed tentative subdivision map and the project’s density, which is consistent with the proposed Low Density Residential General Plan Land Use Designation while being developed at densities between 5.0 and 6.4 units per acre, and the proposed Medium Density Residential General Plan Land Use Designation while being developed at 10.0 units per acre. The design of the proposed subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision. The 247-lot subdivision is designed to comply with the City’s Engineering Improvement Standards. Areas of dedication will be obtained as part of the tentative map recording for new street improvements, including the construction of curb, gutter, curb return, sidewalk, parkway landscaping, and pavement.

5. That the design of the proposed subdivision and the type of improvements will not conflict with easements acquired by the public at large for access through or use of property within the proposed subdivision. The 247-lot subdivision is designed to comply with the City’s Engineering Improvement Standards. Areas of dedication will be obtained as part of the tentative map recording.

6. The proposed location of the tentative subdivision map is in accordance with the Visalia General Plan and the objectives of the Zoning and Subdivision Ordinances. The proposed location of the subdivision is in accordance with the objectives of the Zoning Ordinance and the purposes of the zone in which the site is located. Multiple General Plan policies identify the implementation of development standards to ensure that new single-family residential development will contribute to positive land use compatibility. The size of the property combined with the number of residential lots proposed is consistent and compatible with existing surrounding residential development.

The proposed project will result in the creation of new single-family residential developments which, for the Low Density Residential portion at a density between 5.0 and 6.4 units per acre, and for the Medium Density Residential portion at a density of 10 units per acre, is consistent with General Plan land use designations of Low and Medium Density Residential and the R-1-5 and R-M-2 zoning designations that will be applied to the site when annexed into the city limits.

7. The Housing Accountability Act (Government Code Section 66589.5) requires local agencies to approve housing developments that are consistent with applicable, objective general plan, zoning, and subdivision standards and criteria, including design review standards, in effect at the time that the housing development project's application is determined to be complete. A local agency cannot disapprove a project or lower its density unless it finds by a preponderance of the evidence that the project would have a specific, adverse impact on public health or safety, and there is no feasible way to mitigate or avoid the impact. There is no evidence that the project would cause quantifiable significant unavoidable impacts on public health and safety. The project is consistent, compliant, and in conformity with the General Plan, Zoning Ordinance and development standards.
8. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2023-37, is hereby adopted. Furthermore, the design of the subdivision or the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

BE IT FURTHER RESOLVED that the Planning Commission hereby approves the tentative subdivision map on the real property herein above described in accordance with the terms of this resolution under the provisions of Section 16.16.110 of the Ordinance Code of the City of Visalia, subject to the following conditions:

1. That the subdivision map be developed in substantial compliance with the comments and conditions of the Site Plan Review Committee as set forth under Site Plan Review No. 2020-204 incorporated herein by reference.
2. That the Pratt Family Ranch Tentative Subdivision Map No. 5583 be prepared in substantial compliance with the subdivision map in Exhibit "C".
3. That development standards for this map shall be in compliance with those defined in the Pratt Family Ranch Specific Plan.
4. That the mitigation measures found within the Mitigation Monitoring Plan for Mitigated Negative Declaration No. 2023-37 are hereby incorporated as conditions of the Pratt Family Ranch Tentative Subdivision Map No. 5583.
5. That prior to the issuance of any residential building permit on the site, the applicant / developer shall obtain and provide the City with a valid Will Serve Letter from the California Water Service Company.
6. That approval of the Pratt Family Ranch Tentative Subdivision Map No. 5583 shall not become effective unless Annexation No. 2021-04, placing the project site within the

corporate limits of the City of Visalia, is approved by the Tulare County Local Agency Formation Commission (LAFCO) and is fully executed to include all conditions contained in the Pre-Annexation Agreement for Annexation No. 2021-04.

7. That the Project be null and void unless General Plan Amendment No. 2021-05 and Specific Plan No. 2021-06 are approved by the City of Visalia.
8. That all applicable federal, state, regional, and city policies and ordinances be met.

RESOLUTION NO. 2023-37

A RESOLUTION BY THE PLANNING COMMISSION OF THE CITY OF VISALIA RECOMMENDING APPROVAL OF ANNEXATION NO. 2021-04 AND DETACHMENT OF PROPERTY FROM COUNTY SERVICE AREA NO. 1, PERTAINING TO PROPERTY TOTALLING APPROXIMATELY 95.56 ACRES INTO THE CITY LIMITS OF VISALIA. UPON ANNEXATION, THE AREA WOULD BE ZONED R-1-5 (SINGLE-FAMILY RESIDENTIAL 5,000 SQUARE FOOT MINIMUM LOT AREA), R-M-2 (MULTI-FAMILY RESIDENTIAL ONE UNIT PER 3,000 SITE AREA), AND QP (QUASI-PUBLIC) ZONE DESIGNATIONS, CONSISTENT WITH THE GENERAL PLAN LAND USE DESIGNATION OF RESIDENTIAL LOW DENSITY, RESIDENTIAL MEDIUM DENSITY, AND PARKS/RECREATION. THE PROJECT SITE IS LOCATED NORTH OF RIVERWAY DRIVE ON THE WEST AND EAST SIDES OF MOONEY BOULEVARD. (APN: 078-010-025, 028, 029; 078-110-022, 023)

WHEREAS, the project proponents approve to initiate proceedings for annexation to said city of territory described on the attached legal description and annexation map included as Attachments “A” and “B” of this resolution; and

WHEREAS, the Planning Commission of the City of Visalia, after a duly published notice, did hold a public hearing on August 14, 2023, and

WHEREAS, the proponent desires to annex said territory to the City of Visalia for the following reasons: 1) The annexation will contribute to and facilitate orderly growth and development of both the City and the territory proposed to be annexed; 2) The annexation will facilitate and contribute to the proper and orderly layout, design and construction of streets, gutters, sanitary and storm sewers and drainage facilities, both within the City and within the territory proposed to be annexed; and 3) The annexation will provide and facilitate proper overall planning and zoning of lands and subdivision of lands in said City and said territory in a manner most conducive of the welfare of said City and said territory; and

WHEREAS, this proposal is made pursuant to the Cortese-Knox-Hertzburg Local Government Reorganization Act of 2000, commencing with Section 56000 of the Government Code of the State of California; and

WHEREAS, the territory proposed to be annexed is uninhabited; and

WHEREAS, the territory proposed to be annexed is located in Voting District 4 as identified in the Election District Map adopted by the City Council on February 22, 2022, per Resolution No. 2022-11; and

WHEREAS, the Planning Commission reviewed this proposal on August 14, 2023, and found it to be consistent with the General Plan; and

WHEREAS, an Initial Study was prepared which disclosed that no significant environmental impacts would result from this project; and

WHEREAS, the Planning Commission hereby makes the following findings with regard to the project:

1. That the Annexation is consistent with the intent of the General Plan and Zoning Ordinance, and is not detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
2. That the proposed Annexation, which will re-designate 95 acres of AE-20 (Agricultural Exclusive 20-acre) and AE-40 (Agricultural Exclusive 40-acre) County zone district to approximately 8 acres of QP (Quasi-Public), 57 acres of R-1-5 (Single-family Residential, 5,000 square feet minimum lot size) zone, and 31 acres of R-M-2 (Multi-family Residential, one unit per 3,000 square feet) will not impose new land uses or development that will adversely affect the subject site or adjacent properties.
3. That the parcel is not located within an Agricultural Preserve.
4. That the parcel will be annexed into Voting District 4 per the Council Election Voting District Map.
5. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2023-37, is hereby adopted. Furthermore, the design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission recommends that the City Council adopt Mitigated Negative Declaration No. 2023-37 prepared for Annexation No. 2021-04, General Plan Amendment No. 2021-05, Specific Plan No. 2021-06, and Pratt Family Ranch Tentative Subdivision Map No. 5583 consistent with the California Environmental Quality Act and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia recommends approval to the City Council of the Annexation described herein, subject to the following conditions:

1. Upon annexation, the territory shall be zoned R-1-5 (Single-Family Residential 5,000 square foot minimum site area), R-M-2 (Multi-Family Residential, one unit per 3,000 square feet site area) and Q-P (Quasi-Public), consistent with the underlying General Plan land use designations as proposed through the General Plan Amendment.
2. That the applicant(s) enter into a Pre-Annexation Agreement with the City which memorializes the required fees, policies, and other conditions applicable to the annexation. The draft Pre-Annexation Agreement is attached herein as Attachment

“B” of Resolution No. 2023-37. The agreement is subject to final approval by the City Council of the City of Visalia.

City of Visalia
Annexation No. ___

ANNEXATION TO THE CITY OF VISALIA AND DETACHMENT FROM TULARE COUNTY SERVICE AREA #__

Description for Annexation

That portion of the Northeast Quarter of Section 28, Township 18 South, Range 24 East, Mount Diablo Base and Meridian, in the County of Tulare, State of California, more particularly described as follows:

COMMENCING at the East Quarter corner of above said Section 28, as shown on the map filed in Book 20 of Parcel Maps, at Page 9, Tulare County Records; thence, along the east line of said Section 28, North 00°09'28" East, a distance of 329.81 feet, more or less; thence, parallel with the south line of the Northeast Quarter of said Section 28, said parallel line also being the south line of Parcel 2 shown on above said parcel map, South 89°58'18" West, a distance of 879.93 feet, more or less, to the southwest corner of said Parcel 2 and the **TRUE POINT OF BEGINNING**; thence,

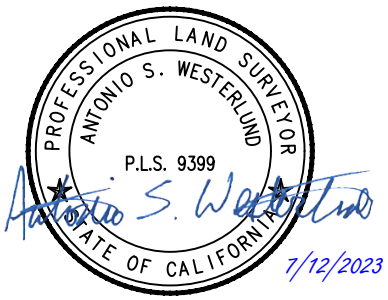
C1) continuing southerly along said course, South 89°58'18" West, a distance of 1760.26 feet, more or less, to the point of intersection with the west line of the Northeast Quarter of said Section 28; thence,

C2) northerly along said west line, North 00°05'16" East, a distance of 997.78 feet, more or less, to the southwest corner of Lot 36 of Kelsey Tract No. 1 as shown on the map filed in Book 16 of Maps, at Page 4, Tulare County Records, said point also being a point on the existing City Limit line; thence,

C3) easterly along the south line of Lots 36, 35 and 34 of said Kelsey Tract No. 1 and the City Limit line, North 89°46'20" East , a distance of 1761.50 feet, more or less, to the point of intersection with the northerly prolongation of the west line of Parcel 1 as shown on the map filed in Book 20 of Parcel Maps, at Page 9, Tulare County Records, said point also being a point on the existing City Limit line; thence,

C4) southerly along said west line and City Limit line and the west line of Parcel 2 shown on above said parcel map, South 00°09'28" West, a distance of 1003.91 feet, more or less, to the **TRUE POINT OF BEGINNING**.

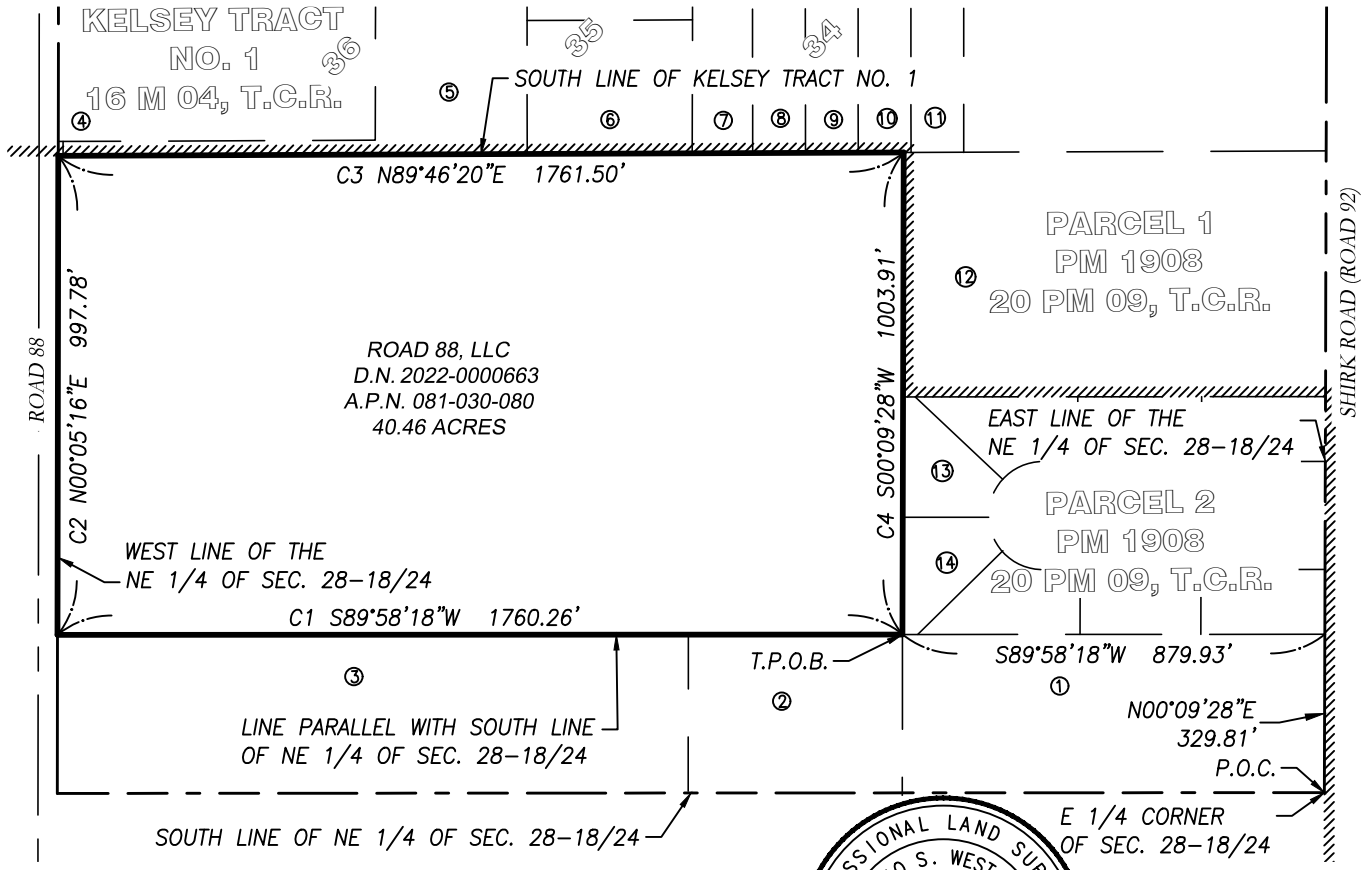
Containing 40.46 acres, more or less.



ANNEXATION NO. _____

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 18 SOUTH, RANGE 24 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF TULARE, STATE OF CALIFORNIA.
AREA: 40.46 ACRES

ANNEXATION TO THE CITY OF VISALIA AND DETACHMENT FROM TULARE COUNTY SERVICE AREA #_



NOTE:

SEE SHEET 2
FOR ALL ADJACENT PROPERTY
ASSESSOR PARCEL NUMBERS

N

0' 400'

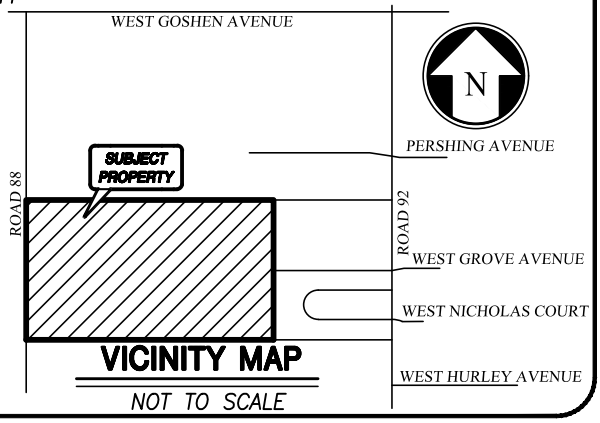
SCALE: 1"= 400'

PROFESSIONAL LAND SURVEYOR
ANTONIO S. WESTERLUND
P.L.S. 9399
STATE OF CALIFORNIA

7/12/2023

LEGEND

D.N.	DOCUMENT NUMBER PER OFFICIAL RECORD OF TULARE COUNTY
T.C.R.	TULARE COUNTY RECORDS
XX M YY	BOOK XX OF MAPS, PAGE YY, T.C.R.
XX PM YY	BOOK XX OF PARCEL MAPS, PAGE YY, T.C.R.
⑭	SEE SHEET 2 FOR APN TABLE
	EXISTING PARCEL LINES
	EXISTING CITY LIMITS
	AREA BEING ANNEXED
	RIGHT-OF-WAY
P.O.C.	POINT OF COMMENCEMENT
T.P.O.B.	TRUE POINT OF BEGINNING
C1	COURSE CALL



VICINITY MAP
NOT TO SCALE

L:\PROJECTS\2021\210315\ACAD\LEGALS\ANNEXATION\210315-ANNEX.DWG 7/12/2023 11:29 AM

PROJECT NO.:	210315
DRAWN BY:	TKF
QA/QC BY:	RCO
SCALE:	1" = 400'
SHEET NO.:	1 OF 2

EXHIBIT B

PLAT TO ACCOMPANY DESCRIPTION
ANNEXATION
CITY OF VISALIA

601 POLLASKY AVE., STE. 301 TEL: (559) 449-2400
CLOVIS, CA 93612 WWW.QKINC.COM

© COPYRIGHT BY QUAD KNOPF, INC. UNAUTHORIZED USE PROHIBITED.

ANNEXATION NO. _____

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 18 SOUTH, RANGE 24 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF TULARE, STATE OF CALIFORNIA.
AREA: 40.46 ACRES

ANNEXATION TO THE CITY OF VISALIA AND DETACHMENT FROM TULARE COUNTY SERVICE AREA #_

ADJACENT PROPERTY OWNERS
ASSESSOR PARCEL NUMBERS

(1)	081-040-005
(2)	081-040-029
(3)	081-030-019
(4)	081-140-003
(5)	081-140-011
(6)	081-140-012
(7)	081-150-012
(8)	081-150-013
(9)	081-150-014
(10)	081-150-015
(11)	081-150-016
(12)	081-030-046
(13)	081-030-054
(14)	081-030-055

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PROJECT NO.:	210315
DRAWN BY:	TKF
QA/QC BY:	RCO
SCALE:	1" = 400'
SHEET NO.:	2 OF 2

EXHIBIT B

PLAT TO ACCOMPANY DESCRIPTION ANNEXATION

CITY OF VISALIA

601 POLLASKY AVE., STE. 301 TEL: (559) 449-2400
CLOVIS, CA 93612 WWW.QKINC.COM
© COPYRIGHT BY QUAD KNOPF, INC. UNAUTHORIZED USE PROHIBITED.

EXHIBIT

Pre-Annexation Agreement

This Pre-Annexation Agreement (”Agreement”) is made and entered into this _____ day of _____, by and among the City of Visalia, a charter law city (“City’) and Michael K & Glenda M Gunning (Trs) (Rev Tr), (hereinafter “Owner”):

RECITALS

WHEREAS, Owners are the record owners of the property, currently located in the unincorporated area of the County of Tulare, legally described in Exhibit A and depicted in Exhibit B, which are attached hereto and incorporated herein by reference (hereinafter referred to as the “Property”); and

WHEREAS, the Property is adjacent to and contiguous to the existing corporate boundary of the City, but is not situated within the limits of any municipality; and

WHEREAS, Owner desires to have the Property annexed to the City and to have the Property zoned as R-1-5 (Single-family Residential, 5,000 square foot minimum lot size), R-M-2 (Multi-family Residential, one unit per 3,000 square feet site area) and Q-P (Quasi-Public) which would permit the Property to be used for land uses consistent with the Low Density Residential, Medium Density, and Parks/Recreation General Plan land use designations; and

WHEREAS, the Property consists of approximately 95.56 acres, and is uninhabited; and

WHEREAS, proper applications have been filed with the City for approval of the annexation and for the legal subdivision of the lot, as may be required for the Property; and

WHEREAS, the City has, by a resolution requesting initiation of proceedings to annex territory (“Resolution”) adopted on _____, 2023, initiated proceedings to annex the Property; and

WHEREAS, in certain annexation proceedings Williamson Act issues arise which require indemnification of LAFCO, in said event, City requires indemnification from Developer; and

WHEREAS, finding __ of Resolution No. 2023-___ initiating annexation requires entry into this Annexation Agreement prior to the City submitting an application to the Local Area Formation Commission to commence the proposed annexation; and

WHEREAS, Owner acknowledges that during the term of this Agreement the Property will be subject to all ordinances, resolutions, and other regulations of the City, as they may be amended from time to time, as well as state and federal statutes and regulations, as they may be amended.

WHEREAS, the City is authorized by its police powers to protect the health, safety and welfare of the community, and is entering into this Agreement and executing such authority for said purpose; and

WHEREAS, nothing contained in this Agreement shall constitute a waiver of the City's legislative, governmental, or police powers to promote and protect the health, safety and welfare of the City and its inhabitants, nor shall this Agreement prohibit the enactment or increase by town of any tax, fee, or charge.

NOW, THEREFORE, in consideration of the above Recitals and the following Covenants, it is agreed by and between the parties as follows:

I. AGREEMENT

A. Parties. The parties to this Agreement are the City and Owner.

B. Incorporation of Recitals. The parties confirm and incorporate the foregoing Recitals into this Agreement.

C. Purpose/Limits of Agreement. A specific purpose of this Agreement is to set forth specific terms and conditions of annexation of the Property to City.

II. TERMS AND CONDITIONS OF ANNEXATION; PURPOSE OF AGREEMENT

Generally, each party to this Agreement is benefited and burdened by detachment from the County and annexation to the City. Owner will obtain a variety of services from City and City will obtain additional tax revenues. City has adopted ordinances, regulations, and policies concerning design, improvement, construction, development and use of property within the City. Nothing contained in this Agreement shall constitute a waiver of City's legislative, governmental, or police powers to promote and protect the health, safety, and welfare of City and its inhabitants, nor shall this Agreement prohibit the enactment or increase by City of any tax or fee. The purpose of this Agreement is to spell out additional conditions to which Owner will be subject following annexation and prior to development within the City due to the burden placed on City by Owner's desired annexation:

A. Water Acquisition Policy: Although City's current water service provider, California Water Service, continues to issue will-serve letters, City's Council is aware of the steadily decreasing level of water in the City's underground water aquifers and has determined that increasing development is contributing to this serious problem. Therefore, City's Council has studied the issue and investigated possible solutions in order

that it may continue to assure citizens that there will be water available to serve the community's needs. City's Council is actively engaged in water replenishment activities with the Kaweah Delta Water Conservation District and it has adopted a policy, as set forth in Chapter 16.54 of the Visalia Municipal Code, which requires annexation applicants to convey title to water rights to City upon annexation and/or to pay a fee to City (pursuant to an adopted fee schedule) so that City may acquire water for groundwater replenishment and storage in order to serve new development that comes with annexation, including development of the Property (the "Water Acquisition Policy"). Therefore, Owner agrees that, at the time that LAFCO issues a Certificate of Completion finalizing the annexation (and upon the running of all applicable statutes of limitation related thereto), Owner will comply with the Water Acquisition Policy by entering into an agreement with City to either (i) convey to City those water rights vested in the Property, if any, (ii) agree to pay City a fee in lieu thereof, (iii) agree to some combination of an in lieu fee payment and water right conveyance, or (iv) to comply by any other method allowed by the Water Acquisition Policy, provided that such agreement includes a condition precedent requiring City's water supplier to agree to serve the Property with potable water in amount sufficient to meet Owner's reasonably anticipated total water demand for the Property, as determined by a valid water supply assessment prepared pursuant to California Water Code § 10910 *et seq*. No post-annexation permit or entitlement approvals concerning the Property will be issued by City unless and until Owner complies with the Water Acquisition Policy in a manner consistent with this subsection II(A). Owner agrees that it shall identify all water rights which, to the best of Owner's knowledge, have been used by Owner or its agents in connection with the Property, regardless of whether they are considered "vested" in the Property, and shall comply with the Water Acquisition Policy by entering into an agreement with City to convey such rights, if any, to City. City shall cooperate with Owner in valuing such water rights for the purposes of determining the amount of offset to be applied against the in lieu fee as required pursuant of the Water Acquisition Policy. Owner further agrees that City shall have first right of refusal in acquiring upon mutually acceptable terms any water rights that Owner owns that may be in addition to those required to meet Owner's obligations under the Water Acquisition Policy. City agrees that water rights need not be conveyed and in lieu fees shall not be made payable until City's issuance of one or more parcel maps or final subdivision maps covering the Property and, in the event Owner applies to City for its approval of multiple final maps covering the Property, City agrees such water rights conveyance or fee payment obligation shall be allocated on a pro rata basis to each phase of development covered by each final subdivision map, with conveyance of water rights or payment to be made on a per map basis upon City's issuance of each final subdivision map covering the Property.

B. General Plan Maintenance Fee: On June 21, 2004, the City adopted (by Resolution 2004-63, as corrected) a General Plan Maintenance Fee. Owner agrees that, at the time LAFCO issues a Certificate of Completion finalizing the annexation (and upon the running of all applicable statutes

of limitation related thereto), Owner will enter into an agreement with City to pay the General Plan Maintenance Fee in an amount equal to $445 per acre and no post-annexation permit or entitlement approvals concerning the Property will be issued unless and until said agreement is executed. City agrees that such fee shall not be made payable until City's issuance of one or more final subdivision maps covering the Property and, in the event Owner applies to City for its approval of multiple final maps covering the Property, City agrees such fee payment obligation shall be allocated on a pro rata basis to each phase of development covered by each final subdivision map, with payment to be made on a per map basis upon City's issuance of each final subdivision map covering the Property. Owner's satisfaction of its obligations under this Section II(B) will satisfy any and all of Owner's obligations related to and arising under the General Plan Maintenance Fee.

C. Plan For Providing Services. The parties agree to cooperate in, and to take such actions as may be necessary to ensure, the diligent preparation of a Plan For Providing Services to the Property, to be submitted to LAFCO along with City's annexation application, in accordance with Cortese-Knox-Hertzberg Act requirements.

Developer understands and agrees that building permits and other entitlements for development on the Property will not be issued unless and until each and every condition herein is met.

III. TERM

The term of this Agreement shall become effective when fully executed by the parties hereto (the "Effective Date") and continue for a period of twenty (20) years. This Agreement shall terminate if (a) the annexation proceedings are terminated for any reason; or (b) the completion of the annexation (recordation of a Certificate of Completion) does not occur on or before one (1) year from the Effective Date. Any indemnification provision included herewith shall survive termination and continue until expiration of the statute of limitations applicable to the subject matter thereof.

IV. DEFAULT, REMEDIES AND ENFORCEMENT

In the event of breach or default of any term, condition, covenant or obligation of this Agreement by either party, the other party may exercise any rights available at law or in equity, including an action for specific performance or other injunctive relief, and all such remedies shall be cumulative. This Agreement shall be enforceable, unless lawfully terminated or cancelled, by any party to the Agreement or any party's successor in interest, notwithstanding any subsequent changes in any applicable law adopted by the City which alters or amends the laws, ordinances, resolutions, rules or policies frozen by this Agreement.

V. INDEMNIFICATION

Owner agrees to indemnify and hold harmless City and the City's officers, employees, agents, and contractors, from and against all liability, claims, causes of actions, and demands, including attorney's fees and court costs, which arise out of or are in any manner connected with this Agreement or its operation, or with any other action annexation or other action determined necessary or desirable by the City in order to effectuate the annexation of Owner's property, or which are in any manner connected with the City's enforcement of this Agreement. Owner further agrees to investigate, handle, respond to, and to provide defense for and defend against or at the City's option to pay the attorney's fees and court costs, which arise out of or are in any manner connected with this Agreement or its operation.

VI. MISCELLANEOUS

a. Binding Effect/Covenants to Run With Land. The Parties hereto agree to be bound by this Agreement. This Agreement shall be binding upon and shall inure to the benefit of the heirs, transferees, successors and assigns of the parties hereto. The terms and conditions stated herein shall constitute covenants running with the land.

b. Assignment. Neither party shall assign, delegate or transfer their rights and duties in this Agreement without the written consent of the other party.

c. Authorized Signatory. The individuals executing this Agreement, by their signature hereto, declare that they are authorized to, and have the legal power, right and actual authority to bind the party to the terms and conditions of this Agreement.

d. Notices. All notices under this Agreement shall be effective upon personal delivery to City, or Owner, as the case may be, three (3) business days after deposit in the United States Mail, postage fully prepaid, addressed to the respective parties as follows:

To the City:
City Manager
City of Visalia
220 N. Santa Fe Street
Visalia, CA 93292

With Copy to:
Kenneth J. Richardson
City Attorney
Peltzer & Richardson
3746 West Mineral King Avenue
Visalia, CA 93291

To Owner:
Michael K & Glenda M Gunning (Trs) (Rev Tr)
_____
_____

Or such other address as the parties may from time to time designate by giving notice as required hereunder.

e. Entire Agreement. This Agreement represents the entire agreement between the City and Owner as to its subject matter and no prior oral or written understanding shall be of any force or affect.

f. Amendment. No part of this Agreement may be modified without the written consent of both parties.

g. Headings. Section headings are provided for organizational purposes only and do not in any manner affect the scope, meaning, or intent of the provisions under the heading.

h. No Third Party Beneficiaries Intended. Except as provided herein, the parties of this Agreement do not intend to provide any other party with any benefit or enforceable legal or equitable right or remedy.

i. Exhibits and Recitals. The recitals and any exhibits to this Agreement are fully incorporated by reference and are integral parts of this Agreement.

j. Conflict With Laws or Regulations/Severability. This Agreement is subject to all applicable laws and regulations. If any provision(s) of this Agreement is found by any court or other legal authority, or is agreed by the parties, to be in conflict with any code or regulation governing this subject, the conflicting provision(s) shall be considered null and void. If the effect of nullifying any conflicting provision is such that a material benefit of the Agreement to either party is lost, the Agreement may be terminated at the option of the effected party. In all other cases, the remainder of the Agreement shall continue in full force and effect.

k. Waiver. A waiver of any breech of this Agreement by any party shall not constitute a continuing waiver or a waiver of any subsequent breech of the same or any other provision of this Agreement.

l. Choice of Law - Venue. This Agreement shall be governed by the laws of the State of California and any questions arising hereunder shall be construed or determined according to such law. Venue for any legal action arising from or in connection with this Agreement or the Property shall be in Tulare County, California.

m. Attorneys Fees. In the event either party commences any action, arbitration or legal proceedings for the enforcement of this Agreement, the prevailing party, as determined by the court or arbitrator, shall be entitled to recovery of its reasonable fees and costs, including attorneys fees, court costs and arbitration costs incurred in the action brought thereon.

n. No Agency, Joint Venture or Partnership. It is understood that this Agreement is a contract that has been negotiated and voluntarily entered

into by City and Owner and that Owner is not an agent of City. City and Owner hereby renounce the existence of any form of joint venture or partnership between them, and agree that nothing contained herein or in any document executed in connection therewith shall be construed as making City and Owner joint venturers or partners.

o. Excusable Delays; Extension of Time of Performance. In the event of delays due to strikes, inability to obtain materials, civil commotion, fire, war, terrorism, lockouts, third-party litigation or other legal challenges regarding the annexation, riots, floods, earthquakes, epidemic, quarantine, freight embargoes, failure of contractors to perform, or other circumstances beyond the reasonable control of the parties and which cause substantially interferes with the ability of either party to perform its obligations under this Agreement, then the time for performance of any such obligation shall be extended for such period of time as the cause of such delay shall exist but in any event not longer than for such period of time.

p. Further Assurances. The parties will execute and deliver, upon demand by the other party, such further documents, instruments and conveyances, and shall take such further actions as such other party may request from time to time to document the transactions set forth herein.

q. Recordation of Agreement; Counterparts. This Agreement, or an abstract of its material terms and conditions shall be recorded by either party in the Official Records of the Tulare County Recorder. This Agreement may be executed in counterparts and, when all counterparts are combined, shall constitute a single agreement.

/////

IN WITNESS WHEREOF, the parties have executed this Agreement on the date set forth next to their signature.

CITY

Date: _____ By: _____
Leslie Caviglia, City Manager

Attest:

Date: _____ By: _____
Michelle Nicholson, City Clerk

Approved as to Form:

Date: _____ By: _____
Kenneth J. Richardson,
City Attorney

OWNER

Date: _____ By: _____
Michael K & Glenda M Gunning
(Trs) (Rev Tr)

RESOLUTION NO. 2023-38

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF VISALIA, RECOMMENDING APPROVAL OF GENERAL PLAN AMENDMENT NO. 2021-05: A REQUEST TO AMEND THE LOCATION AND ACREAGE OF GENERAL PLAN LAND USE DESIGNATIONS WITHIN 95.56 ACRES, RESULTING IN THE ELIMINATION OF VERY LOW DENSITY RESIDENTIAL DESIGNATION AND REDISTRIBUTION OF LOW DENSITY RESIDENTIAL, MEDIUM DENSITY RESIDENTIAL, AND PARKS / RECREATION DESIGNATIONS. THE PROJECT SITE IS LOCATED NORTH OF RIVERWAY DRIVE ON THE WEST AND EAST SIDES OF MOONEY BOULEVARD. (APN: 078-010-025, 028, 029; 078-110-022, 023)

WHEREAS, General Plan Amendment No. 2021-05 is a request to amend the location and acreage of General Plan land use designations within 95.56 acres, resulting in the elimination of Very Low Density Residential designation and redistribution of Low Density Residential, Medium Density Residential, and Parks / Recreation designations. The project site is located north of Riverway Drive on the west and east sides of Mooney Boulevard. (APN: 078-010-025, 028, 029; 078-110-022, 023; and

WHEREAS, the Planning Commission of the City of Visalia, after duly published notice, held a public hearing before said Commission on August 14, 2023; and

WHEREAS, the Planning Commission of the City of Visalia considered General Plan Amendment No. 2021-05 to be in accordance with Section 17.54.070 of the Zoning Ordinance of the City of Visalia based on evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, an Initial Study was prepared which disclosed that no significant environmental impacts would result from this project with the incorporation of mitigation measures.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission recommends that the City Council adopt Mitigated Negative Declaration No. 2023-37 prepared for Annexation No. 2021-04, General Plan Amendment No. 2021-05, Specific Plan No. 2021-06, and Pratt Family Ranch Tentative Subdivision Map No. 5583 consistent with the California Environmental Quality Act and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia recommends approval to the City Council of General Plan Amendment No. 2021-05 based on the following specific findings and evidence presented:

1. That the proposed General Plan Amendment is consistent with the goals, objectives, and policies of the General Plan, and is not detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity.
2. That the proposed General Plan Amendment changing 16 acres of Residential Very Low Density designation to 6 acres of Residential Low Density designation, 6 acres of Residential Medium Density, and 4 acres of Parks / Recreation will not impose new

land uses or development that will adversely affect the subject site or adjacent properties.

3. That the proposed land use designations under the proposed General Plan Amendment results in land uses that do not impact the rural residential transition at the City's outer limits of its growth boundary or cause growth inducing or intensification effects on the outer limits of the growth boundary, since the St. Johns River corridor serves as a natural boundary to growth and to agriculture uses on the other side, and a Parks/Recreation designation further buffers the existing Very Low Density Designation from the St. Johns River.
4. That the General Plan Amendment will help facilitate additional residential units within the Tier 2 and 3 Urban Development Boundaries. The proposed subdivision is compatible with the adjacent residential uses.
5. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2023-37, is hereby adopted. Furthermore, the design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.

BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia recommends approval to the City Council of General Plan Amendment No. 2021-05, as depicted per Exhibit "A", on the real property described herein, in accordance with the terms of this resolution and under the provisions of Section 17.54.070 of the Ordinance Code of the City of Visalia.

Exhibit "A"

GENERAL PLAN AMENDMENT NO. 2021-05
Planning Commission
Resolution No. 2023-38

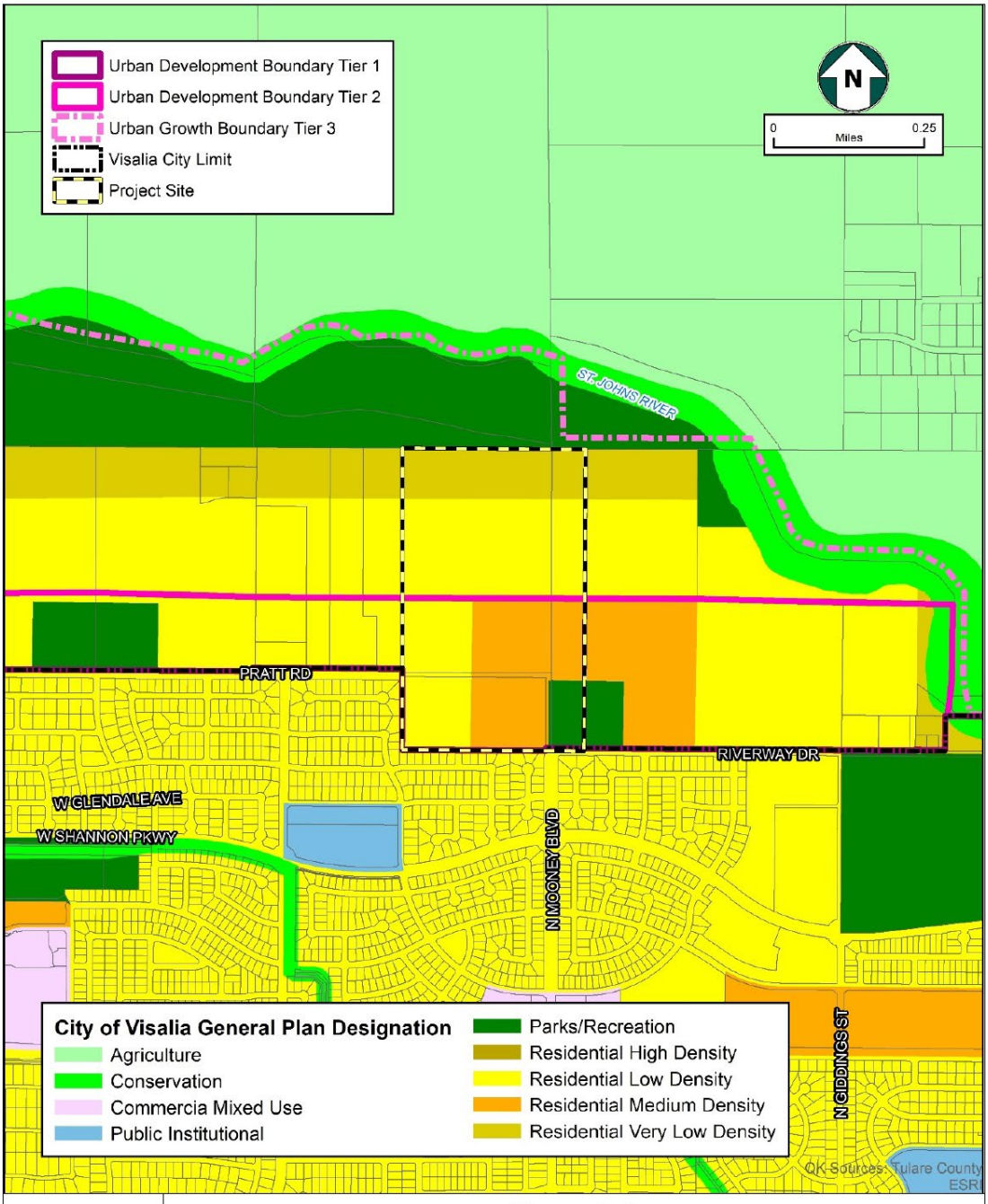

Figure 3-1

Current General Plan Land Use

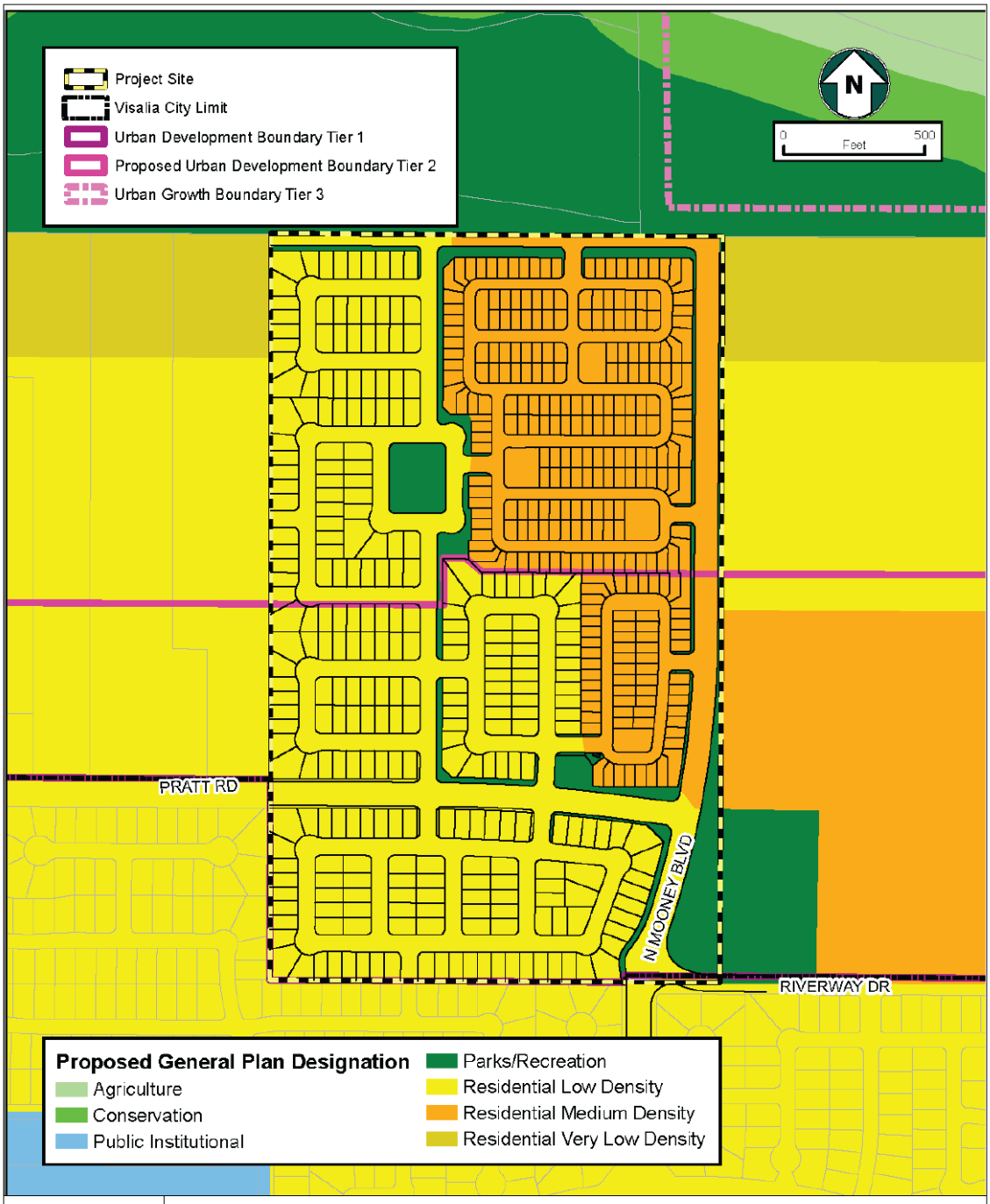

Figure 3-2

Proposed General Plan Land Use

RESOLUTION NO. 2023-39

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF VISALIA RECOMMENDING APPROVAL OF SPECIFIC PLAN NO. 2021-06: A REQUEST TO ESTABLISH A NEW SPECIFIC PLAN (PRATT FAMILY RANCH SPECIFIC PLAN) ON 95.56 ACRES, INCLUDING DISTRICTS FOR LOW DENSITY RESIDENTIAL, MEDIUM DENSITY RESIDENTIAL, AND PARKS AND OPEN SPACE, AND ESTABLISHMENT OF LOTS BELOW MINIMUM LOT SIZE. FULL BUILDOUT OF THE PLAN WILL ACCOMMODATE APPROXIMATELY 541 DWELLING UNITS AND 8.3 ACRES OF PARKS & OPEN SPACE, TO BE DEVELOPED ACROSS URBAN DEVELOPMENT BOUNDARY TIERS II AND III. THE PROJECT SITE IS LOCATED NORTH OF RIVERWAY DRIVE ON THE WEST AND EAST SIDES OF MOONEY BOULEVARD. (APN: 078-010-025, 028, 029; 078-110-022, 023)

WHEREAS, Specific Plan No. 2021-06 is a request to establish a new specific plan (Pratt Family Ranch Specific Plan) on 95.56 acres, including districts for low density residential, medium density residential, and parks and open space, and establishment of lots below minimum lot size. Full buildout of the plan will accommodate approximately 541 dwelling units and 8.3 acres of parks & open space, to be developed across Urban Development Boundary Tiers II and III. The project site is located north of Riverway Drive on the west and east sides of Mooney Boulevard. (APN: 078-010-025, 028, 029; 078-110-022, 023; and

WHEREAS, the Planning Commission of the City of Visalia, after duly published notice did hold a public hearing before said Commission on August 14, 2023; and

WHEREAS, the Planning Commission of the City of Visalia considered the Pratt Family Ranch Specific Plan (Specific Plan No. 2021-06) to be in accordance with Chapter 12.04 of the Municipal Code of the City of Visalia based on evidence contained in the staff report and testimony presented at the public hearing; and

WHEREAS, an Initial Study was prepared which disclosed that no significant environmental impacts would result from this project, if recommended mitigation measures were incorporated in the project.

NOW, THEREFORE, BE IT RESOLVED, that the Planning Commission recommends that the City Council adopt Mitigated Negative Declaration No. 2023-37 prepared for Annexation No. 2021-04, General Plan Amendment No. 2021-05, Specific Plan No. 2021-06, and Pratt Family Ranch Tentative Subdivision Map No. 5583 consistent with the California Environmental Quality Act and City of Visalia Environmental Guidelines.

NOW, THEREFORE, BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia recommends that the City Council approve Specific Plan No. 2021-06, and makes the following specific findings regarding Specific Plan No. 2021-06, based on the evidence presented:

1. That the Pratt Family Ranch Specific Plan has been prepared in accordance with adopted local ordinance – in particular, Chapter 12.04 of the Visalia Municipal Code.
2. That the Pratt Family Ranch Specific Plan has been prepared in accordance with

adopted State law – in particular, Sections 65450 through 65457 of the California Government Code.

3. That the Pratt Family Ranch Specific Plan is consistent with the Visalia General Plan, and in particular, satisfactorily meets the intent of LU-P-22
4. That an Initial Study was prepared for this project, consistent with CEQA, which disclosed that environmental impacts are determined to be not significant and that Mitigated Negative Declaration No. 2023-37, is hereby adopted. Furthermore, the design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage nor substantially and avoidably injure fish or wildlife or their habitat.
5. That the Pratt Family Ranch Specific Plan is consistent with the intent of the General Plan, Subdivision Ordinance, and Zoning Ordinance, and is not detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the vicinity.

BE IT FURTHER RESOLVED that the Planning Commission of the City of Visalia recommends approval to the City Council of Specific Plan No. 2021-06, as depicted per Exhibit "A", on the real property described herein, in accordance with the terms of this resolution and under the provisions of Chapter 12.04 of the Ordinance Code of the City of Visalia, subject to the following conditions:

1. That the Pratt Family Ranch Specific Plan be adopted in substantial compliance with the Specific Plan attached as Attachment "A" of Resolution No. 2023-39, except incorporating the following modifications:
    a. That separate development standards be utilized for the Low Density Residential neighborhoods having minimum lot sizes of 4,000 and 5,000 square feet as follows:
        i. For the minimum 5,000 square foot lots (i.e., 50-foot x 100-foot), City standards specified in Municipal Code Sections 17.12 080 through 17.12.100 be utilized, excepting that rear yards for one-story dwellings may have a minimum 20-foot setback to the rear property line.
        ii. For the minimum 4,000 square foot lots (i.e., 45-foot x 90-foot), the Specific Plan's proposed setbacks in Table 4-2 be utilized.
2. That dwellings on the lots within the Medium Density Residential land use designations and having minimum 2,500 square foot lot area conform to the floor plans and elevations contained within Exhibits "E" and "F", which shall be included as an Appendix to the Pratt Family Ranch Specific Plan.
3. That the Pratt Family Ranch Specific Plan be developed in accordance with the development agreement, attached as Exhibit "J", which shall be signed and recorded prior to the recording of any final maps.

SPECIFIC PLAN

D.R. HORTON, INC.

PRATT FAMILY RANCH

JULY 2023

DRAFT SPECIFIC PLAN

PRATT FAMILY RANCH

Submitted to:

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July 2023

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Project #200180

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Section 1 - Preface

The location of the Pratt Family Ranch Specific Plan (Specific Plan) is a site with historical relevance to the City of Visalia. The Pratt Family has lived in Visalia for generations and has made a positive impact on the community as a whole. Willis Layton Pratt, his wife, Mary Jane, and their children moved to the Visalia area in 1881. They purchased a large tract of land near what was then the very edge of town, north of the intersection of Houston Avenue and Santa Fe Street, where they farmed, raised cattle and hogs, and operated a dairy. They established the very first creamery in Visalia, providing dairy products to the community.

Willis' son, Thomas, and later his grandson, Orval, continued the dairying tradition. In 1926, Orval purchased land just south of the St. Johns River at what is now the corner of Mooney Boulevard and Pratt Avenue. The dairy was eventually moved to this site. Pratt's Dairy delivered milk in glass bottles to Visalia residents and all the schoolchildren in the Visalia schools.

The family built a new ranch house on the property in 1935. Orval's wife, Anna Lorene, helped run the dairy and was a board member of the Tulare County Farm Bureau, Tulare County American Cancer Society, and several other civic organizations. Orval's son, Glenn Owen Pratt, took over the dairy business and raised Hereford cattle there. In 1960, the family ended what was at the time the longest-running dairy operation in Visalia. Glenn, his wife, Arlene, and their family continued to live on the ranch, growing cotton, corn, milo, and wheat. It is said that they enjoyed sitting outside the ranch house, watching the Sierra Nevada change color as the sun set.

Each generation of the Pratt family participated in various civic organizations to help improve Visalia. In the early 1900s, a levee district was formed to use property tax revenue from the town to construct and maintain a levee to protect Visalia from St. Johns River's floodwaters. Multiple generations of Pratts served as trustees of Levee District #1. Property tax funding for levee maintenance was eliminated by Proposition 13 in 1978, but Glenn continued to walk the levee as a volunteer, looking for areas that needed maintenance. He was honored by the Board of Supervisors for his lifelong commitment to protecting the city from flooding when responsibility for maintaining the levee was transferred to Tulare County in the mid-2000s.

The Pratt Family Ranch neighborhood and this Specific Plan are named to honor the legacy of the Pratt family's eight decades of providing milk and dairy products to the families of Visalia and their seven generations of civic volunteerism in the community.

Section 2 - Introduction

2.1 - Purpose

The purpose of the Specific Plan is to provide design and development standards for a residential community with parks and trails in north Visalia consistent with the City of Visalia's General Plan. The Specific Plan includes policies and standards for each planned land use type to ensure a high-quality, compatible development within the Plan Area and with adjacent uses. The approximate 95-acre Plan Area will include sites for Low-Density Residential and Medium-Density Residential development and corresponding amenities such as aesthetic lighting fixtures, identified trails, and neighborhood parks.

2.2 - Plan Area Location & Description

The Specific Plan is located in the north of Visalia and comprises approximately 95 acres (see Figures 2-1 and 2-2). The Specific Plan Area (Plan Area) is bounded by the St. Johns River to the north and rural residential and uncultivated agricultural land to the east and west, with single-family residential communities to the south within the city limits of Visalia. The Plan Area will consist of Low-Density Residential and Medium-Density Residential land use designations, as shown in Figure 3-1. A portion of the Specific Plan falls within Tier 2, identified as the anticipated growth through 2030 by the City of Visalia's General Plan. It is anticipated to be developed by D.R. Horton, a national homebuilder. Tier 3, which accommodates growth beyond 2030, will be owned and developed by D.R. Horton. The Low-Density Residential portion of the Plan Area consists of approximately 51 acres and will result in a minimum of 102 lots. The Medium-Density Residential portion consists of approximately 26 acres and will result in a minimum of 260 lots. The development of Low-Density Residential and Medium-Density Residential is consistent with the City of Visalia's General Plan land use and zoning designations. It will complement the existing developing uses in north Visalia. Table 3-1 shows a summary of the acreages of the planned land uses in the Specific Plan.

2.3 - Concept

The Specific Plan incorporates policies, standards, designs, and development guidelines that encourage high-quality, comprehensive new development consistent with the intent of the General Plan. The project's primary goal is to create a "legacy project." It is envisioned that the Plan Area and surrounding uses will result in a vibrant community with maximum connectivity to existing and proposed access points. The proposed conceptual layout of the Plan Area (Figure 4-1) allows for better connectivity between developments and encourages future expansion. Although most people commuting to and from the Plan Area will travel by automobile, pedestrian connectivity is a featured characteristic of the community. Pedestrian connectivity promotes a healthier lifestyle, aesthetically pleasing and safe routes to parking spaces, and connections between neighborhoods. Pedestrian connections are enhanced through the use of pedestrian paths and trail networks with rich landscaping. Circulation by the various modes of travel will be discussed in more detail in Section 4. The administration, implementation measures, and design and development standards outlined in this Specific Plan provide the framework for the development. The Specific Plan will be developed in concurrence with the adopted development policies and standards of the City of Visalia, except for deviations that are expanded on in later sections.

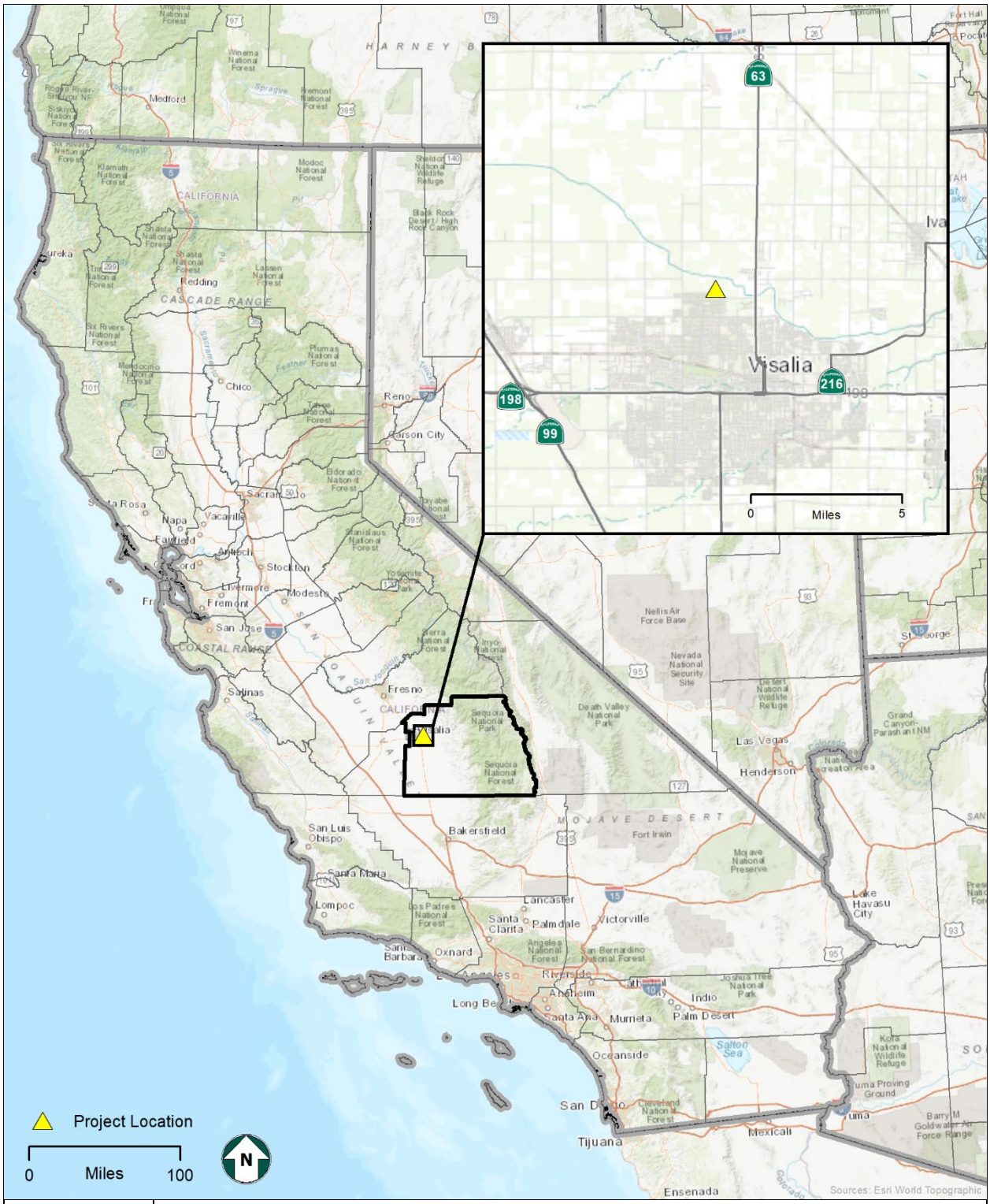


Figure 2-1

Regional Map

Figure 2-2

Plan Area Site

2.4 - Site Conditions

The figure above was developed using the existing land use codes determined by the Tulare County Assessor to accurately assess the taxes for a property. According to the Tulare County Assessor's Office, the existing land uses are described as what is currently on the property and/or what the property is currently being used for. As shown in Figure 2-3, the Plan Area and surrounding properties are identified as agriculture, except for the St. Johns River being classified as Miscellaneous and Public/Quasi Public. South of the Plan Area is primarily categorized as single-family residential. Since the Plan Area is located outside of the City of Visalia, the Plan Area is under the jurisdiction and zone designation of Tulare County, which is designated as AE-20 and AE-40 (Figure 2-4). These are exclusive agriculture zone districts. In addition, there are existing structures within the Plan Area. There is an existing single-family dwelling/farmhouse and a dilapidated barn.

According to an ALTA survey completed in 2020, the Plan Area is topographically flat. It has an elevation of approximately 320 feet above sea level to the southeast of the property, with a variance of two feet sloping north to south. There is an access easement on the west side of the property and an irrigation/access easement on the property's east side (ALTA/NSPS Land Title Survey 2020). Powerlines run east to west on Pratt Road and south on Mooney Boulevard. A powerline is also on Pratt Road's southside and runs north, crossing onto the Plan Area. The Plan Area also has telephone lines running east to west on Pratt Road. There are two existing irrigation wells on the property and an irrigation vent pipe on the northeast side of the property (ALTA/NSPS Land Title Survey 2020).

2.5 - Surrounding Existing Land Uses

The Plan Area is in a developing area of north Visalia. Surrounding land uses consist of existing single-family residences to the south, agriculture and existing rural single-family residential to the west, vacant land and the St. Johns River to the north, and agricultural land to the east (see Figure 2-3).

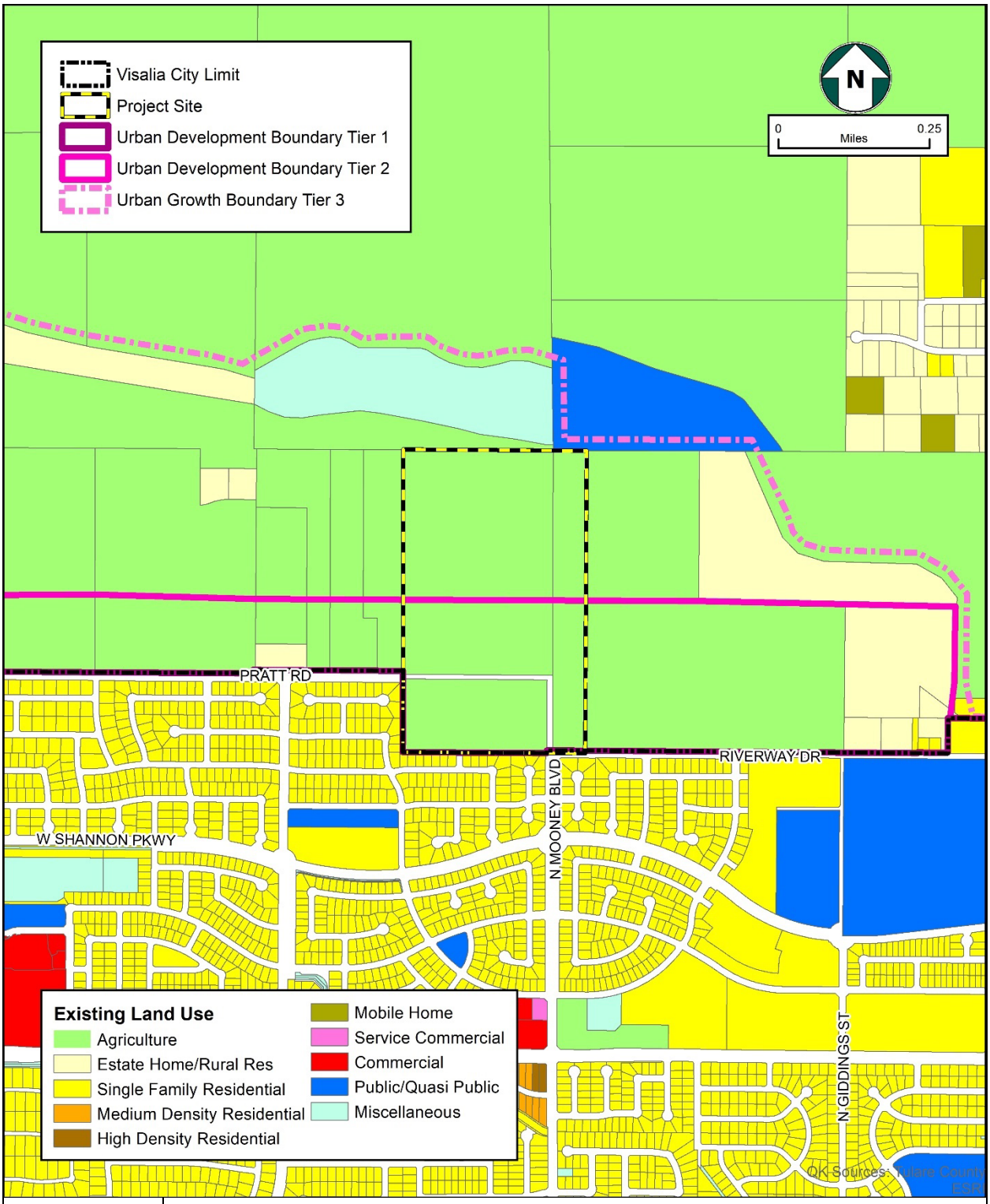


Figure 2-3

Existing Land Use

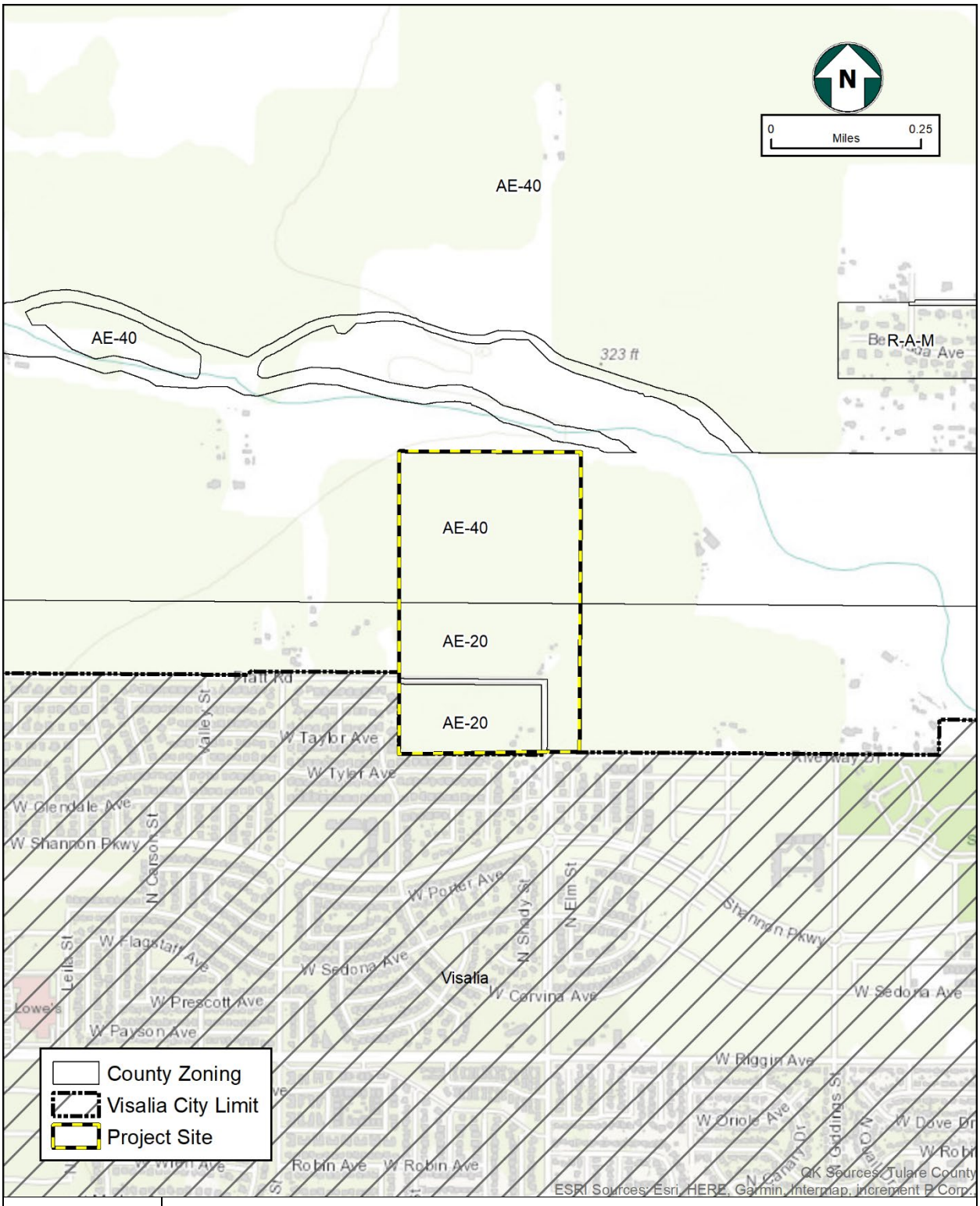


Figure 2-4

Current Zoning Designation (Tulare County)

Section 3 - Specific Plan, Land Use, and Zoning Applicability

3.1 - Guiding Principles

The Guiding Principles of this Specific Plan are derived from the City of Visalia's General Plan. A Specific Plan is intended to set parameters and guide development under its purview to maintain consistency with the City of Visalia's General Plan. Since the Specific Plan will be consistent with the City's General Plan, the Specific Plan will implement the policies and goals of the General Plan (City of Visalia 2014). Government Code Section 65454 states, "No specific plan may be adopted or amended unless the proposed plan or amendment is consistent with the general plan" (California Legislative Information, 2021).

Goals and policies from the Visalia General Plan that are applicable to the Specific Plan are as follows:

- LU-0-7: Preserve and enhance qualities that make Visalia an ideal place to do business and promote a positive image of Visalia as a desirable place to do business and promote a positive image of Visalia as a desirable place to live, visit, and do business.
- LU-0-9: Protect agricultural land from premature urban development.
- LU-0-19: Ensure adequate land area is available for future housing needs, enabling an average citywide gross density of 5.3 dwelling units per acre of new residential development.
- LU-0-20: Allow sufficient density and intensity to enable new development to support all required infrastructure, community facilities, and open space.
- LU-P-22: Allow for City Council approval of Master Plans, following Planning Commission review and recommendation, for sites under single ownership or unified control, which may include developable land within both multiple development tiers. Allow for prezoning of this master planned land, subject to execution of a development agreement between the City and the landowner conforming to the requirements of Government Code Section 65864 et seq., with the project allowed to annex and develop while the City is still limiting development approvals to land within the Tier 1 or Tier 2 designation.
- LU-0-23: Provide a range of housing types and prices within new neighborhood to meet the needs of all segments of the community.
- LU-0-25: Create an open space system that links neighborhoods, complements adjacent land uses, and serves multiple needs.
- PSCU 0-1: Design parks and recreation facilities that will enhance community identity and serve the recreation and social needs of Visalians of all ages, economic situations, and physical abilities.
- T-0-1: Develop and maintain a road system that is convenient, safe, efficient, and cost-effective.
- T-0-8: Encourage walking and bicycling in Visalia for commuting and recreational purposes and for the improvement of public and environmental health.
- OSC-0-9: Protect agricultural land from premature urban development.

Additional principles that are included outside of the General Plan:

- Create a legacy project to commemorate the Pratt Family's contribution to the City of Visalia.
- Ensure attractive and orderly developments within the specified Plan Area, fostering a safe and healthy community.

3.2 - City of Visalia General Plan

The Specific Plan proposes a large residential community that offers several neighborhoods composed of two different residential land uses (Low-Density Residential and Medium-Density Residential) in conjunction with the Open Space land use. Uses are expected to consist of single-family residential neighborhoods and higher-density, small-lot residential gated communities. General guidelines for development are approximately 25.9 acres of Medium-Density Residential, 51.2 acres of Low-Density Residential, and up to 7.9 acres of OS. The Plan Area is bisected by the Tier 2 and Tier 3 boundary lines. The remainder of the acreage is devoted to rights of way dedications. Figure 3-1 shows the current General Plan land use designations for the Plan Area and adjacent uses. Figure 3-2 shows the proposed General Plan land use designation for the Plan Area. Furthermore, the current General Plan land use designations' configuration will be altered to make the property more developable. The proposed land use designations provide the same or greater density of residential development, just in a different configuration. The Very Low Density is starting to phase out in the housing market and with the ever-growing need of housing, high-density homes are a more desirable use of land.

According to the City's General Plan, the Low-Density Residential designation is intended to provide for single-family detached housing. Residential densities are typical of single-family subdivisions. The standard residential density for this designation ranges from two to 10 housing units per gross acre. Buildout is assumed to be at least four units per gross acre. Additionally, the Medium-Density Residential designation can accommodate a mix of housing types, from small-lot starter homes, zero-lot-line developments, and duplexes to townhouses and garden apartments. Pedestrian-oriented design and clustering can support higher density. There are several different uses included within the Medium-Density designation. This Plan will limit the uses of single-family units that use Medium-Density setbacks. The typical residential density for this designation ranges from 10 to 15 housing units per gross acre. Buildout is assumed to be at least 10 units per gross acre.

Table 3-1
Plan Area Land Use Sizes

Land Use	Acreage
Low-Density Residential	51.0
Medium-Density Residential	25.0
Subtotal	76.0
Arterials & Collectors	11.7
HOA Park (Private)	0.3
Parks, Trails, Open Space & Landscape Strips	8.0
Total	96

Note: All sizes and acreages are approximated.

D.R. Horton intends to be the sole developer. If D.R. Horton is not the sole developer, the Specific Plan intends to set policies and standards to ensure consistency for different development projects.

The Specific Plan is consistent with General Plan Land Use Element Policy LU-P-50 since it will be compatible with the surrounding residential development. Pedestrian connections within the Plan Area and surrounding uses are included (reference Section 4).

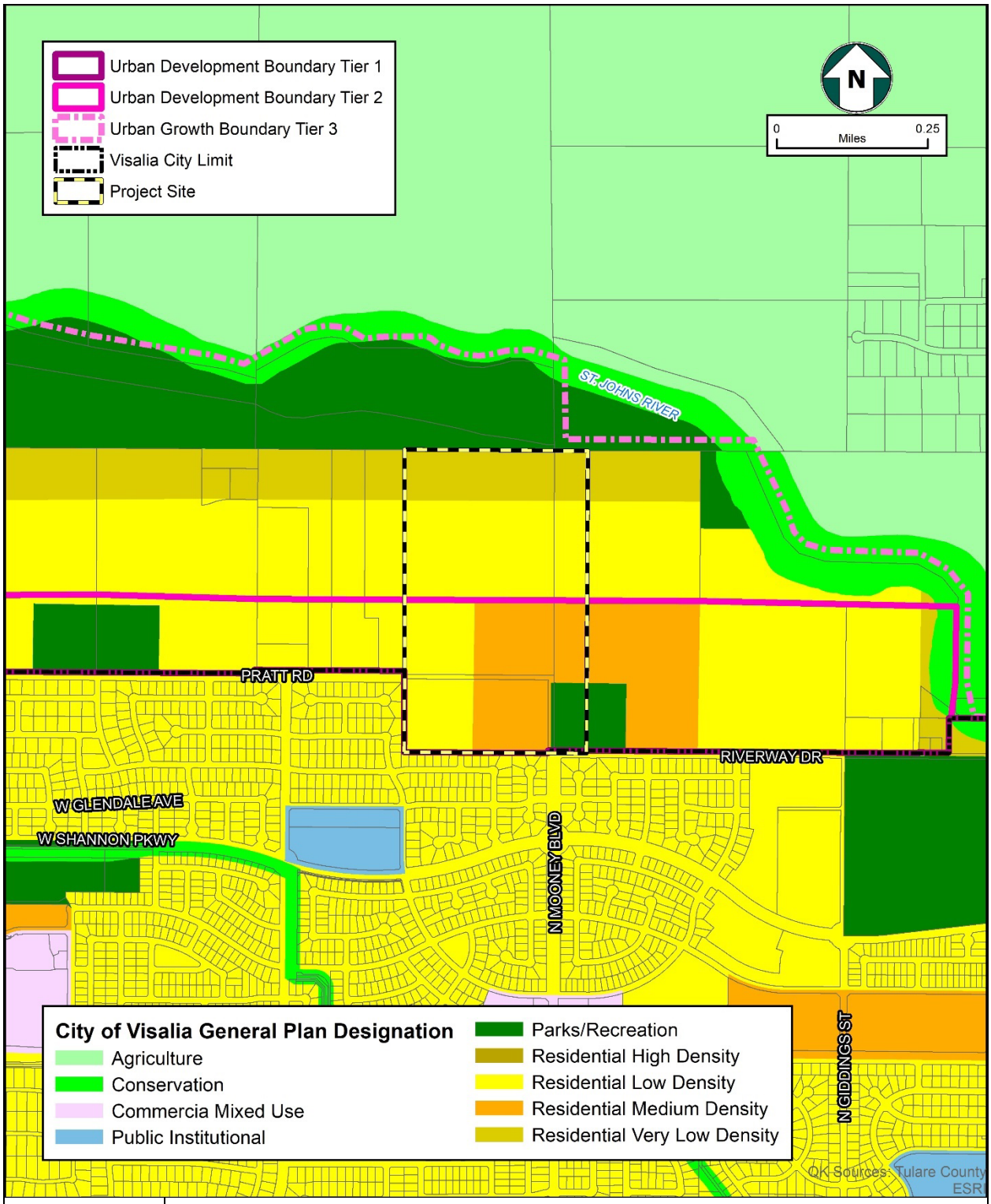


Figure 3-1

Current General Plan Land Use

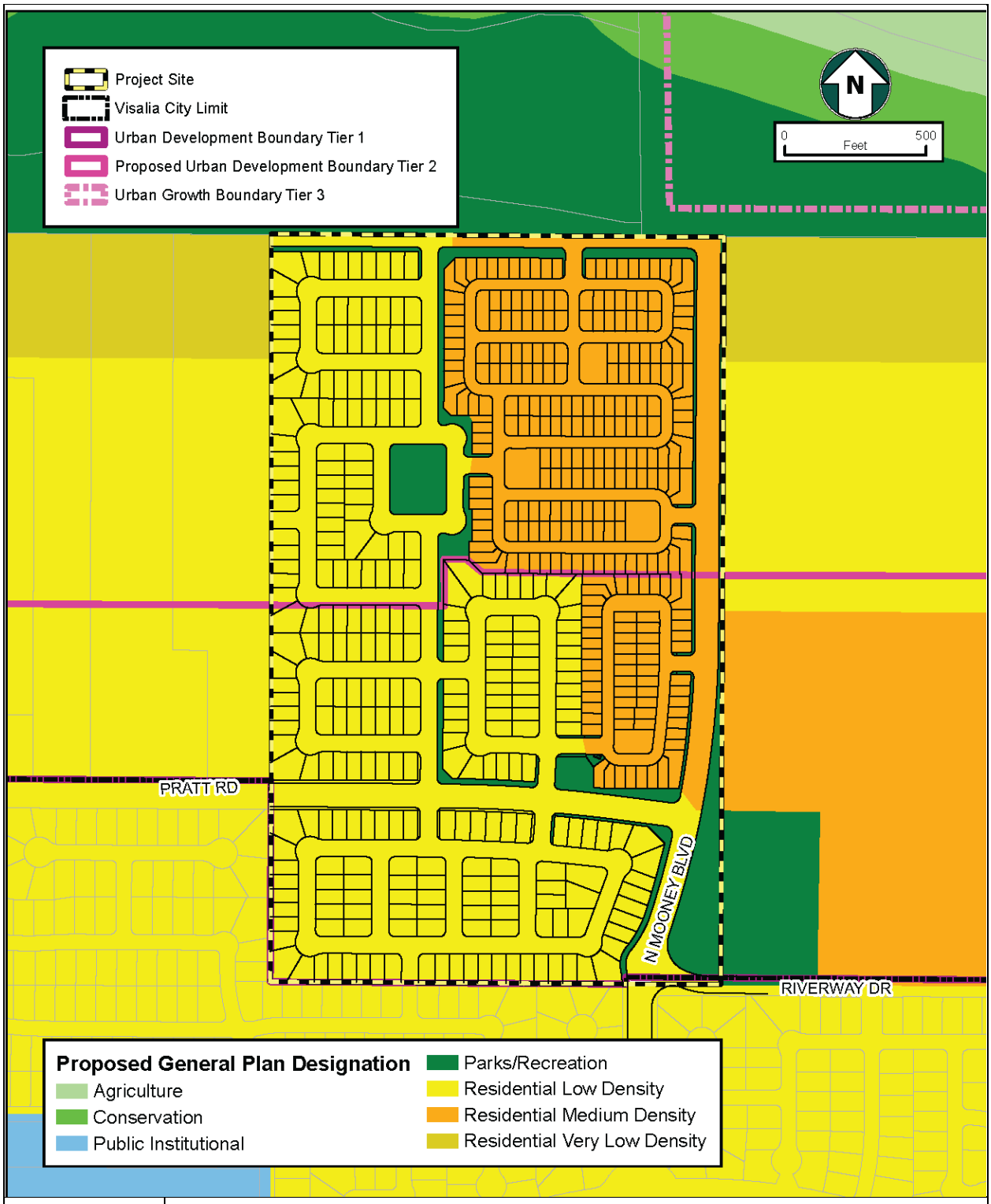


Figure 3-2

Proposed General Plan Land Use

The City's General Plan establishes three growth boundaries to regulate expansive development and maintain orderly growth. The first tier, also known as the Urban Development Boundary I or Tier 1, is mainly conterminous with the existing city limits. The second tier, also known as Urban Development Boundary II or Tier 2, comprises 27,936 acres total at buildout. The third tier, also known as the Urban Growth Boundary or Tier 3, comprises 32,648 acres total at buildout. See Figure 3-1 for a depiction of the Plan Area's relation to the City's Urban Development/Growth Boundaries.

The Specific Plan is consistent with General Plan Land Use Element Policy LU-P-22, which allows for City Council approval of Master Plans, following Planning Commission review and recommendation, for sites under a single ownership or unified control, which may include developable land within both multiple development tiers. Additionally, the policy allows for the prezoning of this master planned land, subject to the execution of a development agreement between the City and the landowner conforming to the requirements of Government Code Section 65864, with the project allowed to annex and develop while the City is still limiting development approvals to land within the Tier 1 or Tier 2 designation. As stated in Policy LU-P-21, approved master planned sites could then be annexed before development is permitted in Tier 2 or Tier 3 under Policy LU-P-21. The development agreement would spell out details on overall development, density/intensity and phasing, infrastructure needs, building standards, development impact fees, financing, and what each party would do. This policy will allow large landowners, with Council approval, to have a longer timeframe for development and infrastructure planning, consistent with the vision of the General Plan, and also "nail down" the numbers for their financial partners while still maintaining the City's interest in having concentric growth through a phasing plan.

Policy LU-O-12 provides for an orderly and efficient transition from rural to urban land uses. Policy LU-O-13 minimizes urban sprawl and leap-frog development by encouraging compact, concentric, and contiguous growth. Policy LU-O-16 creates a safe, walkable, and attractive urban environment for current and future generations of residents.

The Specific Plan is consistent with transit policies in the City's Circulation Element Policy T-P-32. The Specific Plan will incorporate adequate transit facilities from the conditions of approval, which could include bus turnouts along arterials, and bus stop amenities, including but not limited to lighted shelters, benches, and route information signs. In addition, Policy T-P-45 requires that collector streets incorporate bicycle transportation systems such as Class II bikeways and Class III bike route facilities.

Also, streets to be improved as a part of the Specific Plan will include Avenue 320, Mooney Boulevard, Pratt Avenue, and Riverway Drive. These will be developed as described in the City's General Plan Circulation Element and City Standard Drawings.

The Specific Plan will incorporate performance standards for noise reduction for new housing. Performance standards include (Policy N-P-3):

- Construct facades with substantial weight and insulation.
- Use sound-rated windows with enhanced noise reduction for primary sleeping and activity areas.
- Use sound-rated doors for all exterior entries at primary sleeping and activity areas.
- Use minimum setbacks and exterior barriers.
- Use acoustic baffling of vents for chimneys, attic, and gable ends.

- Install a mechanical ventilation system that provides fresh air under closed window conditions.

3.3 - Zoning Applicability

The purpose of this section is to give an overview of the regulatory requirements for the development of the Specific Plan. These standards address the information and requirements pertaining specifically to the zoning, density, and open space related to the site. Where this Specific Plan remains silent, the provisions and definitions within the City of Visalia Municipal Code shall apply. Where a conflict exists between these development standards and the City of Visalia Municipal Code, the standards contained herein shall apply. Particulars regarding any deviations from the development standards of the City's Municipal Code will be elaborated on in Section 4.

Depicted in Table 3-2 are the zoning designations that are consistent with the revised General Plan land use designations described in Section 3.2. The Pratt Ranch Specific Plan presents a more detailed picture of the specific product types proposed within the Plan Area. The development standards and zone designations provide a necessary assurance that the Plan Area will be developed in accordance with the quality and character set forth in this Specific Plan, Visalia's General Plan, and Municipal Code. Since the Plan Area is outside the city limits, the City of Visalia will be prezoning the site. This will allow for the prezoned designation to be the applicable zoning designation upon the initiation of annexation into the City (Figure 3-3). Figure 3-4 shows the proposed zoning of the Plan Area to maintain consistency with the proposed General Plan land use designations. The proposed zoning on the site is approximately 36 gross acres of R-1-5, 20 gross acres of R-M-2, and 4 acres of QP.

3.4 - Zoning Consistency

As mentioned previously, the Specific Plan designates three zoning districts (Table 3-2). The two primary zoning designations of the Specific Plan are Single-Family Residential with a 4,000-square-foot lot minimum lot size (R-1-5) and Multi-Family Residential with a 2,500-square-foot minimum site area per dwelling unit (R-M-2). The third zoning designation is the Quasi-Public zone district, which is envisioned to be used as park space. The Specific Plan intends for single-family and multi-family developments that may allow a variation of densities to coexist within adjacent communities. As illustrated in the Conceptual Plan, there are two Medium-Density communities: one in Tier 2 and one in Tier 3. In addition, seven Low-Density neighborhoods depicted via the Conceptual Plan Area design have a mix of 4,000- and 5,000-square-foot lots. To meet the density requirements of the land use designations, the Specific Plan proposes smaller-lot single-family developments that meet the purpose and intent of the R-M-2 zone district, along with medium- to large-lot single-family developments that meet the requirements of the R-1-5 zone district. Pursuant to the City's Municipal Code, the developments are all permitted uses that cater to a neighborhood atmosphere with a mix of high and low concentrations of dwelling units and still preserve the desirable characteristics and amenities of a Low-Density development.

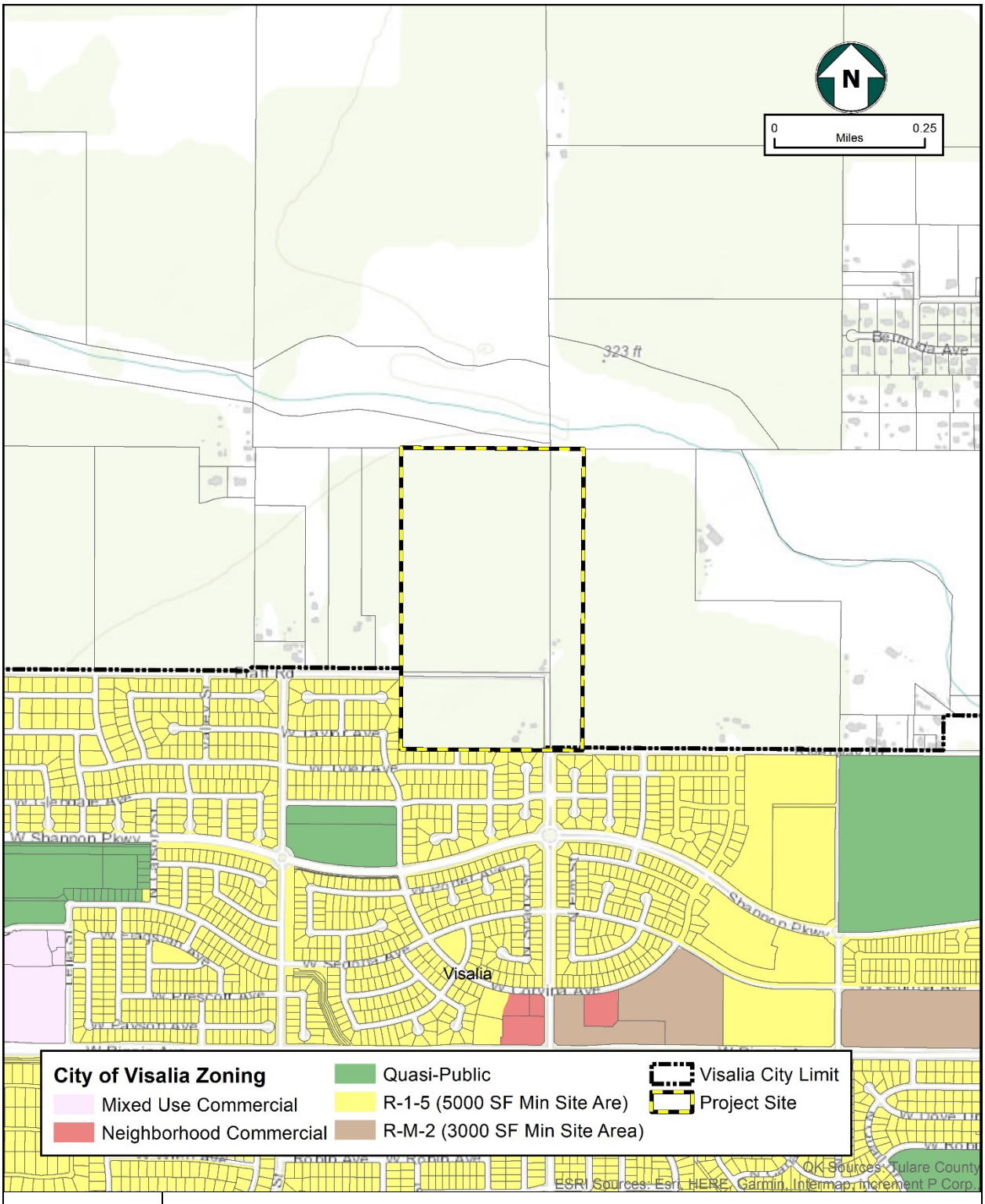


Figure 3-3

Current Zoning (City of Visalia)

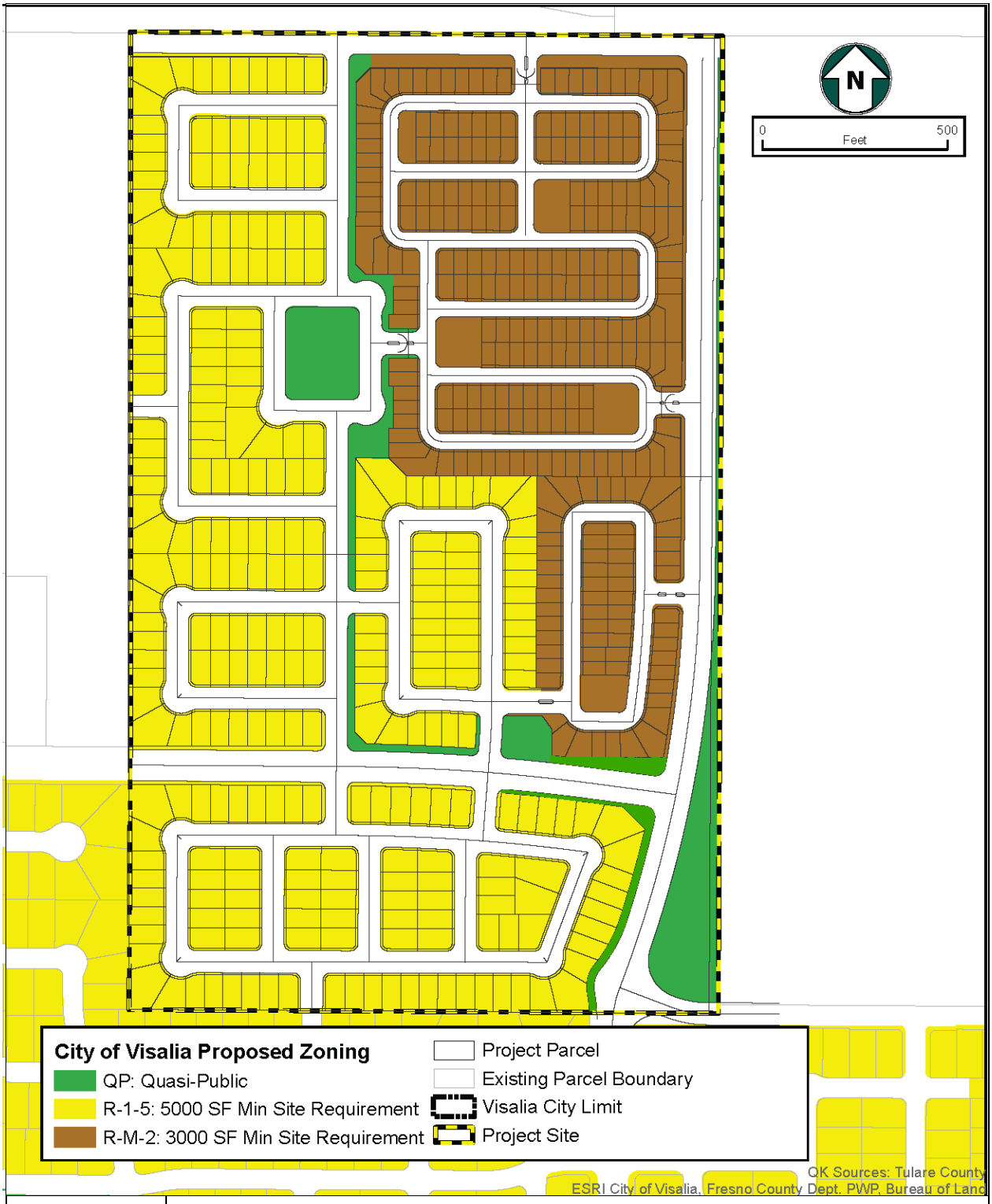


Figure 3-4

Proposed Zoning

Table 3-2
Plan Area Land Use Sizes

General Plan Land Use Designation	Zoning Designation	Zoning Abbreviation
Low-Density Residential	Single-Family Residential 4,000 SF Min. Lot Size	R-1-5
Medium-Density Residential	Multi-Family Residential 2,500 SF Min. Site Area Per Dwelling Unit	R-M-2
Parks/Recreation	Quasi-Public	QP

3.4.1 - Zoning Map and Zoning Process

These zoning regulations implement the General Plan land use designations for the Plan Area. The proposed zoning for the properties within the Specific Plan Area is shown in Figure 3-4, Zoning Map. Upon approval of the Specific Plan, the City of Visalia's Zoning Map will be amended to identify the Plan Area as the Pratt Family Ranch Specific Plan, and the zoning as set forth in this Specific Plan and as shown in Figure 3-4, shall apply upon annexation. Minor amendments to the proposed zoning boundaries may be made concurrent with subdivision approvals to ensure that final zoning designations precisely coincide with future street, utility facilities, or recreation facility lot lines. Major amendments or zone changes shall be considered amendments to the Specific Plan. They shall be processed in accordance with provisions of the City of Visalia codes and ordinances and California State law (more details Section 7.3).

3.5 - Overview of the City of Visalia's Zoning Code

The Specific Plan's Zoning Code is adopted and implemented for projects proposed within the Plan Area with the purpose of promoting the health, safety, and general welfare of future residents. The subsections below depict an overview of the City's Municipal Code requirements that would typically apply. The development standards mentioned in the Specific Plan are either derived from the City's Municipal Code or created to produce a unique community layout consistent with the General Plan. In Section 4, the Specific Plan's Zoning Code requirements are articulated for future developments to adhere to unless otherwise stated.

3.5.1 - Single-Family Residential Zone (R-1-5)

In the R-1 Single-Family Residential zones, the purpose and intent are to provide a living area within the City where development is limited to Low-Density concentrations of one-family dwellings and where regulations are designed to accomplish the following: to promote and encourage a suitable environment for family life; to provide space for community needed to complement urban residential areas and for institutions that require a residential environment; to minimize traffic congestion and to avoid an overload of utilities designed to service only Low-Density Residential use (City of Visalia 2017).

3.5.2 - Multi-Family Residential Zone (R-M-2)

In the R-M Multi-Family Residential zones, the purpose and intent are to provide living areas within the two Multi-Family Residential zones (one medium density

and one high density) with housing facilities where development is permitted with a relatively high concentration of dwelling units and still preserve the desirable characteristics and amenities of a Low-Density atmosphere (City of Visalia 2017).

3.5.3 - Development Standards

Standards such as site area and setbacks are typically applicable to all developments within the City of Visalia. These parameters allow for the City to regulate spacing between structures and parcel sizes in specific zone designations in order to maintain consistent developments.

- Site Area. The minimum parcel size varies according to the zone district in which the parcel is located. However, this title shall not preclude parcels of less than the required minimum, which exists at the time of adoption of this title, from securing site plan review permits and building permits. Parcels of less than the required minimum size may be created upon approval of an acceptable Master Plan by the Site Plan Review Committee.
- Setback. The minimum building setbacks in each zone district shall be conformed to the requirements set forth in that zone district. However, the Site Plan Review Committee may grant an exception to the required standards based on the uniqueness of the property or the specific design needs of the project. The average setback and landscaping under such an exception shall be equal to the required standard.
- Height Limits. The height of a structure shall be measured vertically from the average elevation of the ground level along the front property line to the highest point of the structure. Each zoning designation's height limits vary.
- Off-Street Parking. In order to prevent traffic congestion and shortage of curb spaces, off-street parking facilities shall be provided incidental to any new building or structure and major alterations and enlargements of existing uses. Off-street parking spaces or areas required shall be in proportion to the need for such facilities created by the particular type of land use. Off-street parking facilities shall also be laid out in such a manner that the facilities will protect public safety and insulate surrounding land uses from their impact.
- Fences, Walls, and Hedges. Fences may be constructed of any generally acceptable material except that barbed wire and electric-charged fences are specifically prohibited in any R-1 or R-M zone.
- Signs. The purpose of regulating signs is to preserve and enhance the aesthetic character and environmental values of Visalia while allowing a sensible approach to advertising and signage. These regulations recognize the importance of the business activity to the economic vitality of the City as well as the need to protect the visual environment. Section 17.48.010 of the Visalia Municipal Code lists the rules and regulations of all applicable sign regulations for residential districts. Signs within the Specific Plan will adhere to the Municipal Code guidelines.

3.6 - Applicable Entitlement Process

The overall Specific Plan consists of two phases. Each phase will consist of the entitlements mentioned below.

These requirements will be required per the processes of the City's Municipal Code.

3.6.1 - Site Plan Review Application

Prior to the formal submittal of developments proposed to occur within the Plan Area, it is a requirement per the City's Zoning Ordinance that new or remodeled buildings and structures and improvements to land shall be reviewed to ensure substantial compliance with the General Plan, Municipal Code, policies, and improvement standards of the City. Furthermore, the approved Specific Plan will be used in order to review any proposed development as well.

3.6.2 - Tentative Subdivision Map Application

A Tentative Subdivision Map will be required for the anticipated development. The overall Plan Area will be developed into two distinct phases, separated by the Urban Development Boundary Tier 2 and Tier 3. It is anticipated that both phases will be subdivided via two Tentative Subdivision Maps. Unless otherwise specifically noted in this Specific Plan, all parking, fencing, screening, and landscaping shall be per City ordinance(s)/standards.

3.6.3 - General Plan Amendment and Prezone

In conjunction with the Tentative Subdivision Map application, the project proposes to revise the existing configuration of the General Plan's land use designations into a design that will result in a more appealing community once developed. This new arrangement promotes a community design that allows for pedestrian travel by utilizing the open space/trail system and offering a variety of lot types not in clustered developments.

3.6.4 - Annexation

All property that requests to be incorporated into a municipality's or service district's service area will need to propose an annexation. This will allow the property to be assimilated into the public agency's boundary and receive public services provided by the public agency. Along with the General Plan Amendment and Prezone, the annexation will be included as a part of the overall project's entitlements. The proposal of the annexation triggers the requirement for a Prezone in order to maintain consistency between zoning and the City's General Plan. Since the Plan Area is split into Tier 2 and Tier 3, the timing of permitted annexations will vary due to policies elaborated in the General Plan. The development proposed in the Tier 2 area will be processed before Tier 3.

Section 4 - Project Design and Development Standards

4.1 - Design and Development Standards

The following sections detail design and development standards for each use within the Plan Area, fencing/walls, signage, lighting, and landscaping.

As depicted in Table 4-1, the overall Plan Area has several communities with varying lot sizes. The Plan Area will consist of three General Plan land use designations, one of which is designated for Parks and Open Space. The other two designations are Low-Density Residential and Medium-Density Residential. The Plan Area may offer a wide variety of lot sizes that will be consistent with the City's General Plan and the Plan Area's Specific Plan (see Figure 4-1). For the purpose of this section, the Tier 2 portion of the Plan Area will be developed right away, and Tier 3's portion will be considered conceptual. As shown in Figures 4-2 and 4-3, the intricate design maximizes the potential development of the Plan Area while establishing integrated communities that are connected via a pedestrian-oriented trail network. As previously mentioned in Section 2, all design or development standards from the City of Visalia Municipal Code are applicable unless otherwise stated specifically.

Table 4-1
Pratt Family Ranch Land Uses

	Lot Size	Land Use[1]	Gross Acreage	Proposed Dwelling Units	Minimum Density/ Gross Acre	Proposed Density
Tier 2	38' x 72'	Medium-Density Residential	6.12	60	10.00	9.8*
	45' x 90'	Low-Density Residential	8.12	52	2.00	6.4
	50' x 100'	Low-Density Residential	25.15	132	2.00	5.2
Tier 3	38' x 72'	Medium-Density Residential	19.91	207	10.00	10.3*
	50' x 100'	Low-Density Residential	17.97	90	2.00	5.0
Total				541		

*Combined density of the Medium-Density Residential is 10.00 Dwelling Units per acre.

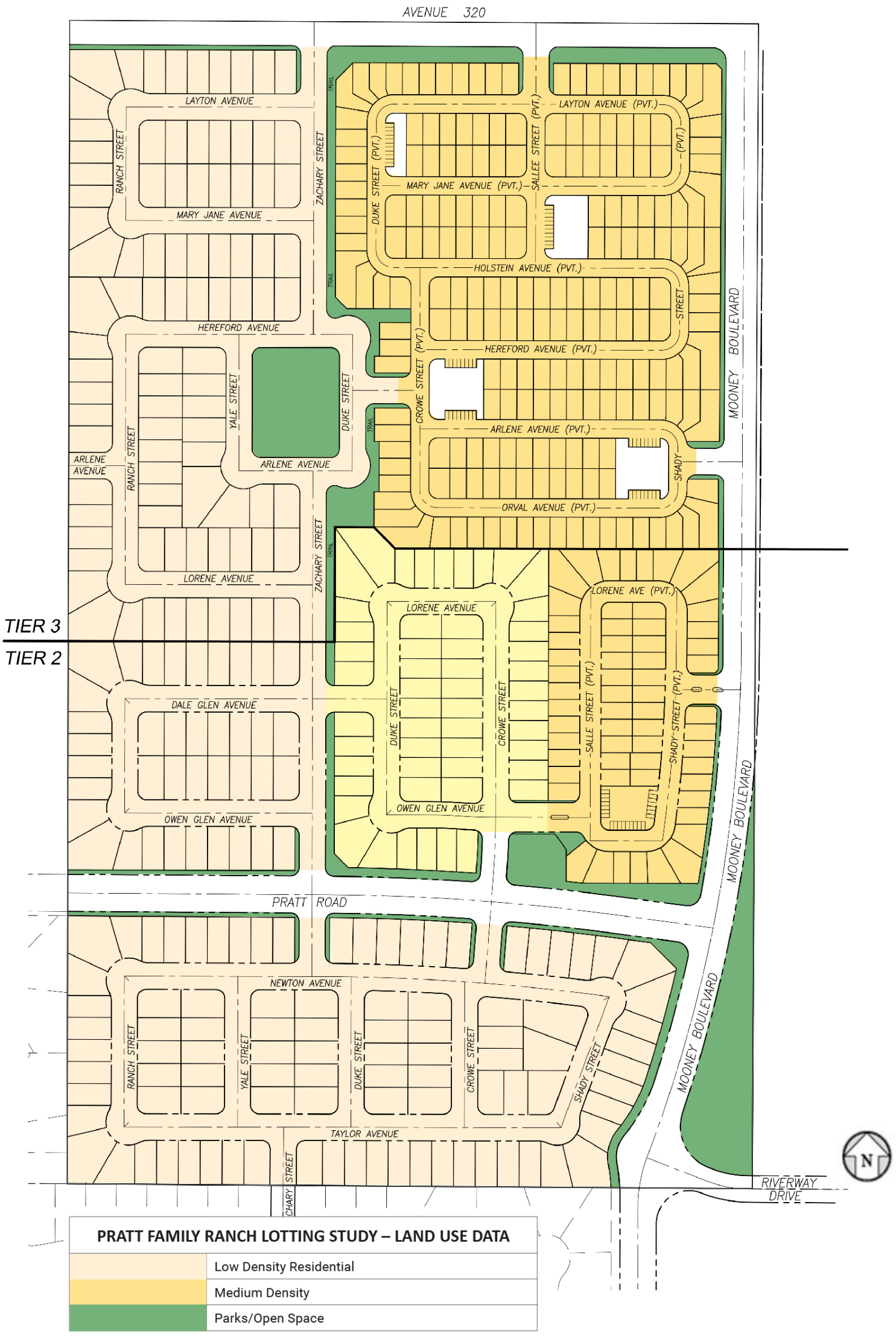


Figure 4-1

Plan Area Concept Plan

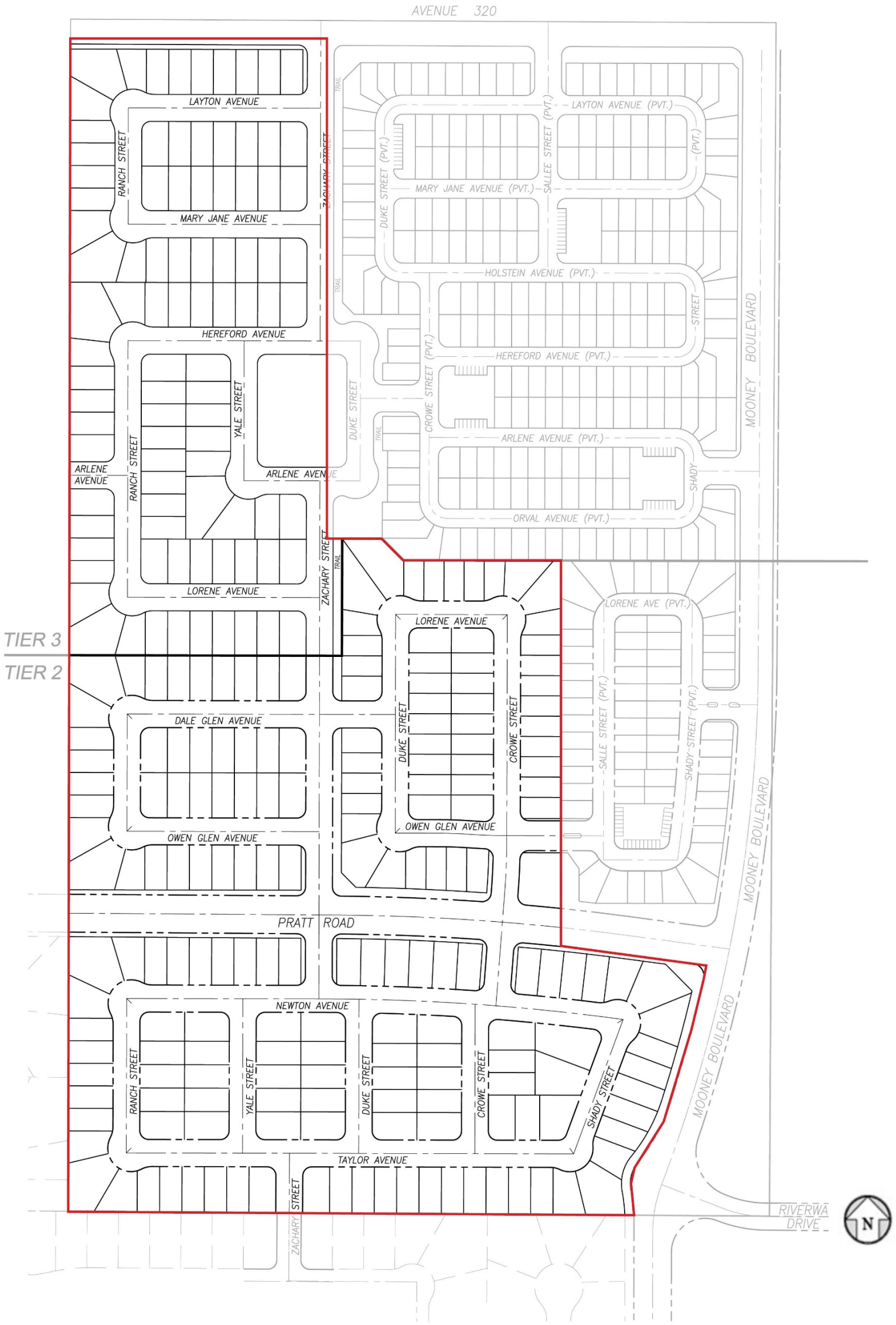


Figure 4-2

Site Plan for Low-Density Residential Area

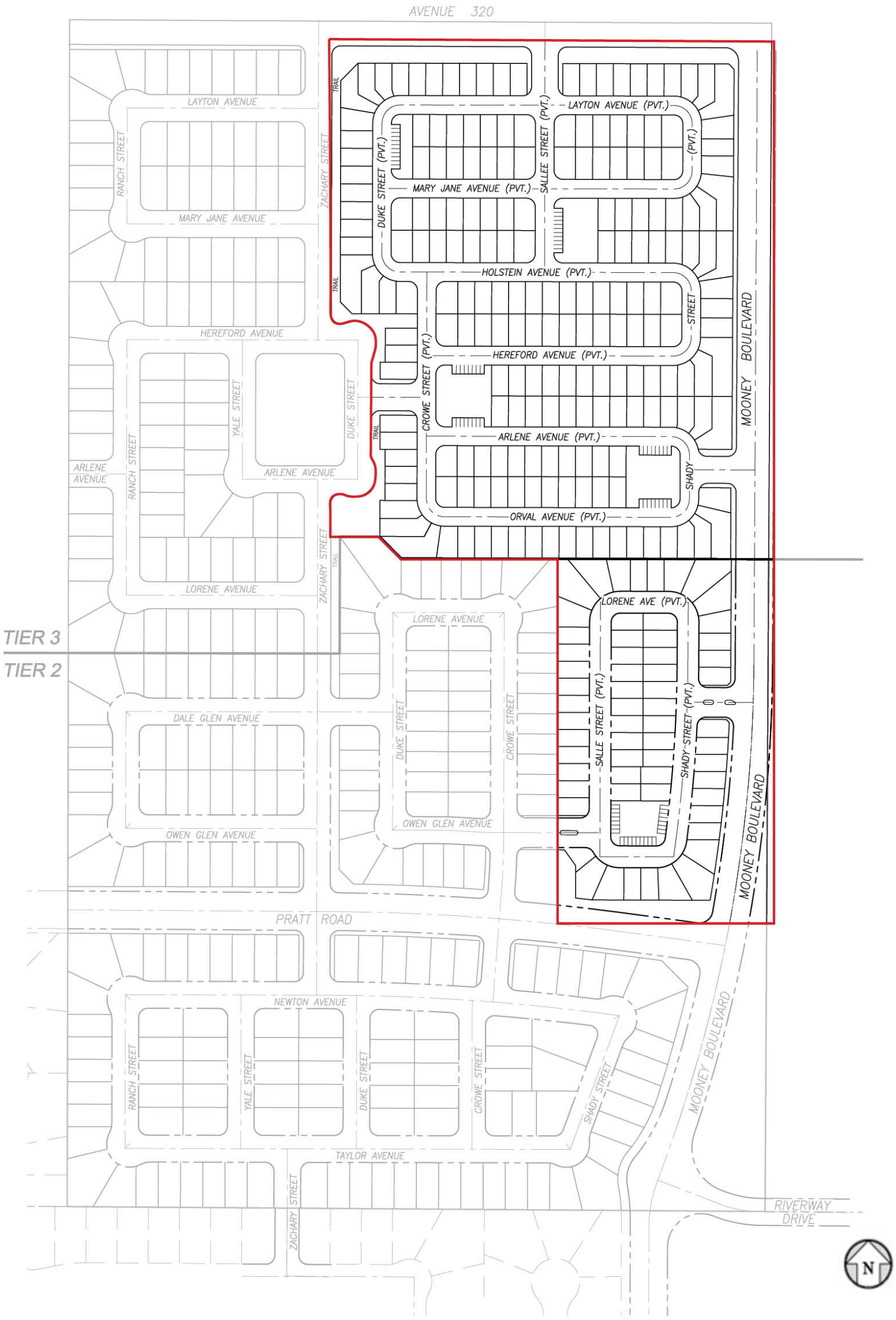


Figure 4-3

Site Plan for Medium-Density Residential Area

4.1.1 - Relationship to the City of Visalia Municipal Code

The Pratt Family Ranch zoning regulations identify only those uses and development regulations unique to the project. When specifics are given, those zoning regulations shall supersede those found in the City of Visalia Municipal Code. Where these zoning regulations do not address a use or development standard, the provisions of the City of Visalia Municipal Code shall apply. In particular, the majority of City development standards that are superseded are within Chapters 17.12[1] and 17.16[2].

4.1.2 - Development Standard Hierarchy

The hierarchy of applicability shall be first to the Pratt Family Ranch Specific Plan and these zoning regulations, and then to the applicable City of Visalia's Municipal Code and other applicable codes and ordinances.

4.1.3 - Purpose and Compliance

This section aims to establish qualitative design standards and guidelines to ensure further that the quality and character of the Plan Area are upheld. Site design, architectural styling, and landscape design should be integrated to create a unified site design that will complement the surrounding residential neighborhoods. The Plan Area will promote visual diversity along the streetscape and promote the use of street-oriented architecture. The following standards and guidelines address site planning, parking, landscaping, architecture, lighting, signage and service, trash, utility, and storage areas for the site.

4.2 - Low-Density Residential

The Single-Family Residential (R-1) zone corresponds to Low-Density Residential land use designations. According to the City's Municipal Code, the R-1 zone accommodates several types of residential uses between three specific Single-Family Residential zones (R-1-5, R-1-12.5, and R-1-20). As proposed as a part of the development proposal for Tier 2 and the conceptual remainder of the Plan Area (Tier 3), the R-1-5 zone district development standards were used as a guide to shape the Low-Density portion of the Plan Area, as shown in Figure 4-1.

Any development proposed within the Planning Area must conform to the City's General Plan, Municipal Code, and the Specific Plan's design guidelines. Table 4-2 lists the development standards for the R-1-5 zoned (Low-Density Residential) portion of the Plan Area. As shown in Figure 4-2, the Low-Density Residential portion of the Plan Area is greater than 50 percent of the total site area. As shown in Table 4-1, the Plan Area has designations for both Low-Density Residential and Medium-Density Residential; there are three Low-Density Residential sites and two Medium-Density Residential sites. The R-1-5/Low-Density Residential area will have to provide a minimum of 274 dwelling units spread over the approximate 51 gross acres to meet the General Plan minimum density. Amenities that R-1-5/Low-Density Residential lots can access include centralized park space, dog park, pedestrian paths/trails, and open space. Pedestrian crossings in the interior of the Plan Area will include stamped asphalt resulting in increased driver awareness and aesthetics.

[1] City of Visalia Single-Family Residential Zone https://codelibrary.amlegal.com/codes/visalia/latest/visalia_ca/0-0-0-33770
[2] City of Visalia Multi-Family Residential Zone https://codelibrary.amlegal.com/codes/visalia/latest/visalia_ca/0-0-0-33965

Table 4-2

Low-Density Residential Development Standards

	Category	Regulation
Land Use	Applicable Zoning District	R-1-5 (5,000 SF Minimum Lot Size)
	Density Range	2-10 dwelling units/ gross acre
	Permitted Uses	Reference Visalia Municipal Code Sec. 17.12.020
	Accessory Uses	Reference Visalia Municipal Code Sec. 17.12.030
	Conditional Uses	Reference Visalia Municipal Code Sec. 17.12.040
Lot Size (Minimum)	Minimum Lot Sizes	4,000 square feet
	Minimum Lot Dimensions	45 feet width 90 feet depth
Setbacks (Minimum)	Front Yard	15 feet to living space 20 feet to front-loading garages
	Side yard (corner lots)	10 feet from property line
	Side yard (interior lots)	5 feet from property line
	Rear yard	15 feet from property line
	Minimum rear yard square footage	Minimum 675 square feet
Distance Between Buildings		6 feet minimum (0 feet for attached units)
Building Massing	Building Height	Reference Visalia Municipal Code Sec. 17.12.110
	Accessory Structure	Reference Visalia Municipal Code Sec. 17.12.090
	Unit Density	Reference Visalia Municipal Code Sec. 17.12.060
Parking Requirements		Reference Visalia Municipal Code Sec. 17.34.020
Fencing and Walls		Reference Visalia Municipal Code Sec. 17.36

Section 17.12.135 of the Visalia Municipal Code depicts that lots less than 5,000 square feet (between 3,600 and 4,999 square feet) are only allowable if they are consistent with certain criteria. This section shall not apply for Low-Density Residential development in the Plan Area.

4.2.1 - Pratt Family Ranch Specific Plan – Low-Density Residential Policies and Standards

The policies and standards identified below will pertain to all developments within the Plan Area's Low-Density Residential area.

- The development standards in Table 4-2 shall be used for the development of the Low-Density Residential area within the Plan Area.
- Lot sizes between 4,000 and 4,999 square feet will be included as a permitted use, and no other permitting criteria will be required.
- Architecture, landscaping, lighting, fencing, and any signage should be complimentary and work together to create and maintain neighborhood identity.
- Exterior wall materials, trim and architectural details that are visible from the street need to be applied equally to all sides of the building in order to promote a diverse community aesthetic for market-rate housing.

- Utility and mechanical equipment are to be screened from view. Ground-mounted air conditioners, coolers, antennas, or other appurtenances are to be screened from an offsite view.
- The Low-Density Residential designated area should incorporate variety in style and detail consistent with the design and color palette identified in the Specific Plan (Figure 4-1). This will allow for the unifying theme to provide a sense of cohesion for the entire site.
- Flashing details (vents, downspouts, and gutters) should be designed to complement the building's overall design, including colors and materials.
- The size, scale, color, proportion, placement, and detailing of architectural features such as porches, balconies, chimneys, doors/ windows, dormers, and fencing should be carefully considered to complement the overall massing and scale of the building.

4.3 - Medium-Density Residential

In accordance with the Specific Plan, the Medium-Density Residential designation within the Plan Area should accommodate small-lot detached single-family dwelling units (reference Figure 4-3). The multi-family portion within the Tier 3 area of the Plan Area is conceptual. A precise development plan shall be submitted to determine conformance with Specific Plan design guidelines. Pedestrian crossings will include stamped asphalt for driver awareness. Table 4-3 lists the development standards for the Medium-Density Residential designated area within the Plan Area. The communities within the Plan Area are not designated as such but are designed to be smaller, inclusive neighborhoods. The Medium-Density Residential area will provide approximately 267 dwelling units on 25.7 acres at a gross density of 10.4 dwelling units per acre. The Medium-Density Residential area is designed to be a gated community. Amenities in the Medium-Density Residential area include secure gated entryways, interior park space, pedestrian paths, and communal parking spaces.

Table 4-3
Medium-Density Residential Development Standards

	Category	Regulation
Land Use	Applicable Zoning District	R-M-2
	Density Range	10-15 units/gross acre
	Permitted Uses	Reference Visalia Municipal Code Sec. 17.16.020
	Accessory Structures	Are prohibited due to lot size constraints
	Conditional Uses	Reference Visalia Municipal Code Sec. 17.16.040
Lot Size (Minimum)	Minimum Lot Sizes	2,500 square feet
	Minimum Lot Dimensions	35 feet width 70 feet depth A minimum of 33 feet of road frontage for all lots in the gated communities.

	Category	Regulation
Setbacks (Minimum)	Front Yard	12 feet to living space 18 feet to front-loading garages
	Side Yards (Corner and Interior lots)	4 feet from property line
	Rear Yard	10 feet from property line
	Minimum rear yard square footage	350 square feet
Distance Between Buildings		6 feet minimum
Building Massing	Building Height	Reference Visalia Municipal Code Sections 17.16.100
Parking Requirements		Reference Visalia Municipal Code Sections 17.34.20
Fencing and Walls		Reference Visalia Municipal Code Sections 17.36.040
Trash Storage		Trash bins are to be stored out of sight from the street, and bins are to be stored in garages or on the side of the residence.
Open Space and Recreational Areas		Five percent of the total site of the Medium-Density Residential sites shall be dedicated of the site to open, common, usable space, and/or recreational facilities for use by tenants. Within the HOA area, each lot will have its own private usable open space to assist with meeting the Open Space requirement.
Screening		Reference Visalia Municipal Code Sections 17.16.160
Screening Fence		Reference Visalia Municipal Code Sections 17.16.170
Landscaping		Reference Visalia Municipal Code Sections 17.16.180

4.3.1 - Pratt Family Ranch Specific Plan – Medium-Density Residential Policies and Standards

The policies and standards identified below will pertain to all developments within the Plan Area's Medium-Density Residential area.

- The proposed single-family dwelling residences proposed in the Medium-Density Residential area are deemed as a permitted use if it meets the required density depicted in the City's General Plan. All other uses shall reference the City of Visalia's Municipal Code Section 17.16.020.
- The development standards in Table 4-3 should be used for the development of the Medium-Density Residential area within the Plan Area.
- Architecture, landscaping, lighting, fencing, and any signage should be complimentary and work together to create and maintain neighborhood identity.
- Exterior wall materials, trim and architectural details that are visible from the street need to be applied equally to all sides of the building in

order to promote a diverse community aesthetic for market-rate housing.

- Utility and mechanical equipment are to be screened from view. Ground-mounted air conditioners, coolers, antennas, or other appurtenances are to be screened from an offsite view.
- The Medium-Density Residential designated area should incorporate variety in style and detail consistent with the design and color palette identified in the Specific Plan (Figure 4-1). This will allow for the unifying theme to provide a sense of cohesion for the entire site.
- Flashing details (vents, downspouts, and gutters) should be designed to complement the building's overall design, including colors and materials.
- The size, scale, color, proportion, placement, and detailing of architectural features such as porches, balconies, chimneys, doors/ windows, dormers, and fencing should be carefully considered to complement the overall massing and scale of the building.

In order to provide the City of Visalia with a unique alternative for typical single-family dwelling units that is attractive to a first-time homebuyer, some creative design elements were implemented that deviate from typical development standards. For instance, lot size and setbacks for the Medium-Density Residential area differ from the City's Municipal Code. Shorter setbacks appeal to prospective home buyers that do not want the burden of maintaining a front yard with landscaping due to the investment of labor/capital and the perception of usable space. Additionally, the Model Water Efficient Landscape Ordinance (MWELO) standards limit front yard grass to 25 percent less of the landscaped area. However, it is still the homeowner's responsibility to have property equipment or hire a service to maintain a smaller front yard. The prospective homeowner can potentially eliminate the grass altogether, reducing maintenance costs, all while maintaining an aesthetically pleasing front yard.

4.4 - Signage

Signs provide an important element of community design. Proper design and application of signs help orient people and increase a community's sense of place. By directing visitors and residents to desired locations, signage improves circulation efficiency and access to important destination points. The design and style of signage also contribute to the character and setting for residential, recreation, and public use areas. Section 17.48 Sign Regulations of the City of Visalia's Municipal Code shall apply to development within the Specific Plan.

The Plan Area will utilize a variety of permanent signs that intends to symbolize and identify each community and overall project name. Signage will be strategically placed throughout the arterial and collector roadways that will service the Plan Area as a part of the current development proposal in the Plan Area (Figure 4-4). The developer will be able to choose the styling and/or material of the signs as depicted in the examples shown in Figures 4-5a and 4-5b. The signs implemented in the Plan Area will be considered Monument Signs which are free-standing double-faced signs to be installed as shown on site plans and as illustrated in Figure 4-4. Signs may be double-faced with copy on both sides.

4.4.1 - Signage Policies

- All signs should be reviewed for conformance with these criteria and overall design quality. Approval or disapproval of sign submittals based on the aesthetics of design should remain the sole right of the developer.
- Prior to the installation and manufacture of any sign, the tenant should obtain a sign

permit from the City of Visalia and provide a copy to the developer.

- Each developer should pay all costs for its signs, including manufacture, installation, maintenance, and City permits/certificates.
- The established Lighting and Landscaping Maintenance District (LLMD) should be responsible for any repair or damage to any surface caused by the signage or its installation.
- Signs will be allowed to be double-faced with copies on both sides.

4.4.2 - Sign Design

- Signs should be designed in a manner that is not only imaginative but also of high graphic quality. In addition, signs should be compatible with and complementary to adjacent facades. All signs will comply with Visalia Municipal Code Section 17.48.090.
- Notwithstanding the maximum square footage specified for copy area allowances, signs and topography in all cases should appear balanced and in scale within the context of the sign space and the building as a whole. The thickness, height, and color of sign lettering should be visually balanced and in proportion to other signs.
- Walls signs should be affixed without visible means of attachment. The location of all signs should be as directed by the developer.

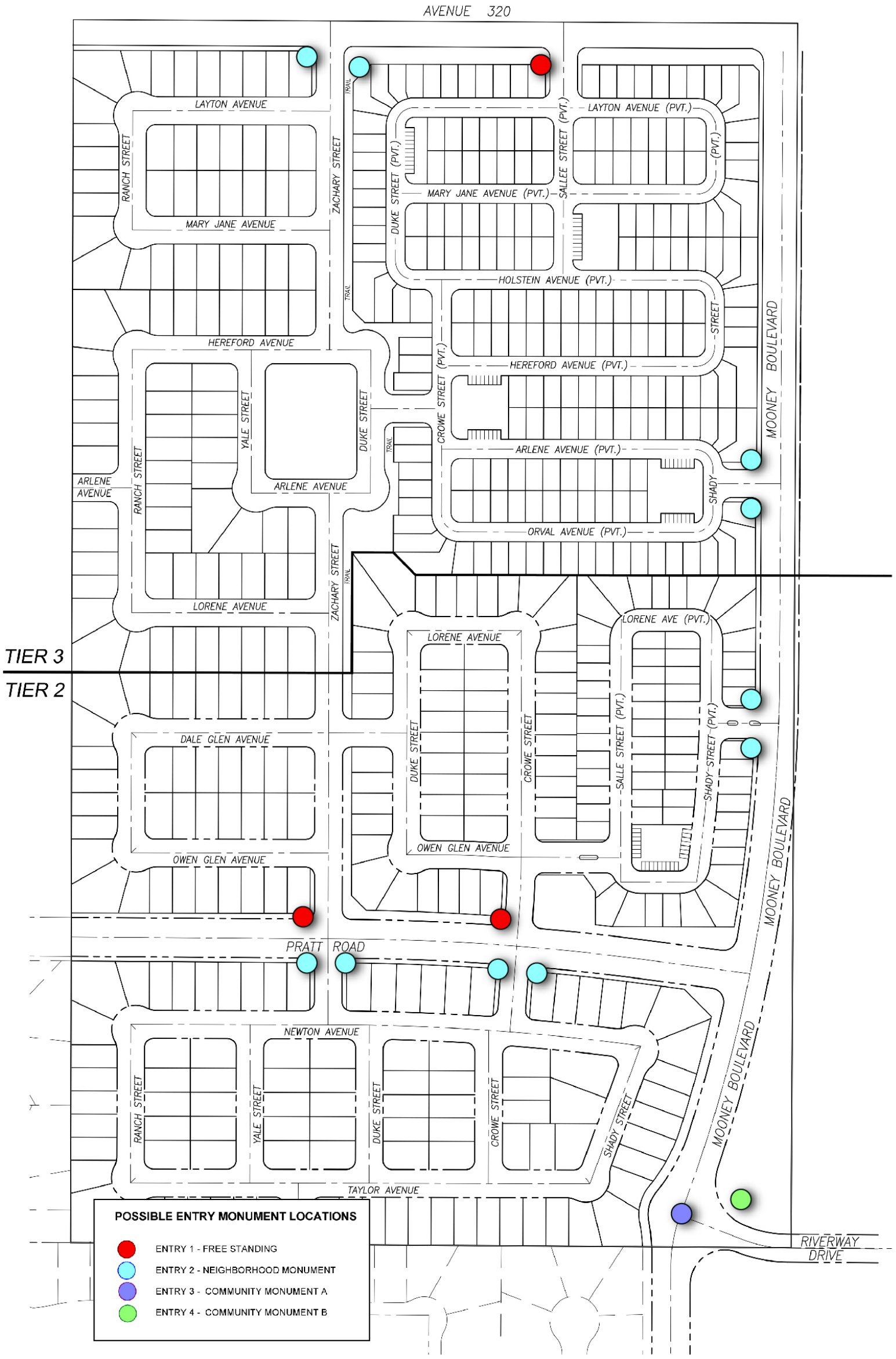
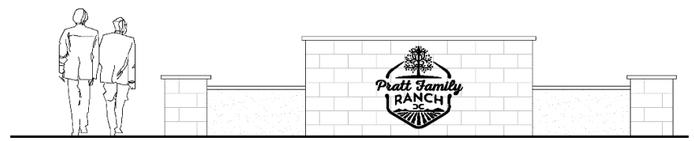
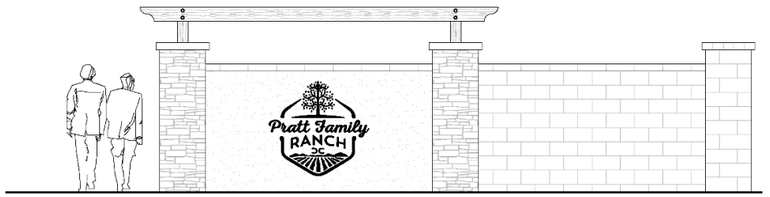


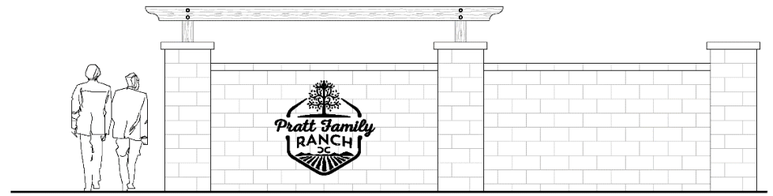
Figure 4-4

Signage Location

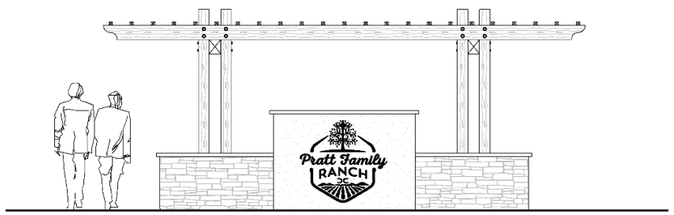


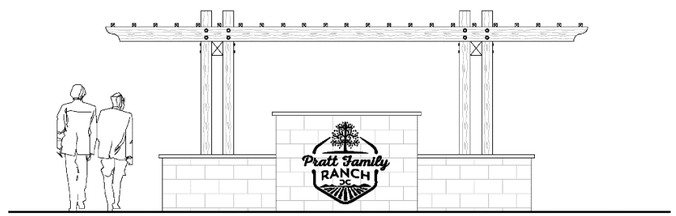
ENTRY 1 - FREE STANDING MONUMENT



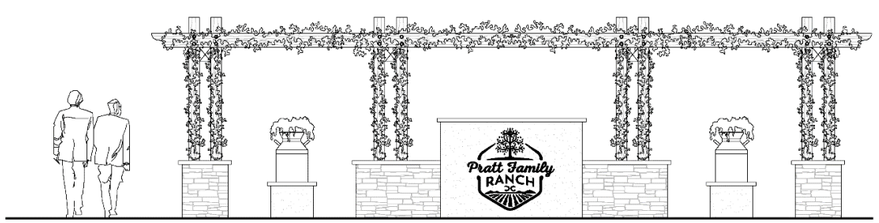


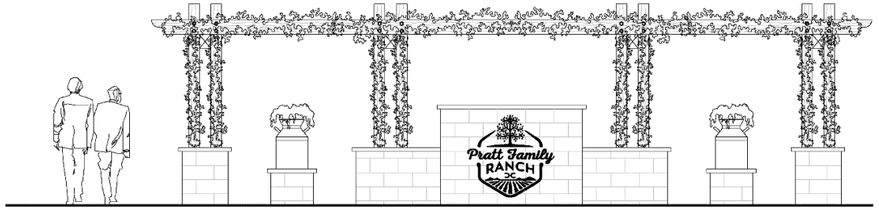
ENTRY 2 - NEIGHBORHOOD MONUMENT





ENTRY 3 -COMMUNITY MONUMENT A





ENTRY 4 - COMMUNITY MONUMENT B

Figure 4-5a

Signage Examples

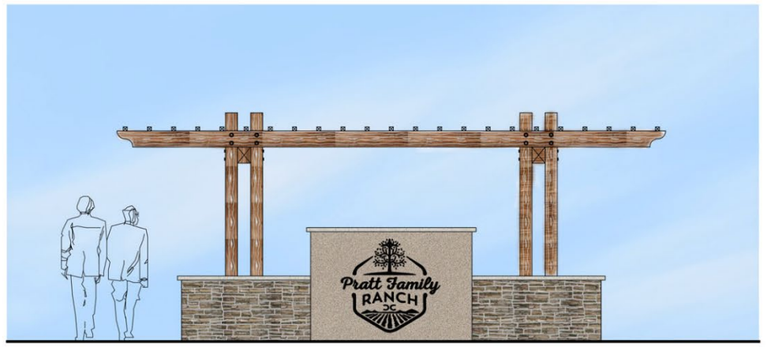


Figure 4-6b

Signage Examples (Colored)

4.5 - Fencing and Walls

Walls and fences are necessary elements for the Plan Area, providing safety, security, privacy, property definition, and noise attenuation. Walls and fences can also be included in gateway features and can provide separation between residential areas and more intensive uses. Poorly designed walls and fences can become a noticeable feature that detracts from the quality and character of a neighborhood. Therefore, all wall and fence designs within the Plan Area should be tightly regulated. A creative and controlled approach to walls and fences should be established to maintain an overall design consistency within the Plan Area. Fencing throughout the Plan Area should be coordinated under a single-fencing system that identifies the type, appearance, and placement. Fencing and walls should be completed as development occurs within the Plan Area and should be the responsibility of the adopted LLMD for maintenance and liability. The construction material may vary for each development proposal as long as the design of the walls/fencing is consistent with Figures 4-6a and 4-6b, and the location is consistent with Figure 4-7.

4.5.1 - Wall and Fence Policies and Standards

Plan Area

- Fence types should be located as illustrated in Figures 4-6a and 4-6b.
- Fences are to be located along property lines with the pursuant setbacks.
- Walls will be required to conform to the applicable zone district.

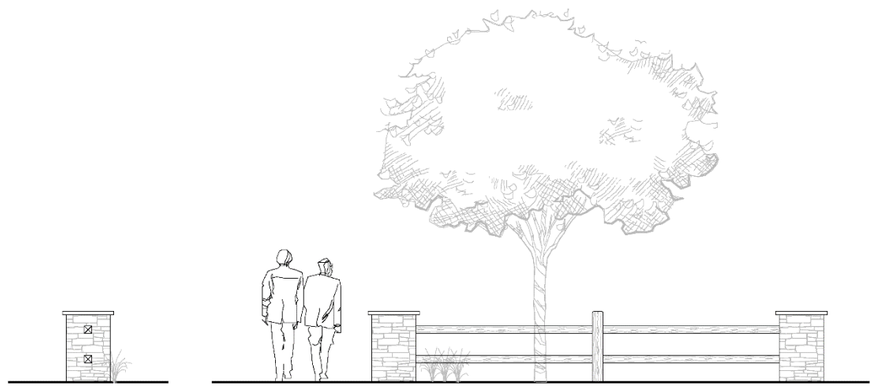
Low-Density Residential Designations

- Required block walls for residential developments along arterial or collector roadways should be designed to provide a pedestrian pathway between the arterial or collector to the residential development. A pedestrian pathway should always be required as part of the block wall design abutting an arterial or collector roadway when a transit stop is located within one-quarter mile of the residential development.
- The pedestrian pathway is a designated walkway that is landscaped throughout the development.

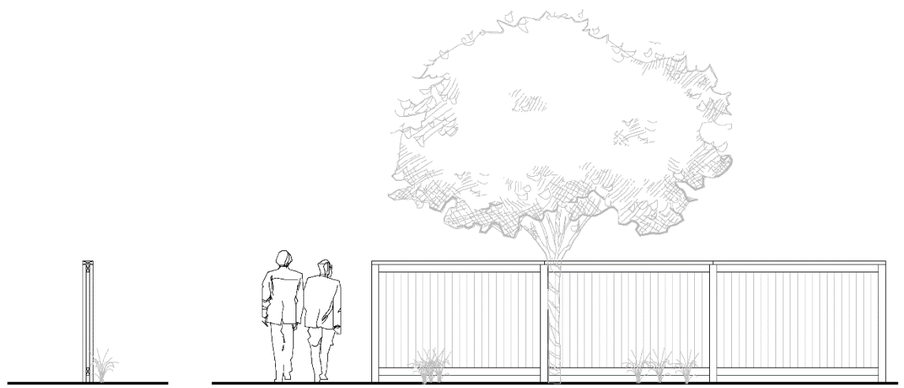
Medium-Density Residential Designation

- Fences, walls, and hedges not exceeding seven feet in height should be permitted, except that a fence, wall, or hedge should not exceed three feet in height in a required front yard. A fence or wall may be allowed to a height of four feet, provided that the additional one-foot height is at least 50 percent open.
- The pedestrian pathway is a designated walkway that is landscaped throughout the development.
- Required block walls, fences, and wrought iron fences for multi-family developments along arterial or collector roadways should be designed to provide a pedestrian pathway between the arterial or collector to the multi-family residential development. A pedestrian pathway should always be required as part of the block wall or fences abutting an arterial or collector roadway when a transit stop is located within one-quarter mile of the multi-family residential development.

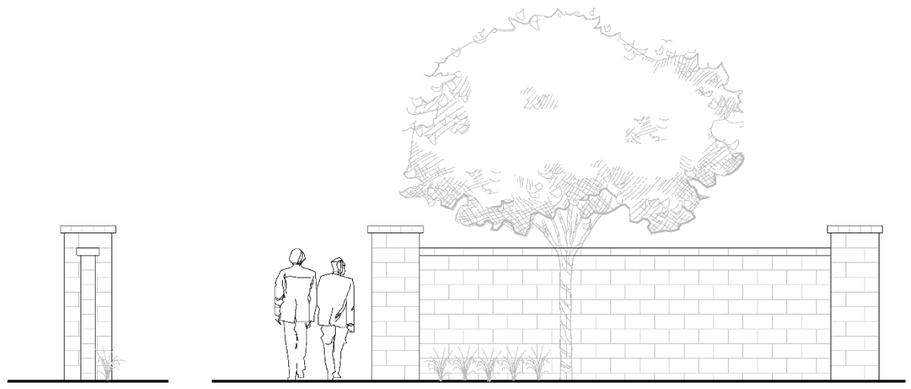
Additionally, all decorative fencing and walls used in the Plan Area should be installed and coordinated with appropriate landscaping consistent with the design guidelines/standards contained in Section 4.7.



COMMUNITY SPLIT RAIL FENCE WITH PILASTER



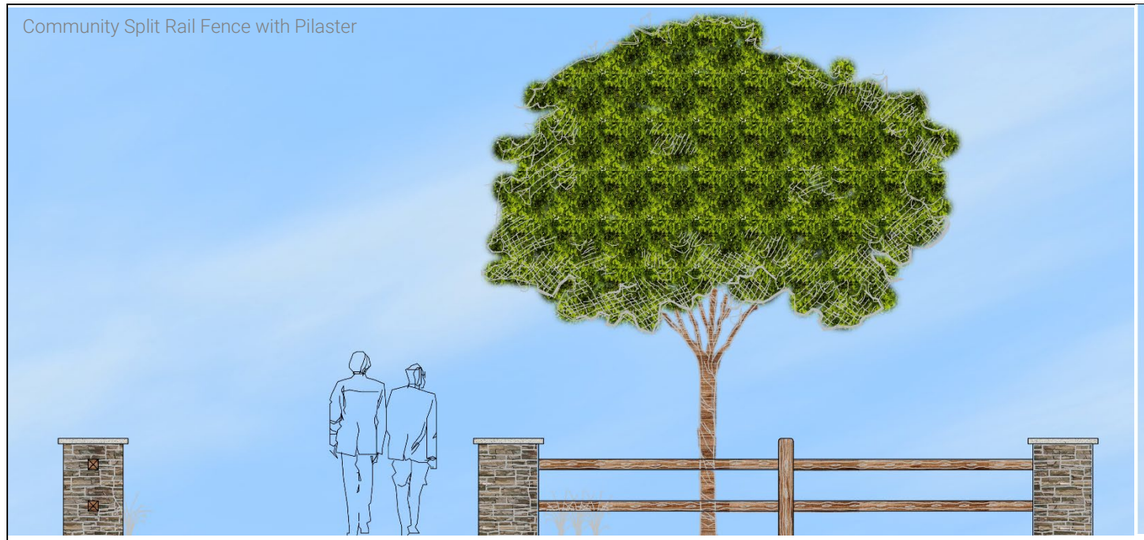
WOOD FENCE

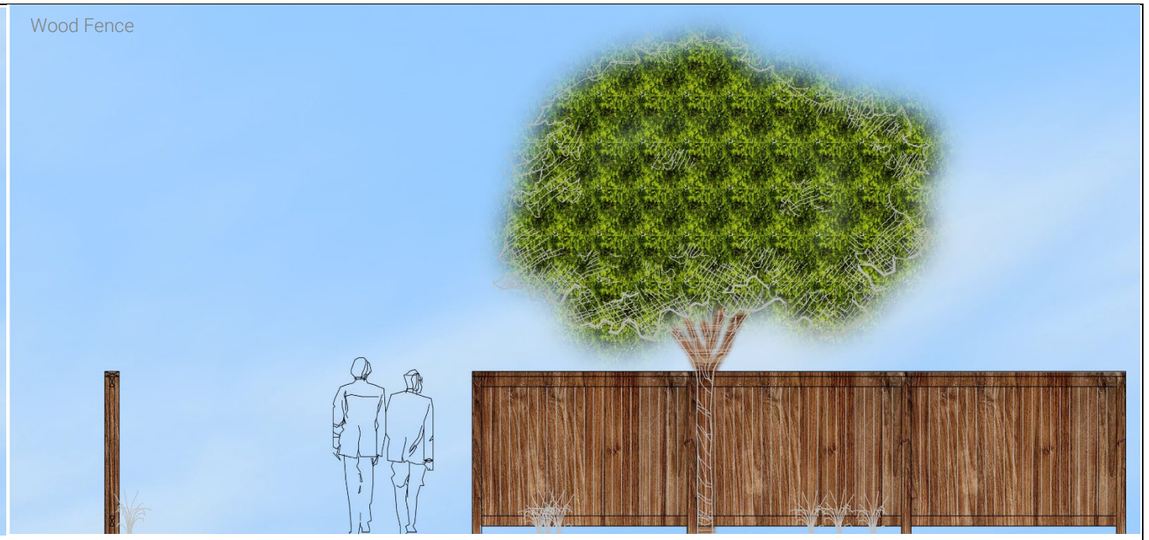


BLOCK WALL

Figure 4-6a

Fence Types





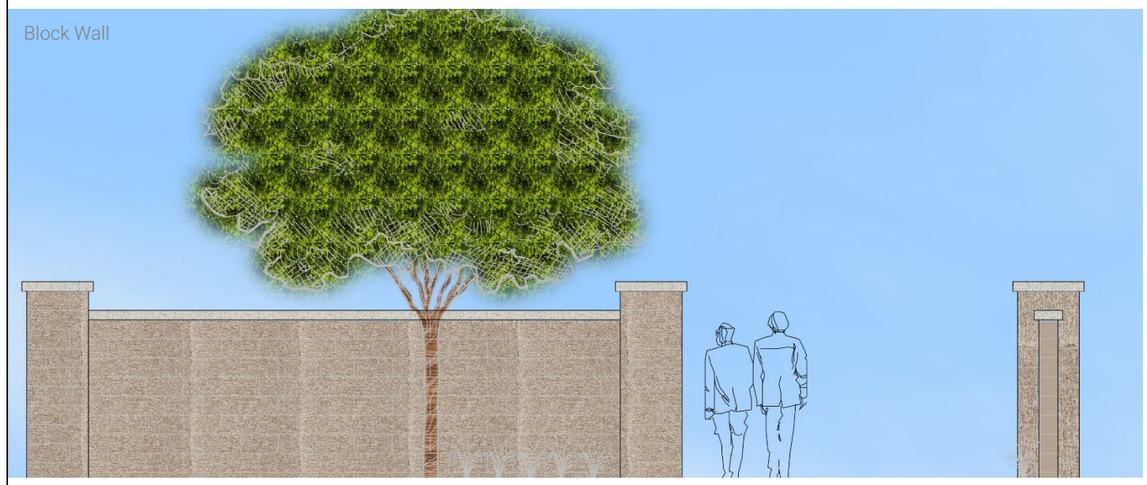


Figure 4-6b

Fence Types (Colored)

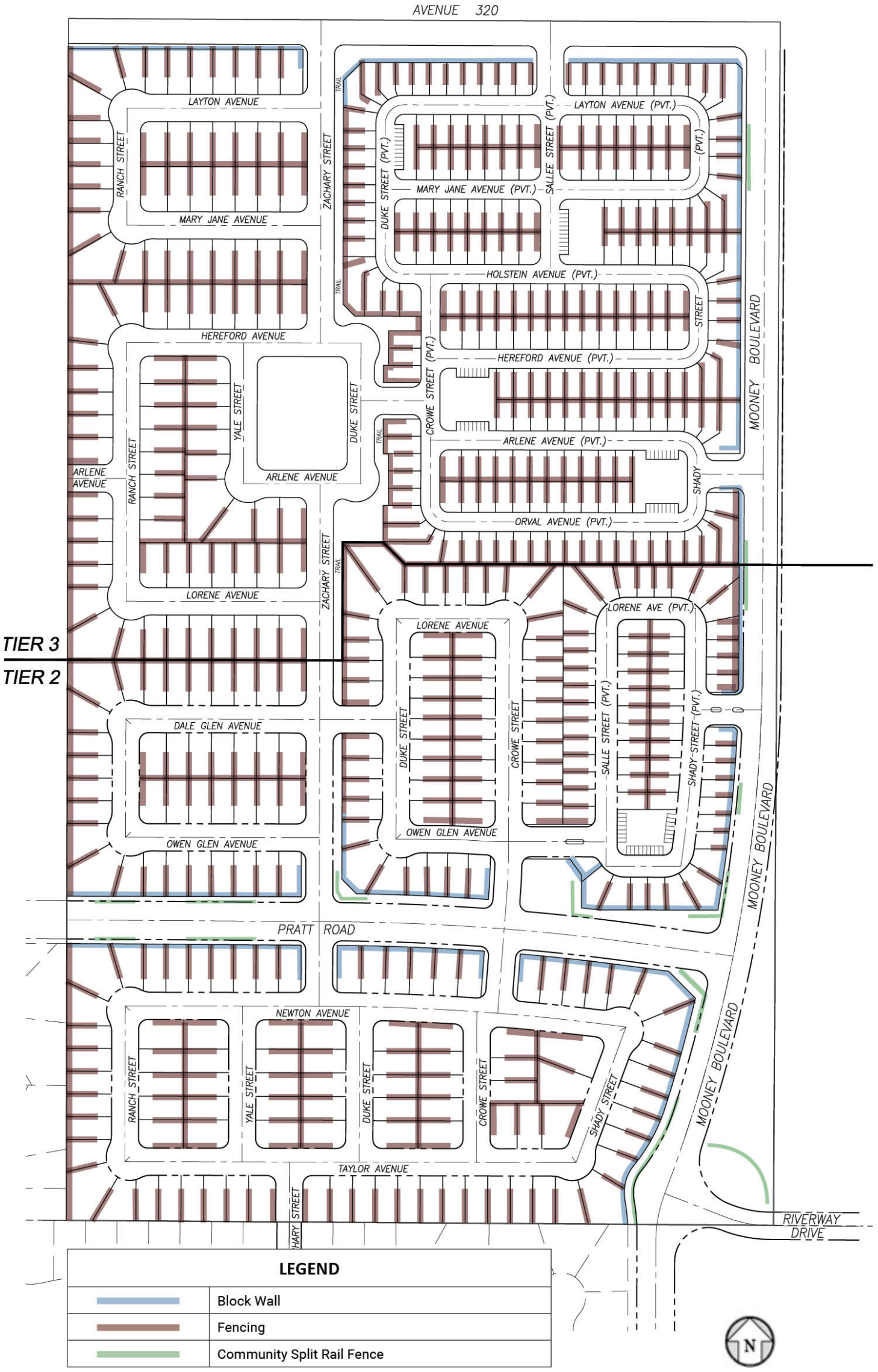


Figure 4-7

Fencing/Wall Type Location

4.6 - Streetscape and Lighting

An attractive streetscape can enhance the livability and desirability of the Plan Area. Features such as street trees, lighting, landscaping, sidewalks, street widths, housing setbacks, and fencing are just a few factors that contribute to an attractive streetscape. An emphasis on streetscape design is necessary to create areas that encourage pedestrian circulation and interaction while reducing auto dependency. An overall lighting plan can contribute to the community identity of the Plan Area.

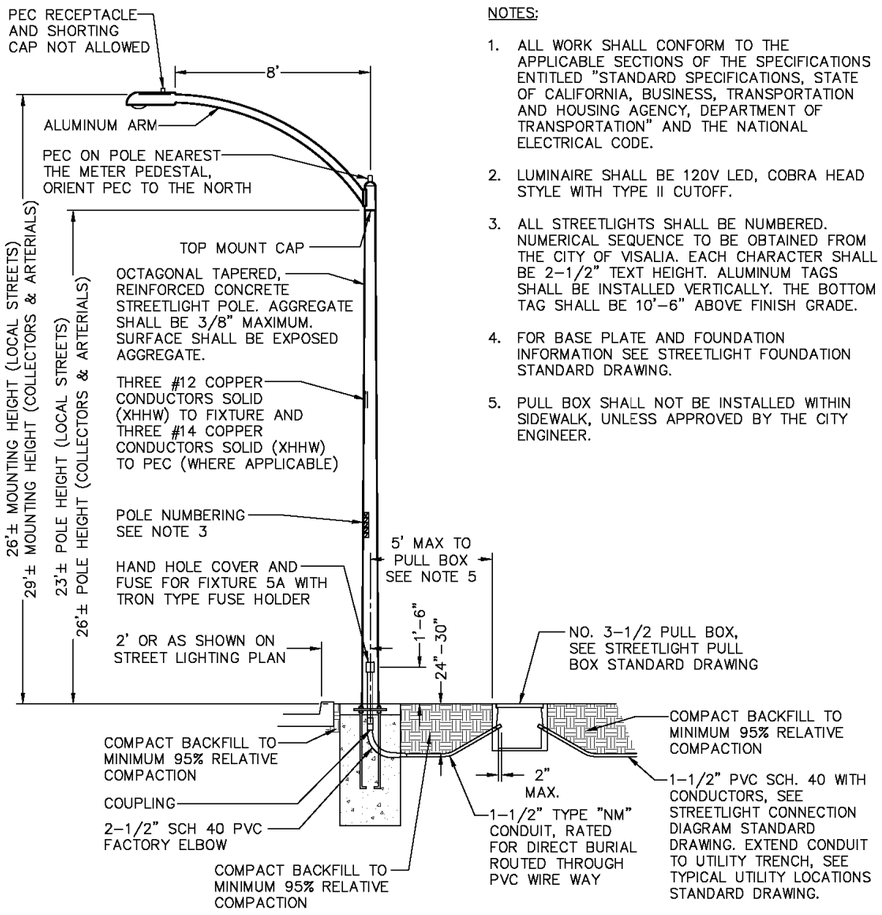
Streetlighting along arterials and collectors street corridors will consist of the standard City's cobra head streetlight. The entire height of the pole will be approximately 29 feet. Along the local street corridors, each community will incorporate the City's standard ornamental streetlight design, which is approximately 25 feet in height. Figure 4-8 depicts the approximate location of the types of street lighting. The exact placement will coincide with the City of Visalia's design and improvement standards for local, collector, and arterial street corridors (Figures 4-8a and 4-8b). This will ensure that streetlight facilities will be properly spaced to provide sufficient lighting for vehicles, pedestrians, and cyclists.

4.6.1 - Lighting Policies and Standards

- Lighting should be provided to ensure a safe environment but should not cause areas of intense light or glare.
- Lighting should be sensitive to adjacent land uses and viewsheds. Architectural features or lighting fixtures that provide down-lighting and lighting that is shielded from adjacent uses should be implemented.
- Street lighting standards should be dependent upon City and Southern California Edison (SCE) requirements.
- All parking lots (within the Medium-Density Residential), pedestrian, and safety lighting should provide uniform illumination and be situated and shielded so as not to cause glare or excessive light spillage on adjacent uses.
- Plan Area theme lighting specifications are as follows:
    - Perimeter lights along Mooney Boulevard, Pratt Road, and Avenue 320: SCE cobra head drop glass on a 26-foot-high pole. The mounting element for the cobra headlight adds approximately three feet, for a total height of 29 feet. The luminaire should be a 120v Light-Emitting Diode (LED), cobra head style with Type II cutoff.
    - Interior lights along all local streets: City standard ornamental lights on an approximate 20-foot-high pole. The mounting fixture adds approximately two feet, totaling 22 feet. The luminaire should be an LED-style lighting implement.

Medium-Density Residential street and parking area lights will use the same design as the interior lights.

Standard Streetlight



NOTES:

1. ALL WORK SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE SPECIFICATIONS ENTITLED "STANDARD SPECIFICATIONS, STATE OF CALIFORNIA, BUSINESS, TRANSPORTATION AND HOUSING AGENCY, DEPARTMENT OF TRANSPORTATION" AND THE NATIONAL ELECTRICAL CODE.
2. LUMINAIRE SHALL BE 120V LED, COBRA HEAD STYLE WITH TYPE II CUTOFF.
3. ALL STREETLIGHTS SHALL BE NUMBERED. NUMERICAL SEQUENCE TO BE OBTAINED FROM THE CITY OF VISALIA. EACH CHARACTER SHALL BE 2-1/2" TEXT HEIGHT. ALUMINUM TAGS SHALL BE INSTALLED VERTICALLY. THE BOTTOM TAG SHALL BE 10'-6" ABOVE FINISH GRADE.
4. FOR BASE PLATE AND FOUNDATION INFORMATION SEE STREETLIGHT FOUNDATION STANDARD DRAWING.
5. PULL BOX SHALL NOT BE INSTALLED WITHIN SIDEWALK, UNLESS APPROVED BY THE CITY ENGINEER.

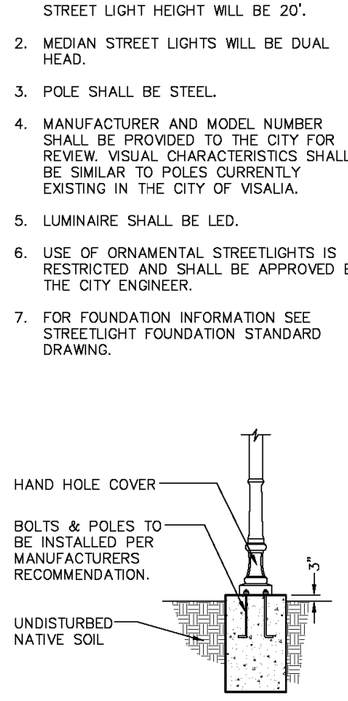
APPROVED BY: _____ CITY ENGINEER R.P.E. 81734 09/16/16 DATE

CITY OF VISALIA
DESIGN & IMPROVEMENT STANDARDS

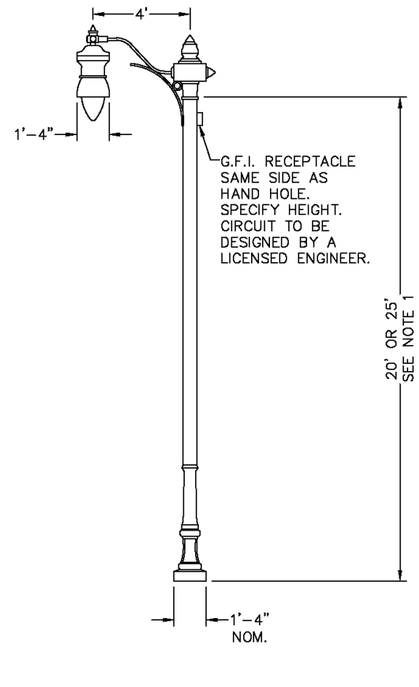
Ornamental Streetlight

NOTES:

1. DOWNTOWN AND TRANSIT AREA STREET LIGHT HEIGHT WILL BE 25'. RESIDENTIAL STREET LIGHT HEIGHT WILL BE 20'.
2. MEDIAN STREET LIGHTS WILL BE DUAL HEAD.
3. POLE SHALL BE STEEL.
4. MANUFACTURER AND MODEL NUMBER SHALL BE PROVIDED TO THE CITY FOR REVIEW. VISUAL CHARACTERISTICS SHALL BE SIMILAR TO POLES CURRENTLY EXISTING IN THE CITY OF VISALIA.
5. LUMINAIRE SHALL BE LED.
6. USE OF ORNAMENTAL STREETLIGHTS IS RESTRICTED AND SHALL BE APPROVED BY THE CITY ENGINEER.
7. FOR FOUNDATION INFORMATION SEE STREETLIGHT FOUNDATION STANDARD DRAWING.



SECTION



ELEVATION

APPROVED BY: _____ CITY ENGINEER R.P.E. 81734 09/16/16 DATE

CITY OF VISALIA
DESIGN & IMPROVEMENT STANDARDS

Figure 4-8a

Plan Area Lighting

Figure 4-8b

Plan Area Lighting

4.7 - Landscaping

Landscaping should be used to define the edges of properties, provide a transition between neighboring properties, and highlight pedestrian pathways. The landscape palette in Figure 4-9 provides a list of approved species. This landscape palette and plan have been established for the Plan Area to ensure the consistent and proper use of plant materials, trees, and shrubs that have been designed to landscape the streetscape, entryways, and different design elements programmed throughout the Plan Area. Final landscaping details will be provided with Improvement Plans as development occurs within the Plan Area and is subject to the Model Water Landscape Ordinance (MWELO) City standards. Pedestrian pathways will be constructed as adjacent development occurs.

Inspiration for the landscaping palette came from an interest in combining the aesthetic of the French Countryside with the rural aspects of the agrarian qualities of the San Joaquin Valley. Walls and fences will have landscaping incorporated into the design when they front along a major roadway. The texture and color of the plants selected will be deliberate in design, creating interesting patterns. Low-lying flowering shrubs will line the pedestrian pathway with prominent trees located at the entryways. The Plan Area will feature a mixture of deciduous and evergreen trees, providing a pleasing aesthetic throughout the year. French lavender will be placed in rows to imitate row crops found in the surrounding agricultural land. The landscape aesthetic will be unique to the Pratt Family Ranch Plan Area and reinforce the importance of a neighborhood community. Landscaping will play an integral role in the aesthetic view of the trail system that traverses the Plan Area. Figure 4-10 shows how the landscaping will interact with the architectural style of the French Countryside aesthetic. Figure 4-11 shows the color palette and material that will be used for development within the Plan Area. The color scheme will be applicable for all residences constructed along with all public features within the plan area. Figure 4-12 depicts a conceptual design of the dog park located northeast of the Mooney Boulevard and West Riverway Drive intersection.

Landscaping Policies and Standards

- The landscaping specifications in Figures 4-9 through 4-11 should apply to all landscaped areas of the Plan Area.
- For all other specific landscaping policies, refer to the City of Visalia's Municipal Code.

4.8 - Elements of Project Design

4.8.1 - Site Planning

Placement of structures will be sited in a manner that will complement the adjacent structures. Sites will be developed and coordinated in a manner to provide order and diversity. The Conceptual Map (Figure 4-1) outlines the potential lot configuration that can occur within the Plan Area. Any future development proposals may vary in design as allowed by the Specific Plan as long as it maintains consistency between City of Visalia's General Plan, Municipal Code, and Pratt Family Ranch Specific Plan.

Since the Plan Area is designated as primarily residential land uses, structures will be configured to minimize conflicts between vehicles and pedestrians. The use of enhanced paving and landscaping will define walkways allowing for an interior network to connect to trails and pedestrian paths outside of the Plan Area.

Theme Tree
Quercus agrilfolia - Live Oak

Accent & Background Trees

Olea europaea 'Wilsonii'
Olive

Platanus racemosa
California Sycamore

Street Trees

Acer rubrum 'October Glory'
Red Maple

Koelreuteria paniculata
Goldenrain

Magnolia x 'Elizabeth'
Elizabeth Magnolia

Pistacia Chinesis
Chinese Pistache

Platunus acerfolia 'Bloodgood'
London Plane Tree

Ulmus parvifolia
Chinese Elm 'Allee'

Community Theme

Buxus sempervirens
Boxwood

Lavandula Stoechas
French Lavender

Pennisetum setaceum 'Rubrum'
Purple Fountain Grass

Salvia greggii
Autumn Sage

Salvia leucantha 'Santa Barbara'
Santa Barbara Mexican Bush Sage

Rosa x 'Noare'
Flower Carpet Red
Groundcover Rose

Trachelospermum jasminoides
Star Jasmine

Nieghborhood Themes

Callistemon 'Little John'
Little John Bottle Brush

Dianella revoluta
'Little Rev'
Little Rev

Encelia californica
Bush Sunflower

Ficus Pumila
Creeping Fig

Myoporum parvifolium 'Pink'
Myoporum

Ligustrum j. 'Texanum'
Waxleaf Privet

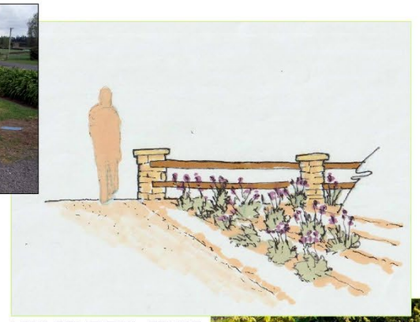
Lonicera semperrvirens
'Magnifica'
Trumpet Honeysuckle

Salvia leucantha 'Santa Barbara'
Santa Barbara Mexican Bush Sage

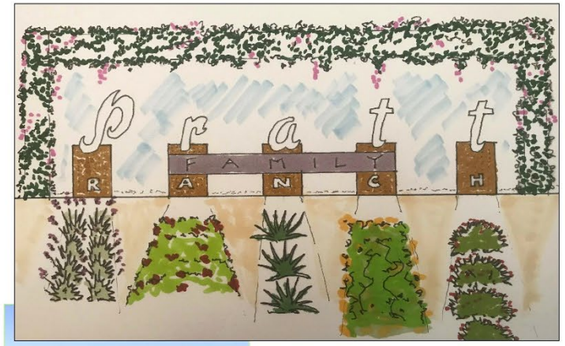
PLANT PALETTE

Figure 4-9

Landscaping Palette



LOW SPLIT RAIL FENCE

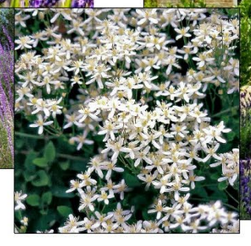


Theme Tree
Quercus agrifolia - Live Oak

ENTRY MONUMENT

LANDSCAPE CHARACTER

RUSTIC

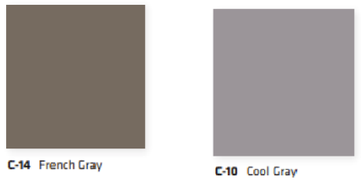


PLANT PALETTE

LANDSCAPE THEME EXHIBIT -French Country

Figure 4-10

Landscaping Detail



ACCENT CONCRETE COLORS -LM SCOFIELD

WOOD STAIN - SHERWIN-WILLIAMS "SPICE CHEST"

DECORATIVE LASER CUT PANELS - ARTISAN PANELS

ACCENT STONE VENEER - EL DORADO STONE "CASTAWAY"

RUSTIC HARDWARE -

DECOMPOSED GRANITE - CALIFORNIA GOLD

COLOR PALETTE BY RICHARD DARNER DESIGN

COLOR-MATERIAL EXHIBIT

Figure 4-11

Colors and Materials

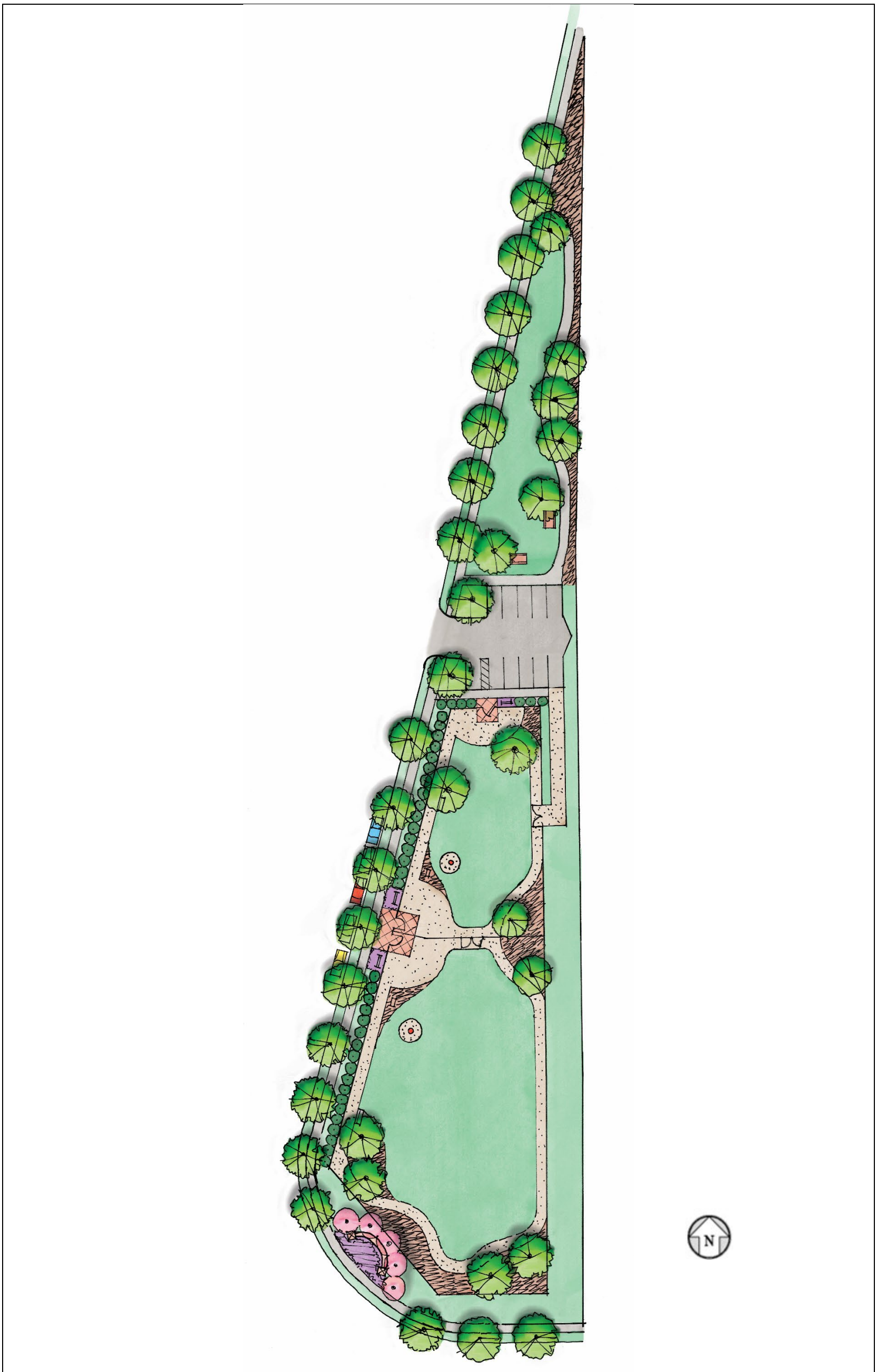


Figure 4-12

Dog Park Concept

4.8.2 - ARCHITECTURE

The architectural styles for buildings in each of the villages shall provide a blend of building forms, massing, scale, and character that creates a pedestrian-oriented environment meant to be viewed and experienced on foot rather than from a car.

The overall architectural theme of the Plan Area shall be consistent with the landscaping palette and associated colors. The architecture and signage throughout the Plan Area will tie into the landscaping style of the French Countryside. Figure 4-11 shows the colors and materials used throughout the Plan Area for the building exterior, trim, and stonework.

Architecture Policies and Standards

- The height and scale should be compatible with that of the surrounding development.
- Color palettes of proposed structures should incorporate similar or complementary colors to the Specific Plan color palette.
- Elevations of structures should be approved by the City of Visalia's Planning Department in order to maintain a consistent theme.
- The roofline within the Medium-Density Residential area should not be closer than two feet to the respective property line.

Section 5 - Circulation

5.1 - Circulation

The circulation network primarily consists of local streets, collectors (Riverway Drive and Pratt Avenue) and arterials (Mooney Boulevard and Avenue 320), and interconnected pedestrian paths (reference Figure 5-1). Streets are intended to be an integral part of the community design and require careful design of the roadway, parkway landscaping, and the architectural treatment and location of the homes fronting that street. Street sections within and surrounding the Plan Area are designated hierarchically (Figures 5-2 and 5-3). The intent of the circulation network in the Plan Area is to provide safe and efficient movement for motorists, cyclists, and pedestrians. Numerous ingress/egress points throughout the Plan Area provide circulation options.

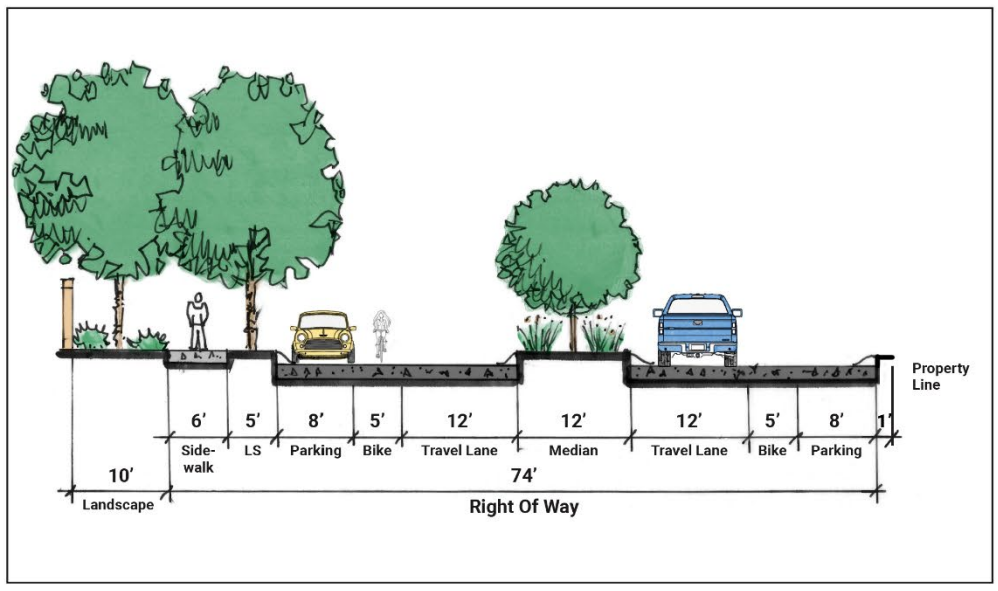
Pedestrian circulation is a prominent and important feature in the Plan Area. A designated pedestrian path connects the various land uses within the Plan Area. The pedestrian path network will be adequately landscaped in certain locations to provide shade and an aesthetic environment. All streets within the Plan Area are lined with sidewalks, with the exception of the gated Medium-Density Residential area. The sidewalk system is designed to accommodate two people walking side-by-side. A planting strip is provided between all residential streets and sidewalks to create a safety zone, separating pedestrian space from motor vehicle space. Planting strips must be wide enough to accommodate street trees and provide shade to pedestrians and cyclists. Cross-sections of roadways will be consistent with the City of Visalia's design and improvement standards with the exception of the right of way within the gated Medium-Density Residential area. The cross-section of the Medium-Density Residential area is detailed in Figure 5-3. Attractive street trees that provide canopies and landscaping along the streets and roads are an important element of the design fabric of the community. These design concepts are embodied by the street sections included within this Specific Plan. Sidewalks are to be located on both sides of the street in all situations where the Plan Area fully encompasses the street's right of way.

The Specific Plan, as a part of the Plan Area design, proposes to include a roundabout at the intersection of Riverway Drive and Mooney Boulevard. This will allow Mooney Boulevard to shift to the easterly edge of the Plan Area, maximizing the Plan Area's potential and offering greater neighborhood connectivity. A portion of Modoc Ditch will be undergrounded to accommodate the right of way for the proposed roundabout at Mooney Boulevard and Riverway Drive.

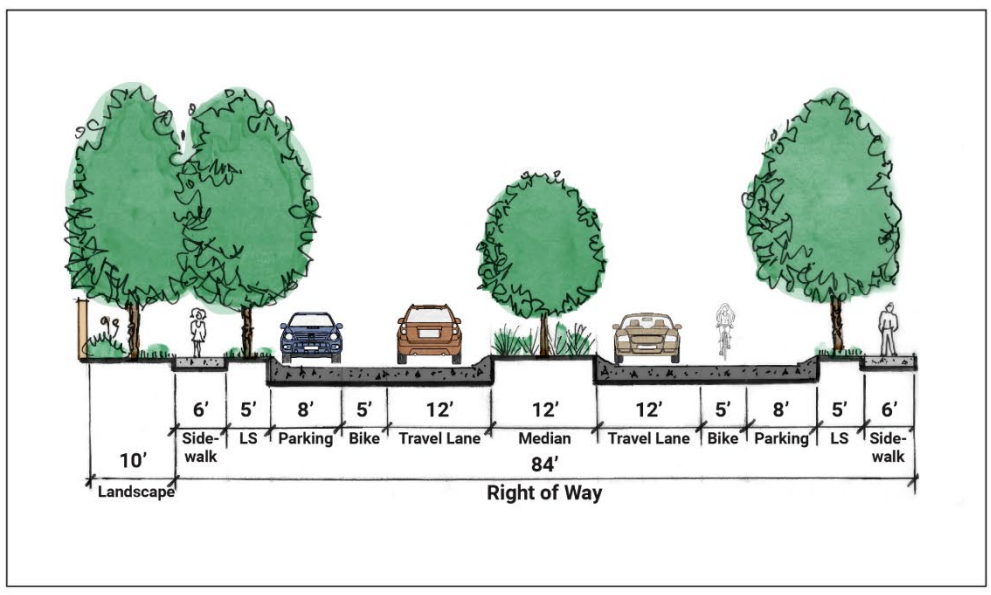
According to the City of Visalia's Circulation Element, Riverway Drive and Pratt Avenue are classified as collectors (both are two lanes) with a final right-of-way (ROW) width of 84 feet; Avenue 320 and Mooney Boulevard are classified as a planned arterial. Avenue 320's ROW at buildout will be 110 feet with four lanes. Currently proposed as a part of the Specific Plan is the south half of Avenue 320. Mooney Boulevard is designated in the General Plan as a two-lane arterial; however, the City of Visalia does not have a standard for a two-lane arterial. Therefore, the two-lane collector ROW diagram will be used for the purposes of this Specific Plan. All streets in the Plan Area will be constructed to their full width per City standards.

Figure 5-1

Circulation Plan



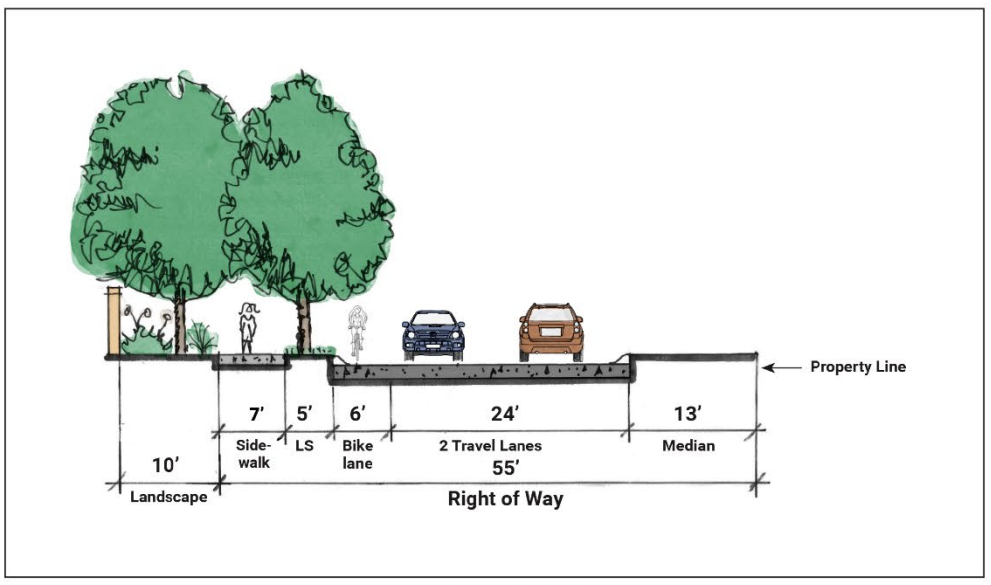
MOONEY BOULEVARD NORTH OF CURVE



MOONEY BOULEVARD

Looking North from Roundabout

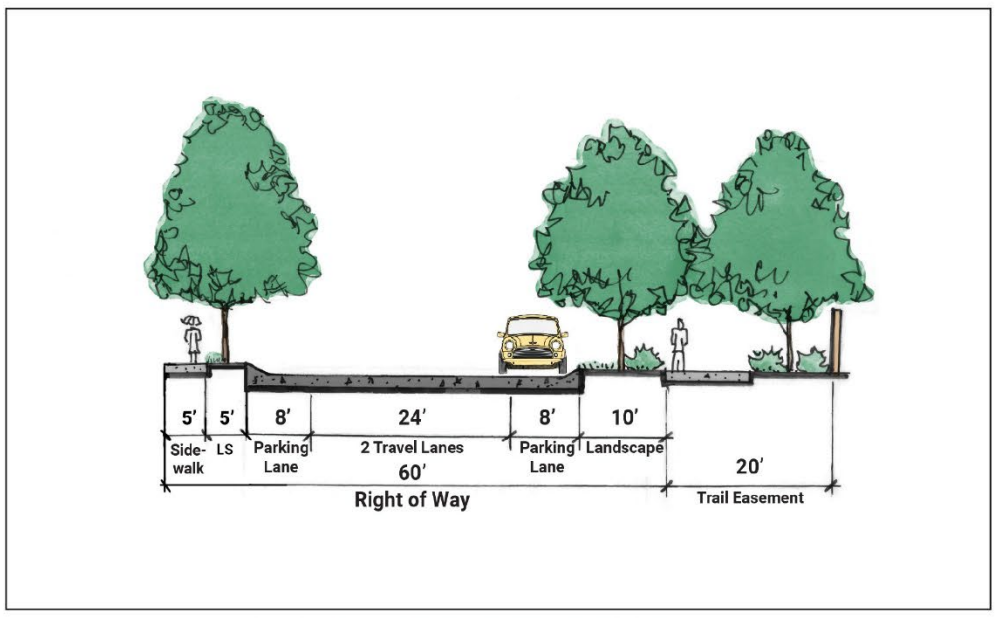
Note: Pratt Road – same, but with center turn lane instead of median



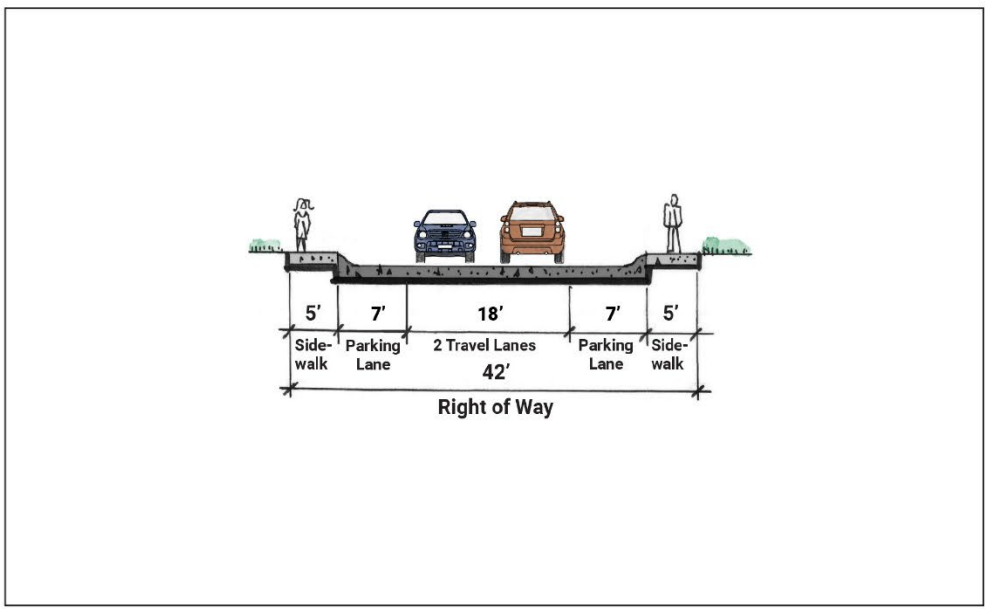
AVENUE 320

Figure 5-2

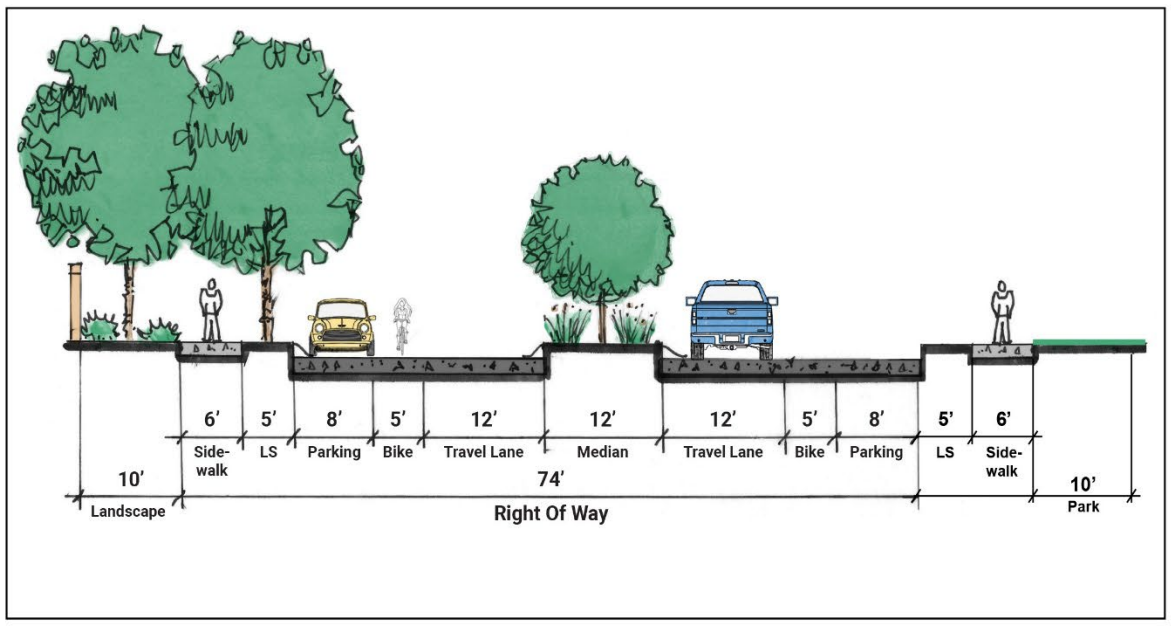
Street Cross Section #1-4



LOCAL STREET WITH TRAIL



PRIVATE STREET



MOONEY BLVD BETWEEN ROUNDABOUT AND PRATT ROAD

Figure 5-3

Street Cross Section #4-5

5.2 - Entryways

Public entryways into the site will be off Mooney Boulevard, Avenue 320, and Pratt Road. The entire Plan Area's entryways are designed to handle residential uses since that is the intention of the Specific Plan. As Pratt Road intersects the Plan Area horizontally, there are four entryways planned, two to the north and two to the south. Mooney Boulevard and Riverway Drive meet at the southeast corner and form a traffic circle. Mooney Boulevard deviates from a straight linear street to a curvilinear street whose alignment shifts to the east to meet the Plan Area's eastern boundary (Figure 5-1). As Mooney Boulevard travels northward, there are two entryways along the extent of the street, one of which will be a gated entrance. The extent of Mooney Boulevard ends at the intersection of Avenue 320 to the north. Avenue 320 caps off the northern boundary of the Plan Area. Avenue 320 has two entryways along the extent, one of which will be a gated entrance. See Figure 5-1 for reference.

5.3 - Public Transit

The circulation system within the Plan Area is designed to accommodate public transit services when planned by the City of Visalia. The nearest identified public transit routes and bus stops are along Riggin Avenue and Dinuba Boulevard. Currently, there are no bus stops or bus routes planned within or immediately adjacent to the Plan Area. As proposed in the Specific Plan, the Pedestrian Trail and Bike Path will connect to southbound Mooney Boulevard and allow for residents of the Plan Area to walk/ride to the nearest public transit routes/bus stops. Route 7 of the Visalia City Coach travels along Ferguson Avenue, connects with Routes 8 and 16 at the intersection of Dinuba & Shannon Parkway, and connects to the transit hub in Downtown Visalia, allowing residents to utilize the transit system citywide. Route 16 of the Visalia City Coach travels along Dinuba Avenue, Riggins Avenue, and Demaree Avenue and is connected to Downtown Visalia. Route 7 has approximately 20-minute headways (60 minutes on Sundays) and operates from approximately 6:00 am to 9:40 pm on weekdays, 9:15 am to 6:40 pm on Saturdays, and 8:00 am to 3:45 pm on Sundays.

5.4 - Parking Requirements

The Pratt Family Ranch Specific Plan attempts to provide a balance between the parking needs and requirements of the different land uses within the Plan Area. For any use not specified in this section, the Planning Director or his/her designee shall have the authority to determine the appropriate parking requirements based upon similarities between parking generation characteristics of the proposed use with other similar uses identified in the Plan Area.

The parking requirements detailed below will be consistent with the City of Visalia's Municipal Code Chapter 17.34. The areas designated as Low-Density Residential shall have two parking spaces per dwelling unit minimum, and 50 percent of parking shall be covered. The areas designated as Medium-Density Residential shall have at least 1.5 parking spaces per dwelling unit for all multi-family developments. Signage will be posted within the gated communities to show where and when street parking is allowed and will be updated as necessary. Parking shall be enforced in the Medium-Density area by the HOA rules. Communal parking should be provided in the Medium-Density Residential area to add an additional .25 parking spaces per dwelling unit. Residents are encouraged to use their driveways for parking and use street parking on an as-needed basis.

5.5 - Pedestrian Circulation

Pedestrian access into and out of the Plan Area is integral in fostering neighborhood connectivity with the surrounding area. Figure 5-1 illustrates the pedestrian circulation within the Plan Area. Pathways have been provided to provide safe and efficient movement for pedestrians. Pedestrian pathways will be delineated with stamped asphalt at key intersections, greater-width sidewalks, and landscaping, including shade trees. The pedestrian path/trail proposed traverses through the Plan Area in a primarily north/south alignment (Figure 5-1). This configuration allows for a safe path of pedestrian travel from the Plan Area south on Mooney Boulevard in order to access the City of Visalia's public transit system. In addition, a future Class II Bike Path is planned to travel along Mooney Boulevard and continue through Pratt Road (Figure 5-1). It is anticipated that the pedestrian path/trail and bike route will be integral to the health and wellness of the community.

5.5.1 - Circulation Policies and Standards

- All roadway and pathway development standards and dimensions within the Specific Plan shall be approved by the City.
- Right-of-way designs illustrated in Figures 5-2 and 5-3 shall be utilized throughout the Plan Area when applicable.
- All streets within the Plan Area should be lined with the species of street tree specified in the landscape palette (reference Section 4.7).
- Traffic calming features may be utilized for traffic calming within the Plan Area.
- Safe and efficient movement of pedestrians within the Plan Area is paramount and shall be accomplished with pedestrian pathways, stamped asphalt, and landscaping.
- The design of gated entryways shall be consistent with the development standards of the City's Municipal Code.
- Dedicated turn lanes shall be incorporated into the Mooney Boulevard design at gated entryways.
- On-street parking will be allowed except for on designated trash pick-up days. No parking signs will be posted throughout the gated community. Offenders will be fined by the HOA and have a loss of service if in violation of this policy.

Section 6 - Infrastructure

The Pratt Family Ranch Specific Plan will have a public facilities system that will complement and enhance the vision and design objectives of the project. All facilities will be developed to the required industry standards of the service provider and as required by the applicable City standards. The facilities will be developed to meet project objectives and to meet the quality demands of the target market. Each developer that wishes to develop within the Plan Area will coordinate to the fullest with the appropriate jurisdictions and service providers to create a project that meets the standards required for Pratt Family Ranch. The project developer intends to continue this process as the project moves forward to ensure that state-of-the-art systems are included as appropriate and feasible.

Public utilities and services in the Plan Area will be provided by the following public and private companies, as detailed in Table 6-1 below.

Table 6-1
Plan Area Utility Provider

Utility/Service	Provider
Electricity	SCE
Gas	Southern California Gas
Water	California Water Service
Sewer	City of Visalia
Solid Waste	City of Visalia
Telephone	AT&T
Cable	Comcast
Police and Fire	City of Visalia
Public Schools	Visalia Unified School District

All infrastructure (streets, parking lots, wet and dry utilities) will be installed per construction plans approved by the City and relevant utility companies. Each pad constructed as part of overall development shall be graded so that sediments will not wash onto the site, nor will they contribute to the storm drain line. Responsibility for on and offsite infrastructure for this Plan will be retained by the project proponent(s). Reference Section 7.4 for phasing.

6.1 - Street Improvements

Development of each portion of the Plan Area will trigger street improvements to the extent to which the proposed development encompasses. For instance, if the Tier 2 area were to be developed, it would require the construction of full offsite improvements to Pratt Road and a portion of Mooney Boulevard. As Mooney Boulevard travels north along the east side of the Plan Area, it curves towards the eastern property line, and therefore up until a certain point along the curve of

Mooney Boulevard past the multi-family residential entrance, the development will not be required to be fully constructed. As it develops, Avenue 320 will be constructed in the northern portion of the Plan Area with two lanes.

Developments of rights of way will not require dedication for property owners outside of the designated Plan Area. The construction of ROW will be consistent with the street cross-sections illustrated in Section 5.

6.2 - Water

California Water Service Company (Cal Water), the third-largest publicly traded water utility in the United States, will be the potable water purveyor for the project. Cal Water also provides potable water to the majority of Visalia. A portion of the Pratt Family Ranch Plan Area, located south of Pratt Road, is already served by Cal Water. Thus, the remaining Plan Area outside of the city limits will need to be annexed in order to obtain service by Cal Water.

The Plan Area will continue the existing infrastructure that is currently existing in the surrounding right of way located at the Riverway Drive and Mooney Boulevard intersection. The current 12-inch lateral will need to be extended along the Mooney Boulevard alignment and west on Pratt Road to connect to the existing 12-inch lateral. All water laterals within each subdivision shall be six or eight inches. Furthermore, California Water Service will review each development proposal, and the service provider will provide specific requirements for each project. The provider's comments will supersede the requirements of the Specific Plan if they are not consistent. Water distribution infrastructure will be designed at the time of subdivision approval.

6.3 - Sanitary Sewer

The City of Visalia will provide the sanitary sewer disposal system for the projects within the Plan Area. Project wastewater will be collected and treated to disinfected secondary standards at the City of Visalia Wastewater Treatment Plant. Thwe Plan Area will be served by an existing 15-inch sewer lateral located at the intersection of Riverway Drive and Mooney Boulevard. The sewer laterals will be extended north up Mooney Boulevard and shift west along Pratt Road until it reaches the Plan Area's western extent. Since the Plan Area consists of only residential uses, sewer lateral upsizing will not be necessary. City standard 8-inch sewer lines will be required in all local streets. The City of Visalia will review each development proposal, and subsequent requirements will be conditioned for the development.

6.4 - Storm Drain

Storm drainage service is provided by the City of Visalia. There is an existing 18-inch storm drain trunk line at the Riverway Drive and Mooney Boulevard intersection. The existing trunk line will be extended into the Plan Area in order to adequately serve each development. Since only residential uses are being proposed, storm drain lateral upsizing for other uses will not be necessary. Each development proposal will be reviewed by the City of Visalia, and subsequent requirements will be conditioned for the development.

6.5 - Gas/Electric/Telephone

Telephone, electric, and natural gas services can be accessed from the existing infrastructure along Mooney Boulevard. Undergrounding of these utilities will occur with each development in the Plan Area.

Section 7 - Administration and Implementation

7.1 - Specific Plan Administration

This Specific Plan represents a framework of development for the Pratt Family Specific Plan Project. Implementation of the project requires the approval of this Specific Plan and any subsequent submittals over the life of the project's buildout. This section sets forth the procedures needed to implement and administer the Specific Plan and those procedures required for its amendment, if necessary.

7.2 - Implementation

The Pratt Family Ranch Specific Plan will be implemented through the processing of this Specific Plan, one or more Tentative Subdivision Maps, one or more Annexations, and development standards contained herein or as required through the City of Visalia development entitlement process. Subsequent submittals may be required of the applicant(s) to submit any of the above information or supplemental information prior to the recordation of any final map or building permit.

7.2.1 - Substantial Conformance with the Specific Plan

It is recognized that as more detailed plans are prepared to implement the Specific Plan, adjustments to provisions of the Specific Plan may be required. Amendments may be issued by or on behalf of the property owner(s), or any proposal by the City, shall be filed with the Community Development Director, who will determine if the proposed modifications are "minor" or "major" and the request or proposal shall be processed accordingly.

7.3 - Amendments to the Adopted Specific Plan

Proposed amendments to the Specific Plan shall be processed in accordance with the provisions outlined in the City of Visalia's Municipal Code, General Plan, and California State law.

7.3.1 - Procedure

The property's development shall comply with the development standards approved in this Specific Plan and the adopted City of Visalia's Municipal Code. Amendments to this adopted Specific Plan by or on behalf of the property owner(s), or any proposal by the City, shall be filed with the Community Development Director, who will determine if the proposed modification is "minor" or "major" and the request or proposal shall be processed accordingly.

Minor Amendments

The following modifications to the Specific Plan constitute a minor amendment and are subject to ministerial review and approval by the Community Development Director or his/her designee; however, the City of Visalia shall have the discretion to determine whether the modifications are in substantial conformance with the Specific Plan[3].

- Minor deviations from conceptual plans, architectural styling of buildings, exhibits or

[3] Administrative approvals of minor adjustments need not follow amendment procedures outlined in Chapter 12.04 (Adoption of Specific Plans) of the City of Visalia Municipal Code. The administrative approval procedure for minor amendments shall only require consideration by the Planning Director in accordance with the requirements outlined in Section 6.5 of this Specific Plan.

drawings, including landscaping, wall design, wall alignment, and streetscape design modifications contained within the Specific Plan which maintain the established quality level and intent of the Plan.

- Final facility sizing and alignment of infrastructure improvements when directed by the City of Visalia.
- Deletion of unnecessary infrastructure improvements when approved by the City of Visalia.
- Any other modifications deemed minor by the City of Visalia.
- Specific Plan land use designations, as shown in Figure 3-2, Land Use Plan are not to be amended.
- All applicable provisions of State law are complied with. All proposed adjustments or modifications to the Specific Plan that are determined to not be in substantial conformance with the Specific Plan by the Planning Director shall be processed as amendments to the Specific Plan.

Major Amendments

A Major Specific Plan Amendment will constitute any change to the Specific Plan, which is not a minor amendment. The applicant shall submit an entitlement, and the Planning Commission shall hold a public hearing for a major amendment and submit their findings and recommendation to City Council. The City Council will be responsible for rejecting or adopting by resolution to the Specific Plan Amendment by a majority vote.

- Increase in the number of vehicle access points.
- Cumulative increase in development intensity greater than 10 percent.

If any future re-use is found inconsistent with this Specific Plan or the General Plan, then a Major Specific Plan Amendment would be required.

7.4 - Phasing

The Plan Area is divided into phases to ensure consistency with the City of Visalia's General Plan Urban Boundaries and Growth Management requirements for the development of Tier 2 and Tier 3, as depicted in Figure 4-1. Currently, the entire City of Visalia is encompassed within Urban Development Boundary Tier 2. Urban Growth Boundary Tier 3 will begin development once the City of Visalia has issued 12,800 building permits for housing units from April 1, 2010. All development that will occur will only take place within the scope of the Plan Area. No development is proposed outside of the Plan Area. Additionally, infrastructure will be constructed to the extent to which the proposed development will be adequately served or as recommended by the City of Visalia. There are two main phases proposed for the development of the Plan Area. Phase 1 is the development of all of the area within Tier 2, and Phase 2 will be all of the Tier 3 area. Sub-phasing will be allowed for each development that occurs and will be reviewed on a project-by-project basis; in accordance with City standards and the Subdivision Map Act.

The buildout schedule for the Specific Plan Area will occur during three takedown phases.

- Takedown 1 will include the full development of the Plan Area within Tier 2. Phase 1 of the first takedown will include the perimeter landscaping, sidewalk, and roadways of Pratt Road, landscaping, sidewalk, and roadways of a portion of Mooney Boulevard (shown on Figure 4-1), the construction of the Riverway Drive, and the Mooney Boulevard traffic circle.

Once Phase 1 has been completed, the other phased developments (Phases 2–4) within Takedown 1 will be built out as the market demands. Phases 2–4 may not develop in numerical order.

- Takedowns 2 and 3 will include the buildout of the Tier 3 portion of the Plan Area and include the construction of Avenue 320's perimeter landscaping, sidewalk, and roadways, and the completion of Mooney Boulevard's perimeter landscaping, sidewalk, and roadways north of the multi-family residential entrance in Phase 1, joining with Avenue 320.

However, a number of provisions, noted below, shall apply to each phase in order to ensure that all improvements necessary to adequately serve the phase are in place prior to construction or occupancy as appropriate:

- The backbone infrastructure within an individual phase and all additional infrastructure necessary to bring services to that phase shall be constructed and operational to the satisfaction of the City prior to the final acceptance of site improvements within the respective phase or sub-phase.
- Prior to the delivery of combustible materials to a construction site, base roadways and community water systems shall be available at the boundary of the construction site.
- The City must approve a master grading, drainage, and utility plan in conjunction with the development of Tier 2 and Tier 3 residential sites.

7.5 - Maintenance

The City will establish a Landscape and Lighting (L&L) District to maintain public streetlights and local streets within the Plan Area. The Medium-Density Residential and gated community sites will establish a Homeowners Association (HOA) or equivalent. Refer to Table 7-1 for the maintenance responsibilities for the HOA or equivalent to establish for the Medium-Density Residential portion of the Plan Area.

Table 7-1

HOA or other maintenance District Responsibilities

Services	HOA (or equivalent)
Streets	X
Strom Drains	0
Water facilities	0
Sewer Facilities	0
Landscaping	X
Small Parks	X
Parking	X
Lights	X
CC&Rs	X

Notes: X = HOA will provide maintenance 0 = City will provide maintenance
The services outlined above will not be solely provided by the HOA. Within the Medium-Density Residential area, the HOA will provide maintenance service and collect dues.

7.6 - Financing

As development occurs within the Plan Area, each proponent of development shall be responsible for the financing or coordinating the financing of all onsite and offsite improvements within the extent of the Plan Area. Each phase's infrastructure will be added to and complement the infrastructure developed before it. The buildout of the project is anticipated to take five or more years, spanning two growth tiers. Once constructed, the infrastructure improvements will consist of elements for use by the general public and elements for the exclusive use of the area's residents. After construction, long-term maintenance of the improvements will be required, and the party bearing the obligation to maintain those improvements will vary depending on whether the improvement is for the general public or exclusively for the residents of the Plan Area. Although various techniques are available for financing the required infrastructure, the developer anticipates using private financing in conjunction with public financing for the development costs. Since, as previously discussed, certain elements of the infrastructure will be for the use of the general public; public financing may be appropriate for these elements. The selected financing mechanisms must be in place as required by the financing vehicle.

Other financing mechanisms may be utilized, such as creating private districts (Mello-Roos Community Facilities Districts), Landscaping and Lighting Districts, or homeowner's associations to fund maintenance of certain facilities within the Plan Area. Specific financing requirements, improvement obligations, fees, reimbursements, land and easement dedications and conveyances, maintenance, and other financing and improvement-related obligations will be detailed in development agreements outside of the scope of the Specific Plan.

7.6.1 - The City of Visalia's Development Impact Fees

A development impact fee is a monetary exaction than a tax or special assessment, which is charged by a local governmental agency to an applicant in connection with the approval of a development project. The purposes of the fees are to offset some or all of the associated costs to public facilities related to the development of the project. The listed fees below are not an exhaustive list. A comprehensive list of development impact fees will be submitted for each development within the Plan Area.

Drainage Fees

The development of land for urban uses substantially accelerates the concentration of surface and storm waters so that it is necessary to provide for the construction of and establishment and collection of drainage fees to defray all or a part of the actual or the estimated cost of constructing planned drainage facilities for the removal of surface and storm waters from drainage areas to promote and protect the public health, safety, and general welfare.

The drainage fee shall be paid on each parcel of land in the drainage area prior to the commencement of the work of any development thereon or, in the case of any division of a parcel of land, prior to the approval of the final subdivision or parcel map, or development, and shall be composed of an acquisition fee and a development fee to be paid unless otherwise specified in the City's Municipal Code.

Transportation Impact Fees

The City must expand its street system to maintain acceptable levels of service if new development is to be accommodated without reducing these levels of service to unacceptable levels as established in the Circulation

Element of the City's General Plan. This must be done in order to promote and protect public health, safety, and welfare. Fees calculated shall be consistent with the reasonable methodology of the Traffic Impact Fee Update Nexus Study City of Visalia or any updated version thereof.

The payment of the transportation impact fee required shall be issued to the city engineer or his designee prior to the issuance of a building permit.

Public Safety Impact Fees

The funds collected from public safety impact fees are for the public facilities to support orderly development. Furthermore, the funds assist in regulating the use and development of land to assure that new development bears a proportionate share of the cost of capital expenditures necessary to provide for public facilities that serve such development.

General Facilities Impact Fees

The funds collected via the general facilities impact fee programs are used to assist in the implementation of the policies of the General Plan by providing for adequate general government public facilities (excluding public safety facilities for which a separate fee has been imposed and to support orderly development.

7.6.2 - Landscape and Lighting Maintenance District (LLMD)

Pursuant to the Act and Proposition 218, all parcels that receive a special benefit conferred upon them as a result of the maintenance and operation of improvements and services shall be identified, and the proportionate special benefit derived by each identified parcel shall be determined in relationship to the entire costs of the maintenance and operation of improvements. The Act permits the establishment of assessment districts by agencies to provide certain public improvements, including the operation, maintenance, and servicing of landscaping improvements.

The method for apportioning the assessment is based upon the relative special benefit derived by the properties in each Maintenance District over and above the general benefit conferred on real property located in each Maintenance District or to the public at large. Assessed parcels within each Maintenance District receive special benefits from the maintenance and operation of the improvements.

7.6.3 - Homeowners Associations

A Homeowners Association will be used for the maintenance of certain improvements inside gated neighborhoods.

7.7 - Relationship of Specific Plan to Environmental Document

In order to be compliant with the California Environmental Quality Act (CEQA) (Public Resources Code 21000-21189) and the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387), an Initial Study/Mitigated Negative Declaration (IS/MND) is being prepared along in conjunction with the Specific Plan. Previous environmental documents covering the Plan Area also include the prior Program Environmental Impact Report for the Visalia General Plan (2014). The Specific Plan is not expected to result in any potentially significant environmental impacts after mitigation. Any development proposed within the Specific Plan shall have an abbreviated CEQA analysis if it is considered consistent with the Specific Plan (State CEQA Guidelines Section 15182).

7.8 - Reimbursement

According to the City of Visalia's Circulation Element, Avenue 320 and Mooney Boulevard are included in the City's Planned Circulation System Improvements inventory. The intention for the inventory is to define improvements to include in a long-range capital improvement program. The portion of Mooney Boulevard located in the Plan Area is a planned arterial to be built up as a new two-lane arterial. Avenue 320 is also a planned arterial to be built out as a two-lane; 1/2 arterial. The respective right-of-way widths vary from 84 feet to 110 feet (more detail in Section 5). The rate of reimbursement for the development of ROW shall be determined upon the processing of the entitlements with the City.

The specific details regarding reimbursement are identified in the City's reimbursement policies of the Municipal Code.

- A property owner who dedicates land or otherwise contributes funds for the capital costs of the facilities identified herein may be eligible for a credit for such contribution against the impact fee otherwise due.
- The chief financial officer shall determine (1) the value of the developer contribution; (2) whether the contribution meets the capital improvement needs for which the particular impact fee has been imposed; and (3) whether the contribution will substitute or otherwise reduce the need for capital improvements anticipated to be provided with impact fee funds. In no event, however, shall the credit exceed the amount of the otherwise applicable impact fee.
- Any application for credit must be submitted on forms provided by the City before development project approval. The application shall contain a declaration under oath of those facts that qualify the property owner for the credit, accompanied by the relevant documentary evidence.

Fee credits for City reimbursable infrastructure will be handled as follows:

- Storm drain trunk lines - the cost of these lines will be credited against the City's storm drainage impact fees. If the cost exceeds the impact fees, then the difference will be reimbursed in cash to the developer at the Notice of Completion.
- Sanitary sewer trunk lines - the cost of these lines will be reimbursed in cash at the Notice of Completion.
- Arterial/collector streets - the cost of these streets will be credited against the City's transportation impact fees. If the cost exceeds the impact fees, then the difference will be reimbursed in cash to the developer at the Notice of Completion.

Right-of-way dedications made after January 1, 2000, are subject to reimbursement by the City in the form of a transportation impact fee credit. If a portion of a ROW dedication is intended for dedicated right turn/deceleration/merge lanes, then this portion is not subject to reimbursement. Transportation impact fee credit is assigned to the grantor of the ROW. If the developer is not the grantor and desires to utilize the credit for their project, then a notarized statement from the grantor assigning the credit to the developer will be required. Existing irrevocable offers of dedication that are accepted by the City Council will be assigned a transportation impact fee credit to the property owner in effect at the time of acceptance. Reimbursement is available to a developer from the City for storm drain trunk lines and sewer trunk lines identified in the City's

Storm Water Master Plan and Sewer System Master Plan. The developer will be reimbursed for 100 percent of the cost of storm drain trunk lines. The developer will be reimbursed for 100 percent of the cost of sewer trunk lines not needed by the developer. If the developer needs a sewer line and is required to enlarge the sewer line in accordance with the Sewer System Master Plan, then the developer will be reimbursed for the differential cost. The City will reimburse the developer for design and construction costs associated with the installation of these trunk lines.

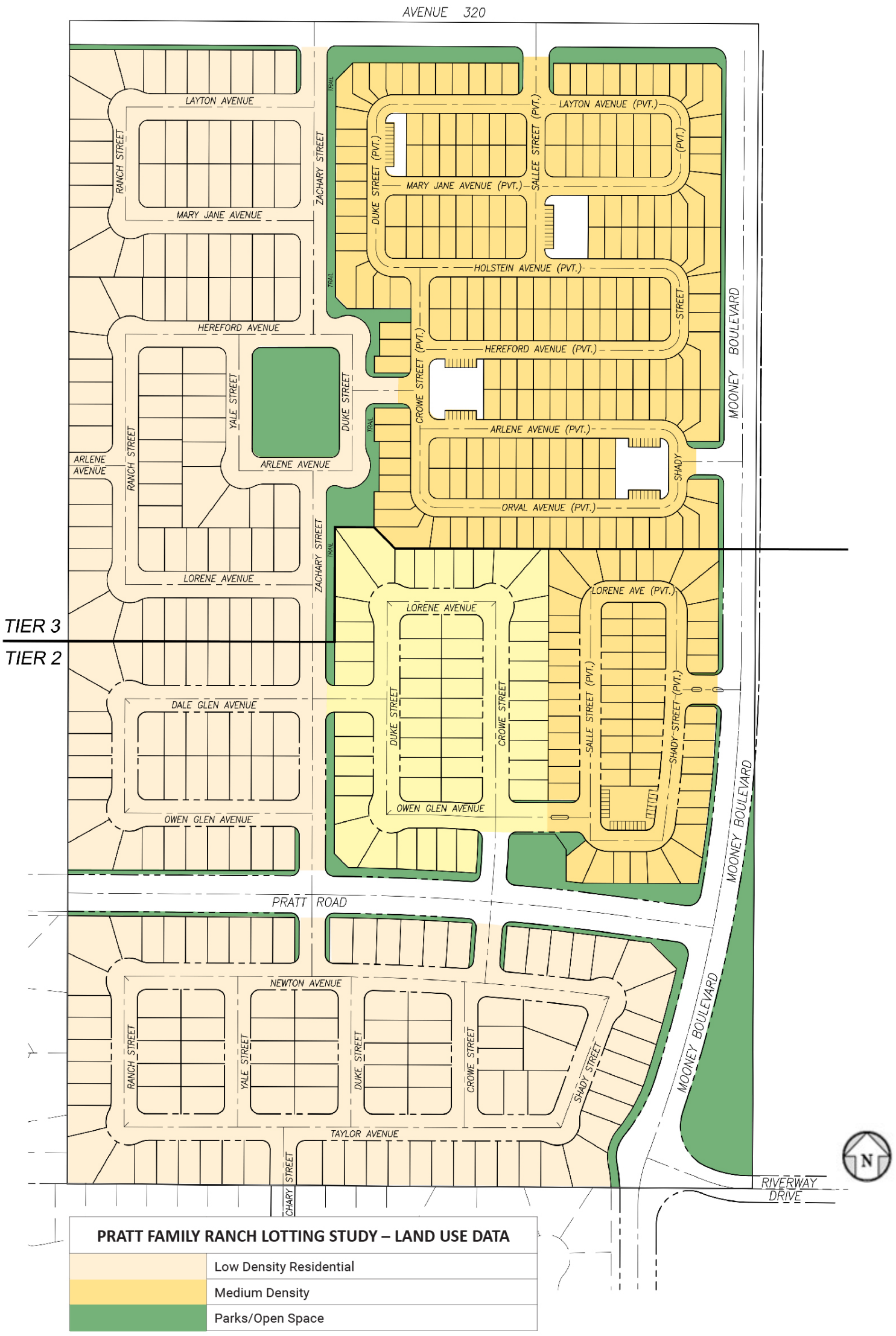
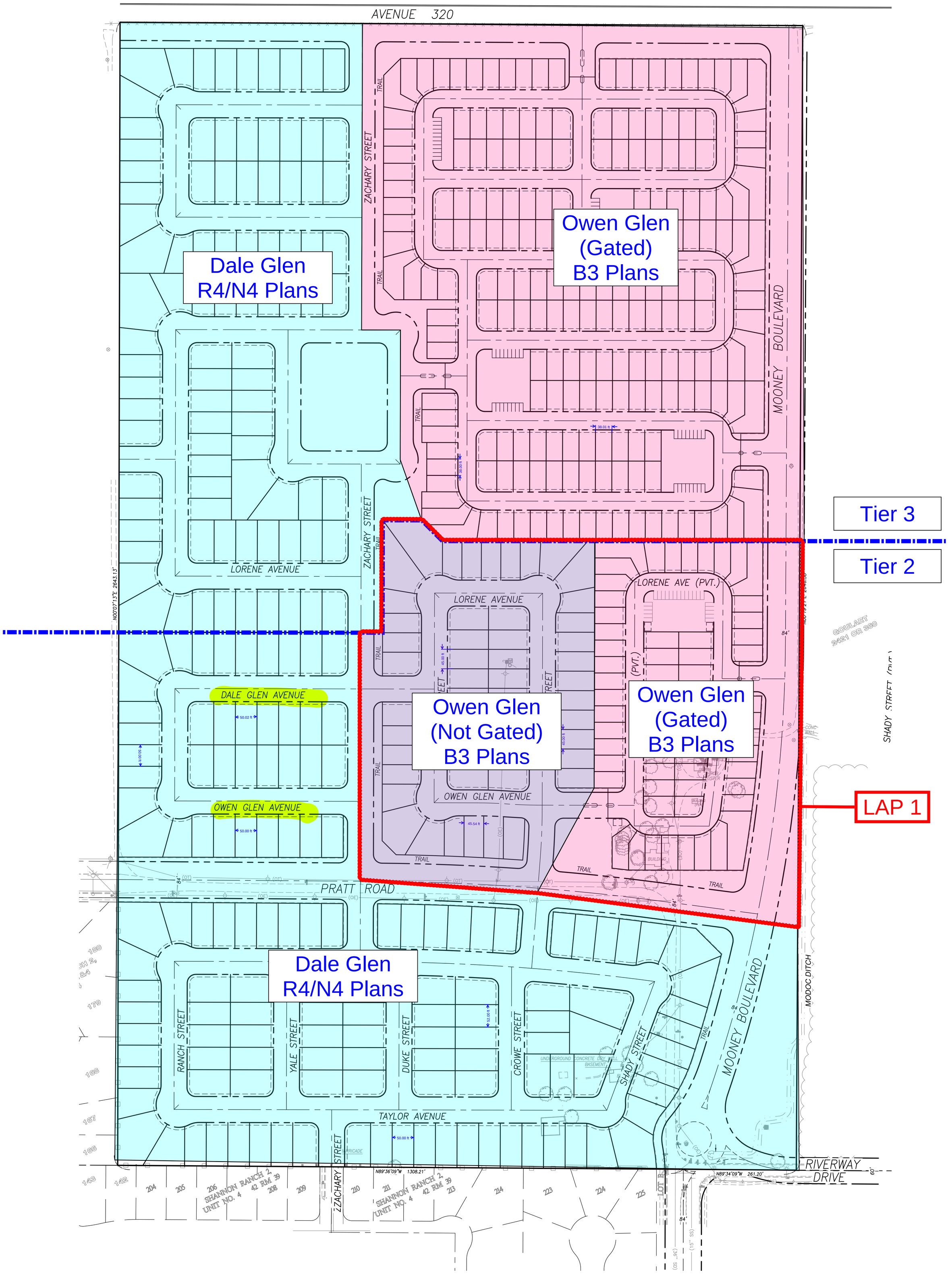


Figure 4-1

Plan Area Concept Plan



ACREAGE AND LAND USE (TIER 2)

	NO. OF UNITS	GROSS ACRES	GROSS DENSITY UNITS/ACRE	PROPOSED ZONE
50' x 100' LOTS AND PUBLIC STREETS:	132	25.15	5.25	R-1-5
45' x 90' LOTS AND PUBLIC STREETS:	52	8.12	6.40	R-1-5
38' x 72' LOTS AND PRIVATE STREETS:	63	6.08	10.36	R-M-2
HOA PARK (PRIVATE):	N/A	0.34	N/A	QP
DOG PARK - OUTLOT J:	N/A	1.61	N/A	QP
TRAIL/LANDSCAPE - OUTLOTS A-I:	N/A	2.10	N/A	VARIOUS
TOTALS:	247	43.40		

ACREAGE AND LAND USE (TIER 3)

	NO. OF UNITS	GROSS ACRES	GROSS DENSITY UNITS/ACRE	PROPOSED ZONE
50' x 100' LOTS AND PUBLIC STREETS:	90	17.97	5.01	R-1-5
38' x 72' LOTS AND PRIVATE STREETS:	207	19.91	10.40	R-M-2
HOA PARKS (PRIVATE):	N/A	1.29	N/A	QP
TRAIL/LANDSCAPE:	N/A	3.38	N/A	VARIOUS
TOTALS:	296	42.55		

N

100' 0' 100'

SCALE: 1"= 100'

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PROJECT NO.:	200180
DRAWN BY:	M. HUNTLEY
QA/QC BY:	??
SCALE:	AS SHOWN
SHEET NO.:	1 OF 1

PRATT FAMILY RANCH

TIER 2 & TIER 3

901 EAST MAIN STREET
VISALIA, CA 93292
TEL: (559) 733-0440
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Phase 3

Phase 2

Phase 1

Tier 3

Tier 2

AVENUE 320

Sub Phase 2
8.69 ac

Sub Phase 1
14.94 ac

ZACHARY STREET

TRAIL

Sub Phase 2
10.58 ac

Sub Phase 1
13.5 ac

38.01 ft

38.00 ft

MOONEY BOULEVARD

LORENE AVENUE

LORENE AVE (PVT.)

Sub Phase 4
7.87 ac

Sub Phase 2
9.59 ac

45.00 ft

DUKE STREET

CROWE STREET

SALLE STREET (PVT.)

45.54 ft

DALE GLEN AVENUE

Sub Phase 3
7.46 ac

50.00 ft

OWEN GLEN AVENUE

OWEN GLEN AVENUE

Sub Phase 1
24.73 ac

52.00 ft

NEWTON AVENUE

RANCH STREET

YALE STREET

SHADY STREET

UNDERGROUND CONCRETE DRY WELL BASEMENT

PRATT ROAD

84'

63.44 ft

TAYLOR AVENUE

50.00 ft

ZZACHARY STREET

BARRICADE

N89°36'09"W 1308.21'

N89°34'09"W 261.20'

RIVERWAY DRIVE

60'

LOT B

MODOC DITCH

SHADY STREET (PVT.)

GOULART
2421 OR 360

SHANNON RANCH 2
UNIT NO. 4
42 RM 39

204 205 206 208 209 210 211 213 214 223 224 225

143 142 180 179 168 167 166

N00°07'13"E 2643.13'

N00°19'21"E 2646.38'

ACREAGE AND LAND USE (TIER 2)

	NO. OF UNITS	GROSS ACRES	GROSS DENSITY UNITS/ACRE	PROPOSED ZONE
50' x 100' LOTS AND PUBLIC STREETS:	132	25.15	5.25	R-1-5
45' x 90' LOTS AND PUBLIC STREETS:	52	8.12	6.40	R-1-5
38' x 72' LOTS AND PRIVATE STREETS:	63	6.08	10.36	R-M-2
HOA PARK (PRIVATE):	N/A	0.34	N/A	QP
DOG PARK - OUTLOT J:	N/A	1.61	N/A	QP
TRAIL/LANDSCAPE - OUTLOTS A-I:	N/A	2.10	N/A	VARIOUS
TOTALS:	247	43.40		

ACREAGE AND LAND USE (TIER 3)

	NO. OF UNITS	GROSS ACRES	GROSS DENSITY UNITS/ACRE	PROPOSED ZONE
50' x 100' LOTS AND PUBLIC STREETS:	90	17.97	5.01	R-1-5
38' x 72' LOTS AND PRIVATE STREETS:	207	19.91	10.40	R-M-2
HOA PARKS (PRIVATE):	N/A	1.29	N/A	QP
TRAIL/LANDSCAPE:	N/A	3.38	N/A	VARIOUS
TOTALS:	296	42.55		

N

100' 0' 100'

SCALE: 1"= 100'

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PROJECT NO.: 200180
DRAWN BY: M. HUNTLEY
QA/QC BY: ??
SCALE: AS SHOWN
SHEET NO.: 1 OF 1

PRATT FAMILY RANCH

TIER 2 & TIER 3

901 EAST MAIN STREET
VISALIA, CA 93292
TEL: (559) 733-0440
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PRATT FAMILY RANCH TENTATIVE MAP

BEING A PORTION OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 13, TOWNSHIP 18 SOUTH, RANGE 24 EAST, AND PORTION OF THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 13, TOWNSHIP 18 SOUTH, RANGE 24 EAST, AND THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 18 SOUTH, RANGE 25 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF TULARE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF THE SURVEY OF SAID LAND ON FILE IN THE BUREAU OF LAND MANAGEMENT AT THE DATE OF THE ISSUANCE OF THE PATENT THEREOF.

IN THE CITY OF VISALIA, COUNTY OF TULARE, STATE OF CALIFORNIA.

PROJECT SITE INFORMATION

MAY 2023

APNs:
078-010-005, 078-010-025, 078-110-001

ADDRESS:
2100 PRATT ROAD
VISALIA, CA 93291

RECORD OWNERSHIP:
MICHAEL K. AND GLENDA M. GUNNING
1037 W. SUNNYSIDE AVENUE
VISALIA, CA 93277

SUBDIVIDER:
D.R. HORTON CA3, INC.
419 W. MURRAY AVENUE
VISALIA, CA 93291
(559) 636-9850

901 EAST MAIN STREET
VISALIA, CA 93292
TEL: (559) 733-0440
WWW.QKINC.COM

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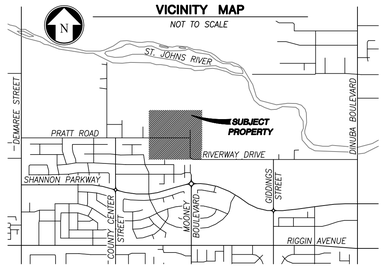
VICINITY MAP

NOT TO SCALE



UTILITIES

SOUTHERN CALIFORNIA EDISON:
MISAEL IBARRA
2425 S. BLACKSTONE STREET, TULARE, CA 93274
O: 559-684-3532
C: 559-801-1272
misael.ibarra@sce.com

SOUTHERN CALIFORNIA GAS COMPNAY:
JUAN MEJORADO
404 N. TIPTON STREET, VISALIA, CA 93292
559-739-2317
JMMejorado@socalgas.com

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ERIN PECTOL
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O: 559-739-6649
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COMCAST:
MICHAEL CORRAL
1031 N. PLAZA DRIVE, VISALIA, CA 93291
O: 559-735-2104
C: 559-217-9003
Michael_Corral@comcast.com

PHASING

THE APPLICANT RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT. PHASE LINES SHOWN HEREON ARE PLANNED, AND SUBJECT TO CHANGE.

TYPICAL STREET CROSS SECTIONS: SEE SHEET 2

ACREAGE AND LAND USE

	NO. OF UNITS	GROSS ACRES	GROSS DENSITY UNITS/ACRE	NET DENSITY EXCL. STREETS	PROPOSED ZONE
50' x 100' LOTS AND PUBLIC STREETS:	132	25.15	5.25	7.61	R-1-5
45' x 90' LOTS AND PUBLIC STREETS:	52	8.27	6.29	9.27	R-1-5
38' x 72' LOTS AND PRIVATE STREETS:	60	6.12	9.80	13.90	R-M-2
HOA PARK (PRIVATE):	N/A	0.29	N/A	N/A	QP
DOG PARK (PUBLIC) - OUTLOT K:	N/A	1.61	N/A	N/A	QP
TRAIL/LANDSCAPE - OUTLOTS A-J	N/A	1.86	N/A	N/A	VARIOUS
PRATT RD AND MOONEY BLVD ROW:	N/A	6.08	N/A	N/A	N/A
TOTALS:	244	49.43			

TOPOGRAPHIC SURVEY

TOPOGRAPHIC INFORMATION SHOWN ON THIS MAP WAS COLLECTED AND PROVIDED BY QK IN JANUARY 2018, JUNE 2020, AND AUGUST 2020.

FLOOD NOTE

THE SUBJECT SITE IS WITHIN FLOOD ZONES AE AND X AS SHOWN ON FEMA FIRM PANEL 06107C0930E, EFFECTIVE 6/16/2009.

ABBREVIATIONS

D.N.	DENOTES RECORD DOCUMENT NUMBER, TULARE COUNTY RECORDS
I.N.	DENOTES RECORD INSTRUMENT NUMBER, TULARE COUNTY RECORDS
O.R.T.C.	OFFICIAL RECORDS TULARE COUNTY
PUE	PUBLIC UTILITY EASEMENT
REC.	RECORDED
ROW	RIGHT OF WAY
T.C.R.	TULARE COUNTY RECORDS
XX TM YY	VOLUME XX MAPS, PAGE YY, TULARE COUNTY RECORDS
PUE	PUBLIC UTILITY EASEMENT
R	RADIUS

LEGEND

- CENTERLINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- SECTION LINE
- EXISTING RIGHT OF WAY
- EXISTING LOT LINES
- PUBLIC UTILITY EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING WOOD FENCE
- EXISTING EDGE OF PAVEMENT/ROAD
- EXISTING CURB AND GUTTER
- (220) EXISTING CONTOUR LINE
- (OE) EXISTING OVERHEAD ELECTRICAL
- EXISTING STREETLIGHT
- EXISTING GUY ANCHOR
- EXISTING POST
- EXISTING WATER VALVE
- EXISTING POWER POLE
- EXISTING STORM DRAIN MANHOLE
- EXISTING SEWER MANHOLE
- EXISTING CHRISTIE BOX
- EXISTING SIGN
- EXISTING VENT PIPE
- EXISTING STAND PIPE
- EXISTING RISER
- EXISTING WELL
- EXISTING TREE

L:\PROJECTS\2020\200180\ACAD\TENTATIVE MAP\200180-TMLONG 5/5/2023 11:17 AM

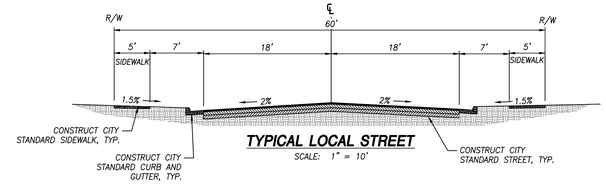
PRATT FAMILY RANCH TENTATIVE MAP

BEING A PORTION OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 13, TOWNSHIP 18 SOUTH, RANGE 24 EAST, AND PORTION OF THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 13, TOWNSHIP 18 SOUTH, RANGE 24 EAST, AND THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 18 SOUTH, RANGE 25 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF TULARE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF THE SURVEY OF SAID LAND ON FILE IN THE BUREAU OF LAND MANAGEMENT AT THE DATE OF THE ISSUANCE OF THE PATENT THEREOF.

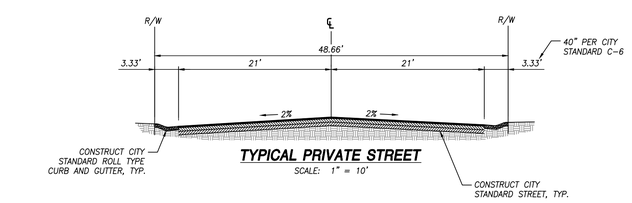
IN THE CITY OF VISALIA, COUNTY OF TULARE, STATE OF CALIFORNIA.

SEE SHEET 5

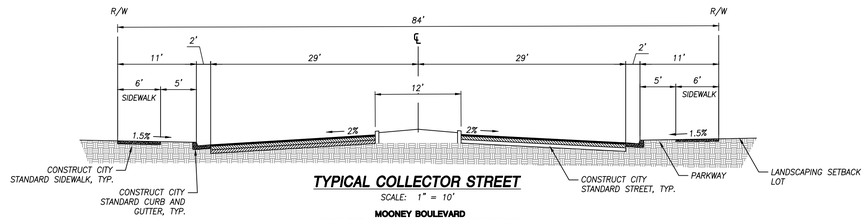
SEE SHEET 3



TYPICAL LOCAL STREET
SCALE: 1" = 10'

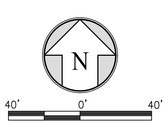


TYPICAL PRIVATE STREET
SCALE: 1" = 10'



TYPICAL COLLECTOR STREET
SCALE: 1" = 10'

MOONEY BOULEVARD
(SAME FOR PRATT ROAD, BUT WITHOUT MEDIAN)



SCALE: 1"= 40'

LEGEND

- CENTERLINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- SECTION LINE
- EXISTING RIGHT OF WAY
- EXISTING LOT LINES
- PUBLIC UTILITY EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING WOOD FENCE
- EXISTING EDGE OF PAVEMENT/ROAD
- EXISTING CURB AND GUTTER
- EXISTING CONTOUR LINE
- EXISTING OVERHEAD ELECTRICAL
- EXISTING STREETLIGHT
- EXISTING GUY ANCHOR
- EXISTING POST
- EXISTING WATER VALVE
- EXISTING POWER POLE
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ABBREVIATIONS

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O.R.T.C.	OFFICIAL RECORDS TULARE COUNTY
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REC.	RECORDED
ROW	RIGHT OF WAY
T.C.R.	TULARE COUNTY RECORDS
XX TM YY	VOLUME XX MAPS, PAGE YY, TULARE COUNTY RECORDS
PUE	PUBLIC UTILITY EASEMENT
R	RADIUS

L:\PROJECTS\2020\200180\ACAD\TENTATIVE MAP\200180-TM.DWG 5/5/2023 11:17 AM

PRATT FAMILY RANCH
TENTATIVE MAP

BEING A PORTION OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 13, TOWNSHIP 18 SOUTH, RANGE 24 EAST, AND PORTION OF THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 13, TOWNSHIP 18 SOUTH, RANGE 24 EAST, AND THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 18 SOUTH, RANGE 25 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF TULARE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF THE SURVEY OF SAID LAND ON FILE IN THE BUREAU OF LAND MANAGEMENT AT THE DATE OF THE ISSUANCE OF THE PATENT THEREOF.

IN THE CITY OF VISALIA, COUNTY OF TULARE, STATE OF CALIFORNIA.

SEE SHEET 4

SEE SHEET 2

N

40' 0' 40'

SCALE: 1"= 40'

LEGEND

- CENTERLINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- SECTION LINE
- EXISTING RIGHT OF WAY
- EXISTING LOT LINES
- PUBLIC UTILITY EASEMENT
- EXISTING CHAIN LINK FENCE
- EXISTING WOOD FENCE
- EXISTING EDGE OF PAVEMENT/ROAD
- EXISTING CURB AND GUTTER
- (200') EXISTING CONTOUR LINE
- (OE) EXISTING OVERHEAD ELECTRICAL
- EXISTING STREETLIGHT
- EXISTING GUY ANCHOR
- EXISTING POST
- EXISTING WATER VALVE
- EXISTING POWER POLE
- (D) EXISTING STORM DRAIN MANHOLE
- (S) EXISTING SEWER MANHOLE
- EXISTING CHRISTIE BOX
- EXISTING SIGN
- EXISTING VENT PIPE
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PUE	PUBLIC UTILITY EASEMENT
R	RADIUS

PRATT ROAD
SALLE STREET
NEWTON AVENUE
DUKE STREET
CROWE STREET
SHADY STREET
MOONEY BOULEVARD (ROAD 116)
MODOC DITCH
TAYLOR AVENUE
TRAIL
OUTLOT B 5,226± SF
OUTLOT C 18,403± SF
OUTLOT K 1.608± ACRES
DOG PARK
BLOCK WALL
UNDERGROUND CONCRETE DRY WELL
BASEMENT
BUILDING (TYP.)
50' ROW PER BOOK 10, PAGE 184 OF DEEDS, O.R.T.C.
25' ROW PER DOC. REC. 5/6/30 BOOK 378, PAGE 296, T.C.R.
42' ROW PER D.N. 2003-0011275
EASEMENT FOR ROW AND MAINTENANCE REC. 7/16/15 AS I.N. 20150040436, O.R.T.C.
SHANNON RANCH 2, UNIT NO. 4 42 RM 39
LOT B

PRATT FAMILY RANCH TENTATIVE MAP

BEING A PORTION OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 13, TOWNSHIP 18 SOUTH, RANGE 24 EAST, AND PORTION OF THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 13, TOWNSHIP 18 SOUTH, RANGE 24 EAST, AND THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 18, TOWNSHIP 18 SOUTH, RANGE 25 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF TULARE, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF THE SURVEY OF SAID LAND ON FILE IN THE BUREAU OF LAND MANAGEMENT AT THE DATE OF THE ISSUANCE OF THE PATENT THEREOF.

IN THE CITY OF VISALIA, COUNTY OF TULARE, STATE OF CALIFORNIA.

SEE SHEET 5

LORENE AVENUE

LORENE AVE (PVT.)

OWEN GLEN AVENUE

OWEN GLEN AVE (PVT.)

CROWE STREET

SALLE STREET (PVT.)

SHADY STREET (PVT.)

MOONEY BOULEVARD

OUTLOT G 701± SF

OUTLOT H 2,592± SF

OUTLOT I 30,690± SF

OUTLOT J 3,105± SF

HOA PARK 12,543± SF

BLOCK WALL

EXISTING 25' IRRIGATION/ACCESS EASEMENT

TRAIL

SEE SHEET 3

LEGEND

- CENTERLINE
- PROPERTY LINE
- RIGHT OF WAY LINE
- SECTION LINE
- EXISTING RIGHT OF WAY
- EXISTING LOT LINES
- PUBLIC UTILITY EASEMENT
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PUE	PUBLIC UTILITY EASEMENT
R	RADIUS

N

40' 0' 40'

SCALE: 1"= 40'

COULART 2021 ON 360

L:\PROJECTS\2020\200180\VCAD\TENTATIVE MAP\200180-TM.DWG 5/5/2023 11:17 AM

PRATT FAMILY RANCH TENTATIVE MAP

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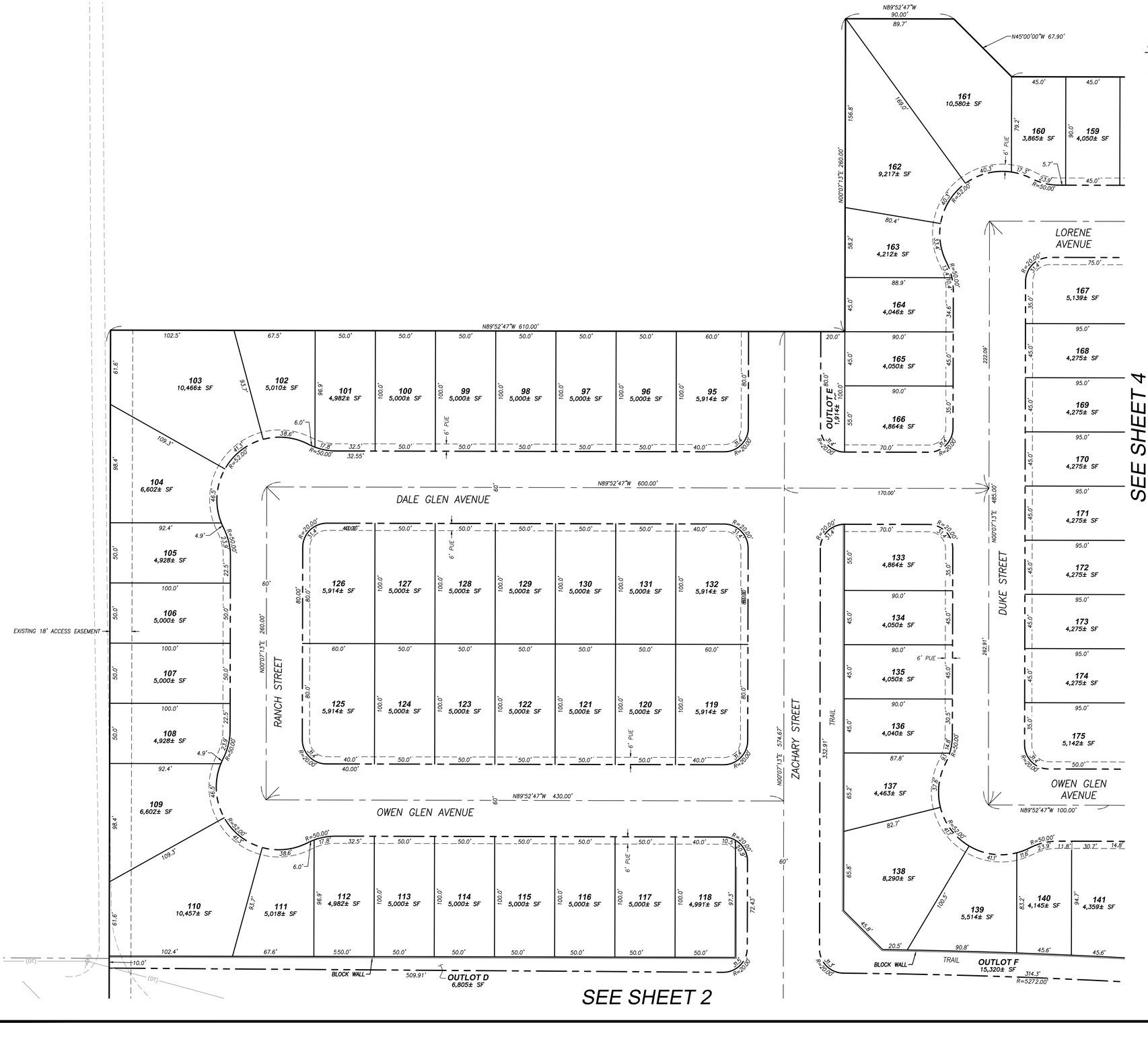

LEGEND

CENTERLINE	EXISTING STREETLIGHT
PROPERTY LINE	EXISTING GUY ANCHOR
RIGHT OF WAY LINE	EXISTING POST
SECTION LINE	EXISTING WATER VALVE
EXISTING RIGHT OF WAY	EXISTING POWER POLE
EXISTING LOT LINES	EXISTING STORM DRAIN MANHOLE
PUBLIC UTILITY EASEMENT	EXISTING SEWER MANHOLE
EXISTING CHAIN LINK FENCE	EXISTING CHRISTIE BOX
EXISTING WOOD FENCE	EXISTING SIGN
EXISTING EDGE OF PAVEMENT/ROAD	EXISTING VENT PIPE
EXISTING CURB AND GUTTER	EXISTING STAND PIPE
(220') EXISTING CONTOUR LINE	EXISTING RISER
(OE) EXISTING OVERHEAD ELECTRICAL	EXISTING WELL
	EXISTING TREE

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PUE	PUBLIC UTILITY EASEMENT
R	RADIUS

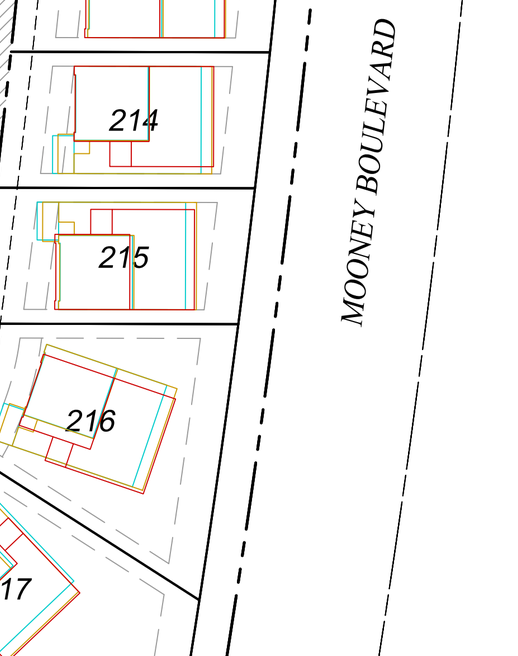
N

40' 0' 40'

SCALE: 1"= 40'

L:\PROJECTS\2020\200180\ACAD\TENTATIVE MAP\200180-TM.DWG 5/5/2023 11:18 AM

PLAN NO.	1378	1583	1775
	2-STORY	2-STORY	2-STORY
LOT NO.			
185	A	A	A
186	A	A	A
187	A	A	A
188	A	A	A
189	A	A	A
190	A	A	A
191	A	A	A
192	A	A	A
193	A	A	A
194	A	A	A
195	A	A	A
196	A	A	A
197	A	A	A
198	A	A	A
199	A	A	A
200	A	A	A
201	A	A	A
202	A	A	A
203	A	A	A
204	A	A	A
205	A	A	A
206	A	A	A
207	A	A	A
208	A	A	A
209	A	A	A
210	A	A	A
211	A	A	A
212	A	A	A
213	A	A	A
214	A	A	A
215	A	A	A
216	A	A	A
217	A	A	A
218	A	A	A
219	A	A	A
220	A	A	A
221	A	A	A
222	A	A	A
223	A	A	A
224	A	A	A
225	A	A	A
226	A	A	A
227	A	A	A
228	A	A	A
229	A	A	A
230	A	A	A
231	A	A	A
232	A	A	A
233	A	X	X
234	A	X	X
235	A	A	A
236	A	A	A
237	A	A	A
238	A	A	A
239	A	A	A
240	A	A	A
241	A	A	A
242	A	A	A
243	A	A	A
244	X	A	X



SETBACKS:

LIVING	12'
GARAGE	18'
SIDE	4'
STREET SIDE	4'
REAR	10'

LEGEND:

GATED (PVT.)

SETBACK

PUE

PROJECT NO.:	200180
DRAWN BY:	KK
QA/QC BY:	DM
SCALE:	AS SHOWN
SHEET NO.:	1 OF 1

PRELIMINARY GATED LOT FIT EXHIBIT

PRATT FAMILY RANCH

WWW.QKINC.COM
1-800-955-7599
BAKERSFIELD, CLOVIS, HANFORD, MERCED, PORTERVILLE, VISALIA

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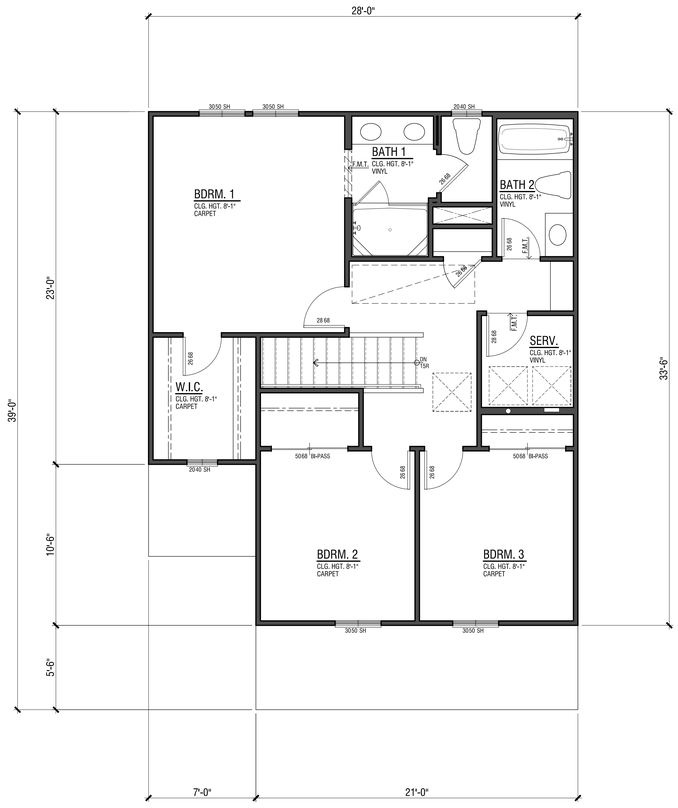
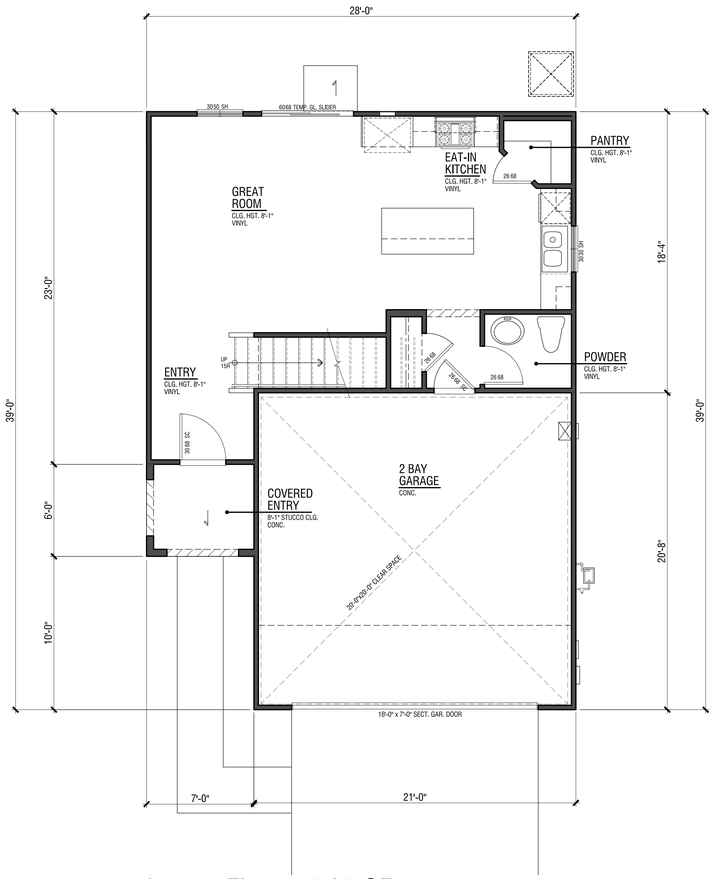


Upper Floor - 831 SF



Lower Floor - 547 SF

PLAN 1.1378

1,378 SF
3 Bdrm | 2.5 Bath
2 Bay Garage
8' | 8' Plates

1A | Americana

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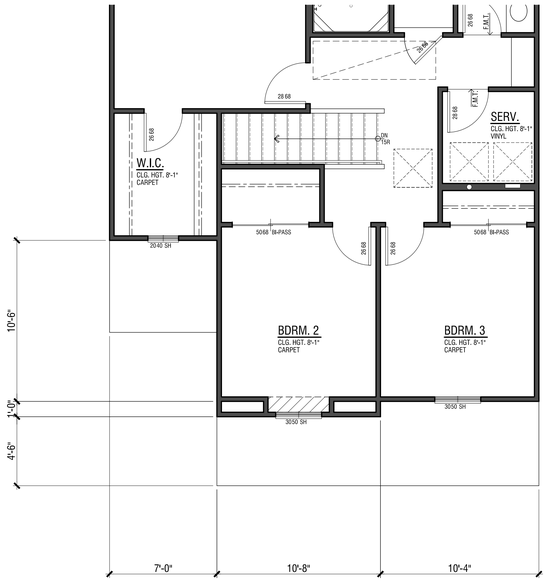

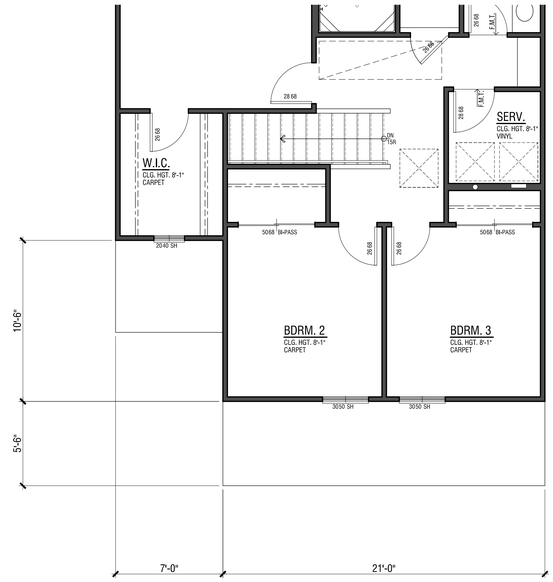

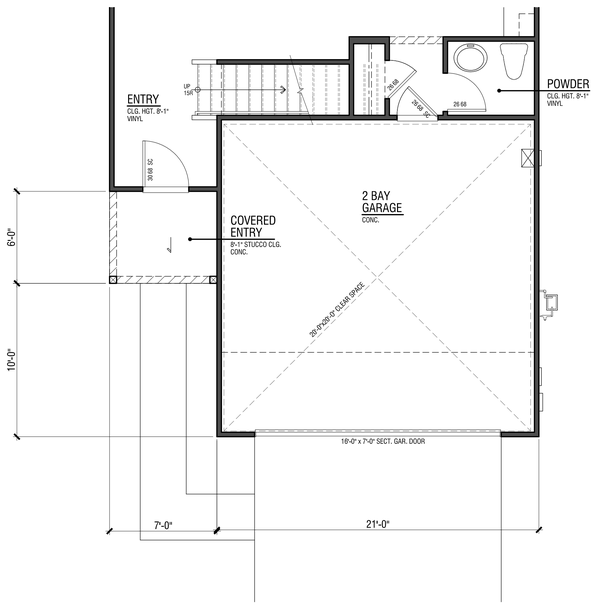

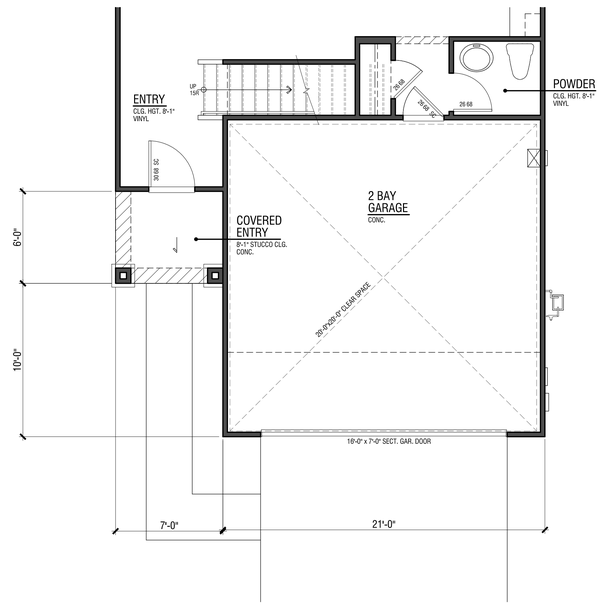

PLAN 1.1378

1,378 SF
3 Bdrm | 2.5 Bath
2 Bay Garage
8' | 8' Plates

1B | Farmhouse

1C | Craftsman

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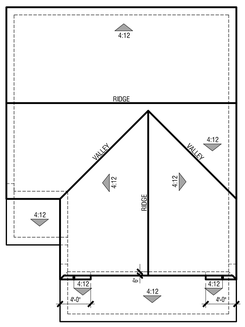
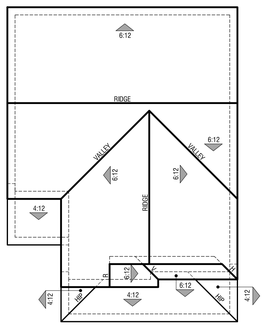


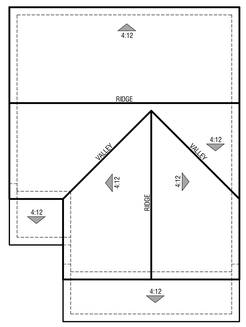
1A | Americana

Eave 12" / Rake 12"
Composition Roof



1B | Farmhouse

Eave 12" / Rake 12"
Composition Roof



1C | Craftsman

Eave 12" / Rake 12"
Composition Roof

PLAN 1.1378

Roof Plans

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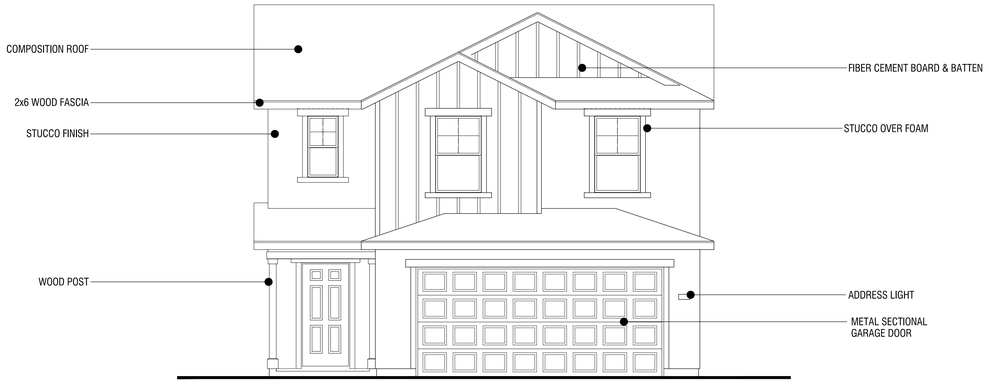
1A | Americana

1C | Craftsman



1B | Farmhouse

PLAN 1.1378

Front Elevations

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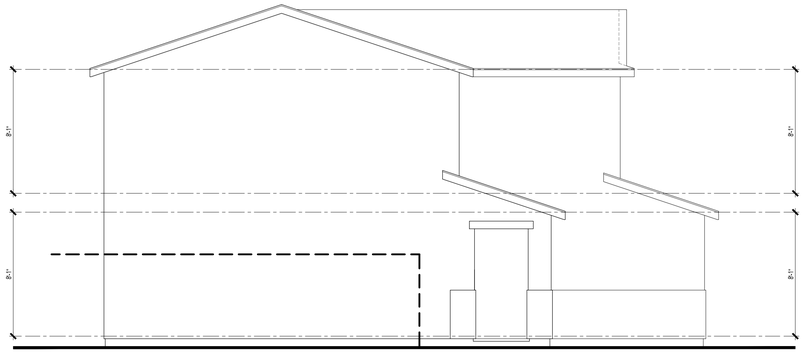

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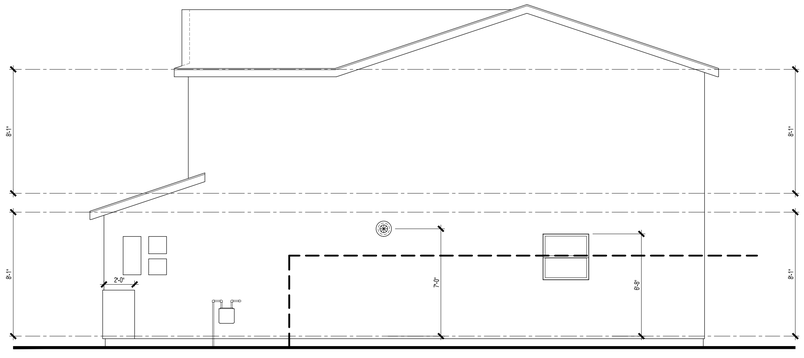
Front



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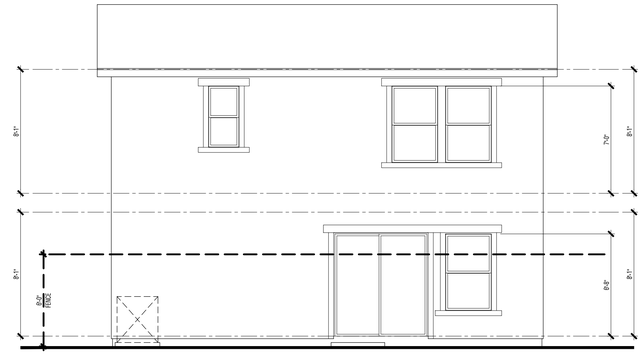

Rear

PLAN 1A | AMERICANA

Building Elevations

LIBRARY SERIES

CALIFORNIA

1.4

DESIGN DEVELOPMENT

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D·R·HORTON America's Builder NYSE: DHI

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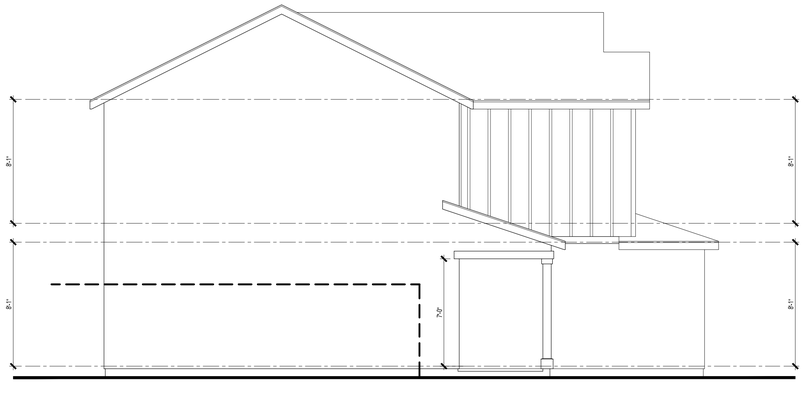
WHA
ORANGE COUNTY . LOS ANGELES . BAY AREA



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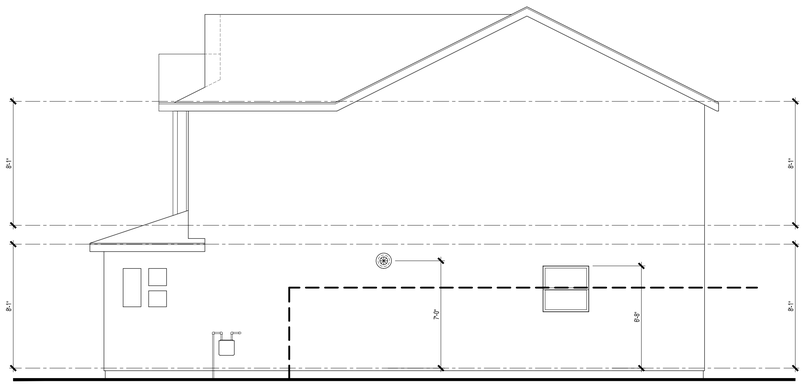
Front



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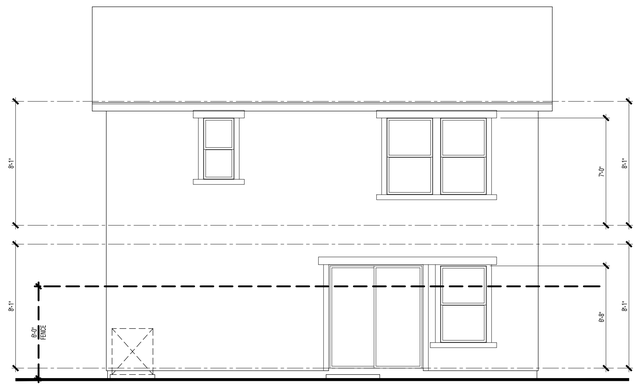

Rear

PLAN 1B | FARMHOUSE

Building Elevations

D·R·HORTON America's Builder NYSE

LIBRARY SERIES

CALIFORNIA

1.5

DESIGN DEVELOPMENT

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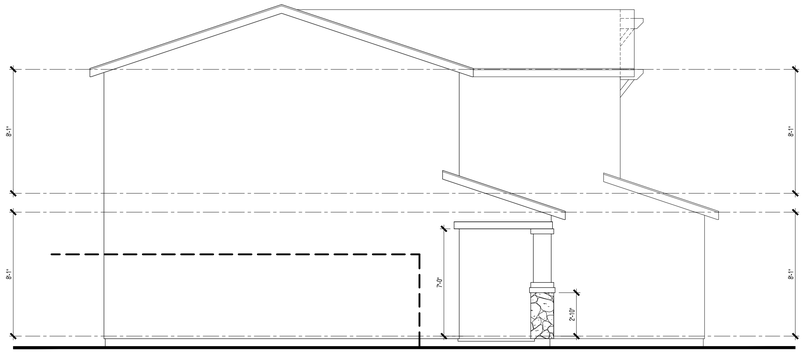

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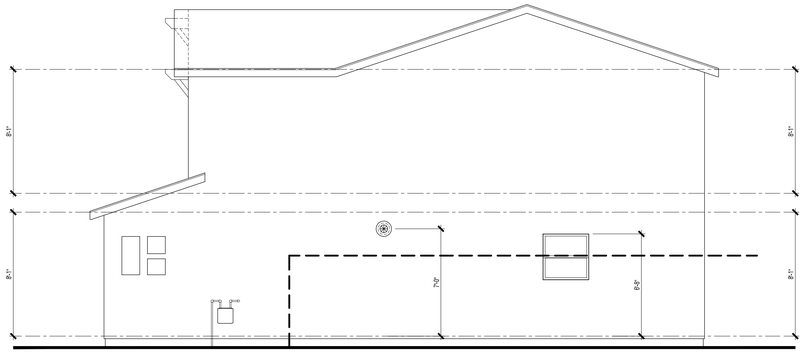
Front



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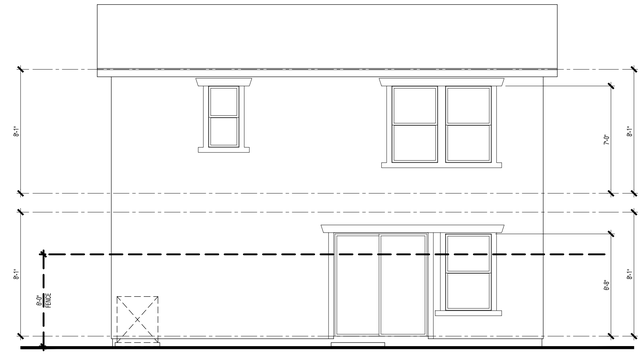

Rear

PLAN 1C | CRAFTSMAN

Building Elevations

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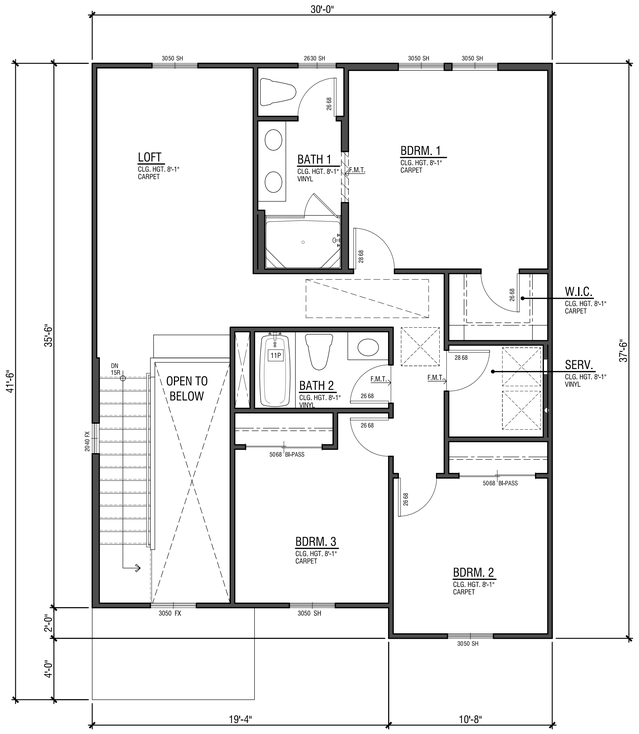
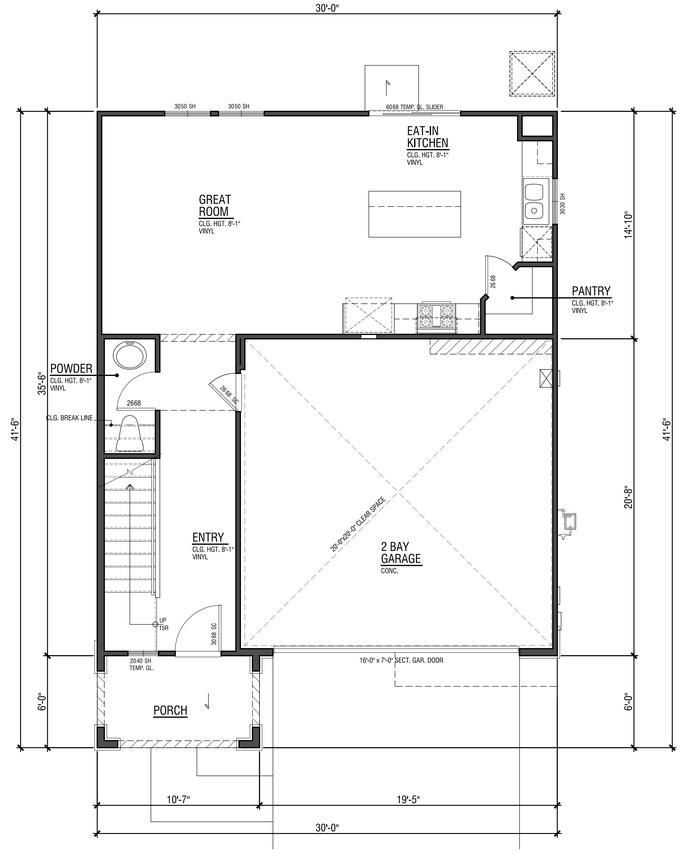


Upper Floor - 946 SF



Lower Floor - 637 SF

PLAN 2.1583

1,583 SF
3 Bdrm | 2.5 Bath | Loft
2 Bay Garage
8' | 8' Plates

2A | Americana

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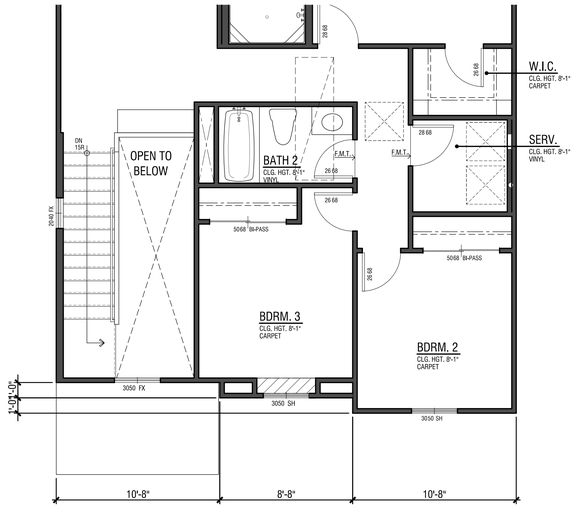

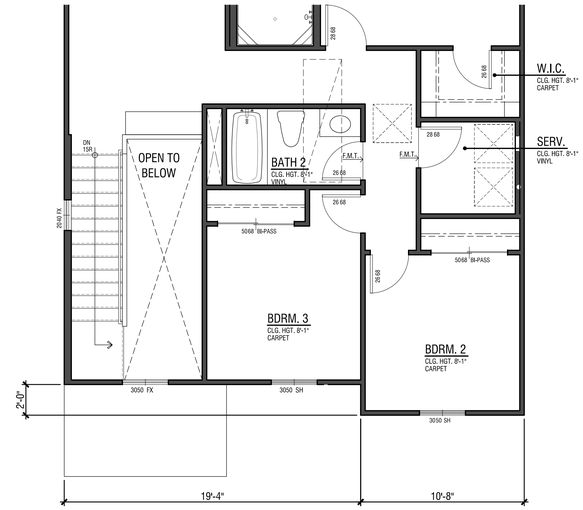

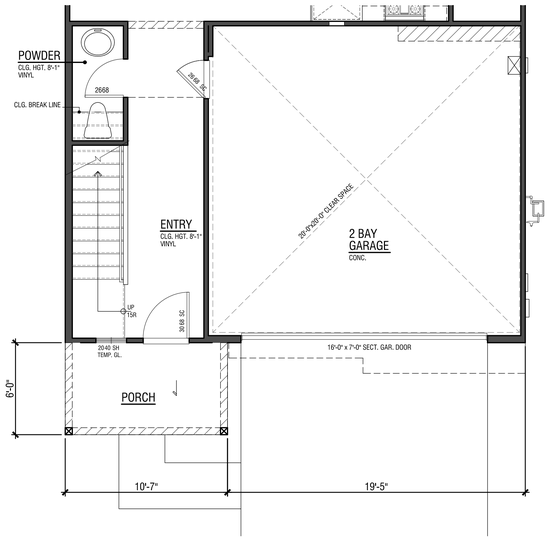

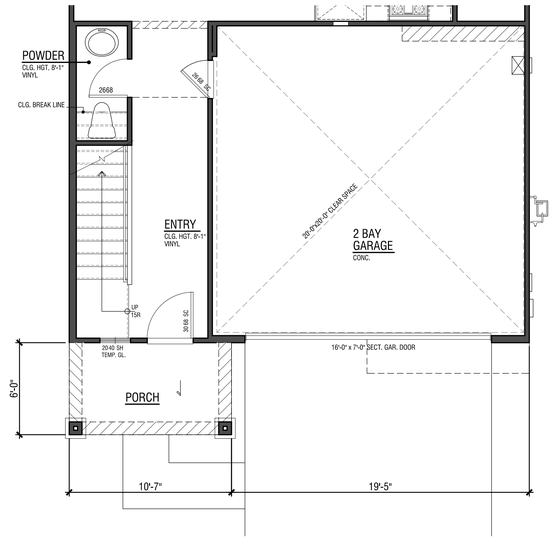

PLAN 2.1583

1,583 SF
3 Bdrm | 2.5 Bath | Loft
2 Bay Garage
8' | 8' Plates

2B | Farmhouse

2C | Craftsman

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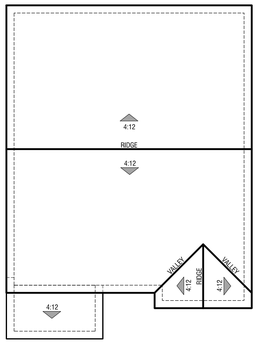
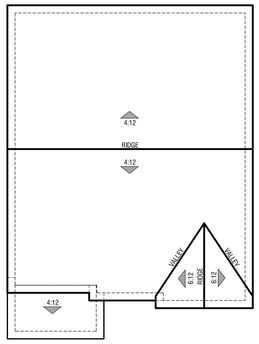


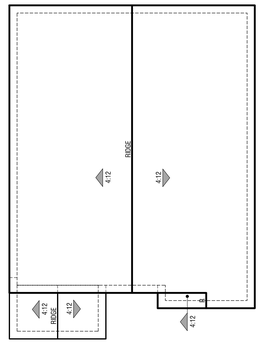
2A | Americana

Eave 12" / Rake 12"
Composition Roof



2B | Farmhouse

Eave 12" / Rake 12"
Composition Roof



2C | Craftsman

Eave 12" / Rake 12"
Composition Roof

PLAN 2.1583

Roof Plans

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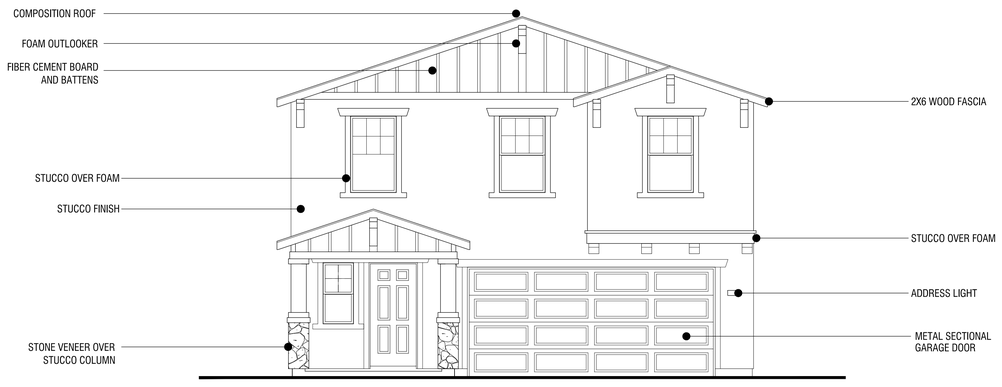
2A | Americana



2C | Craftsman

2B | Farmhouse

PLAN 2.1583

Front Elevations

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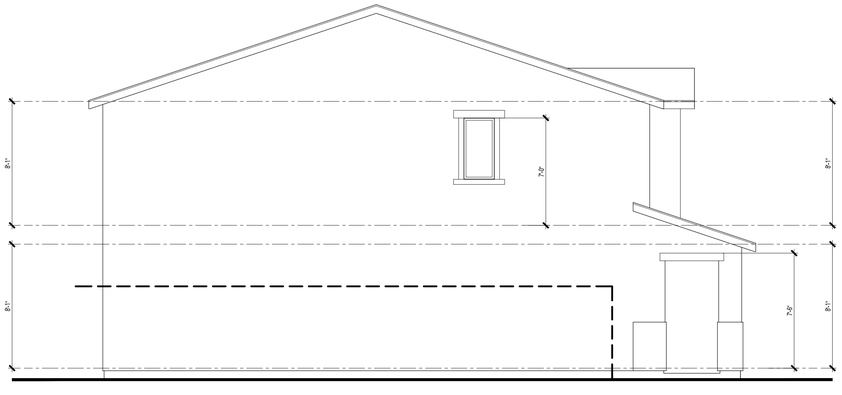
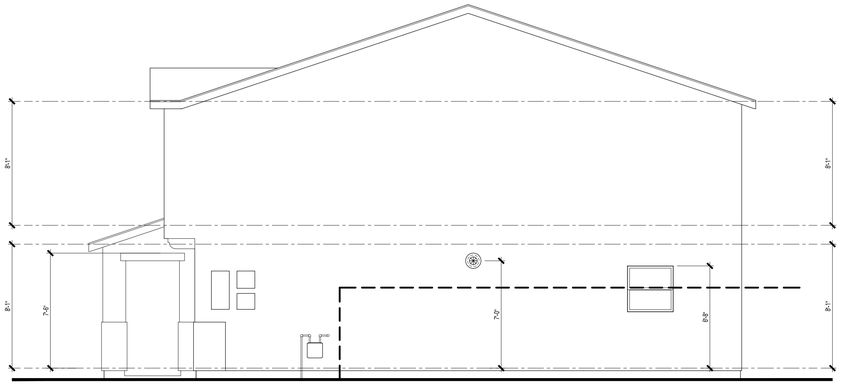


Left

Front



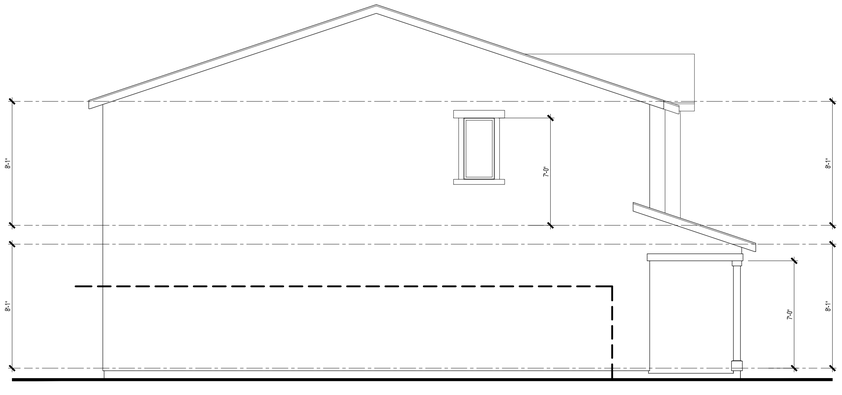
Right

Rear

PLAN 2A | AMERICANA

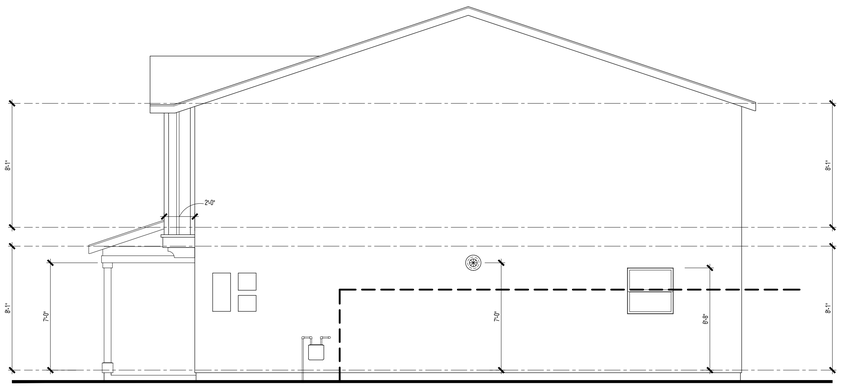
Building Elevations

© 2022 WILLIAM HEZMALHALCH ARCHITECTS, INC. dba WHA.



Left

Front



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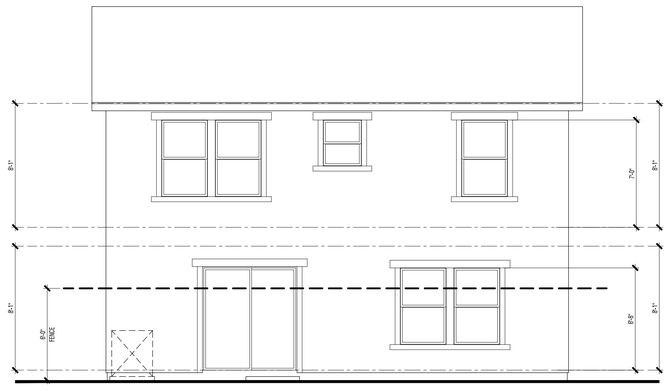

Rear

PLAN 2B | FARMHOUSE

Building Elevations

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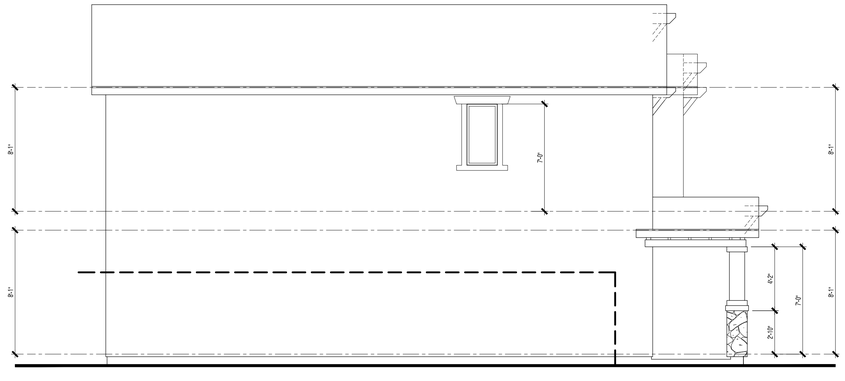

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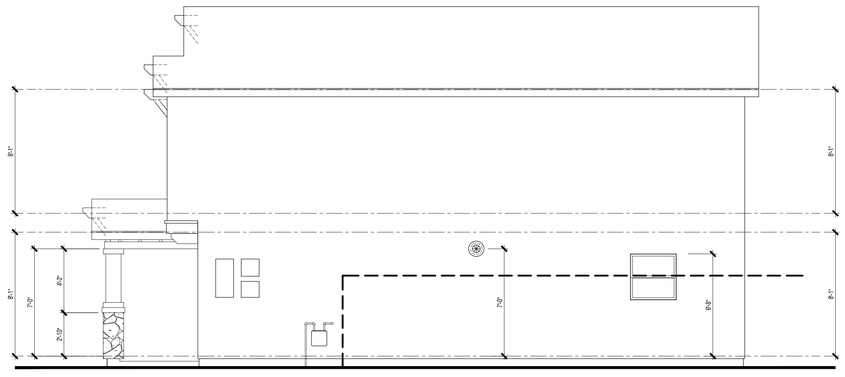
Front



Right

Rear

PLAN 2C | CRAFTSMAN

Building Elevations

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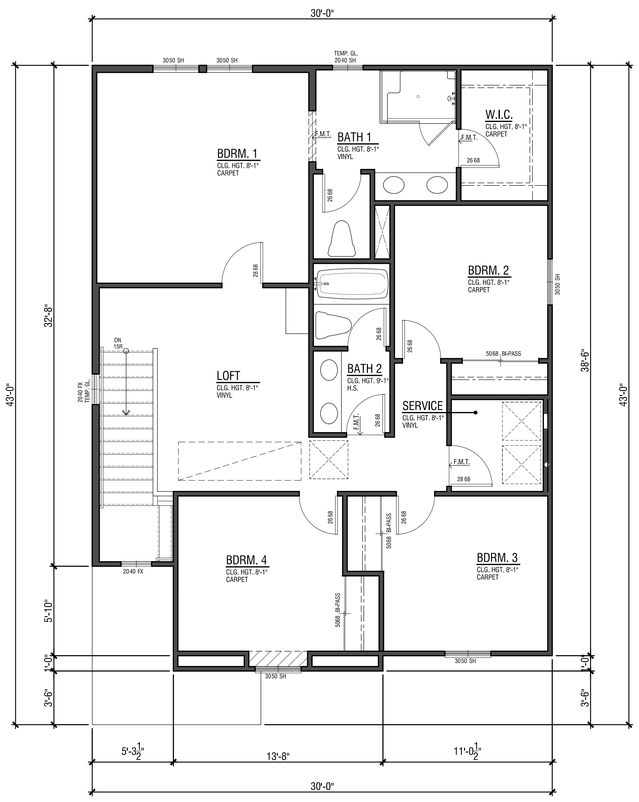
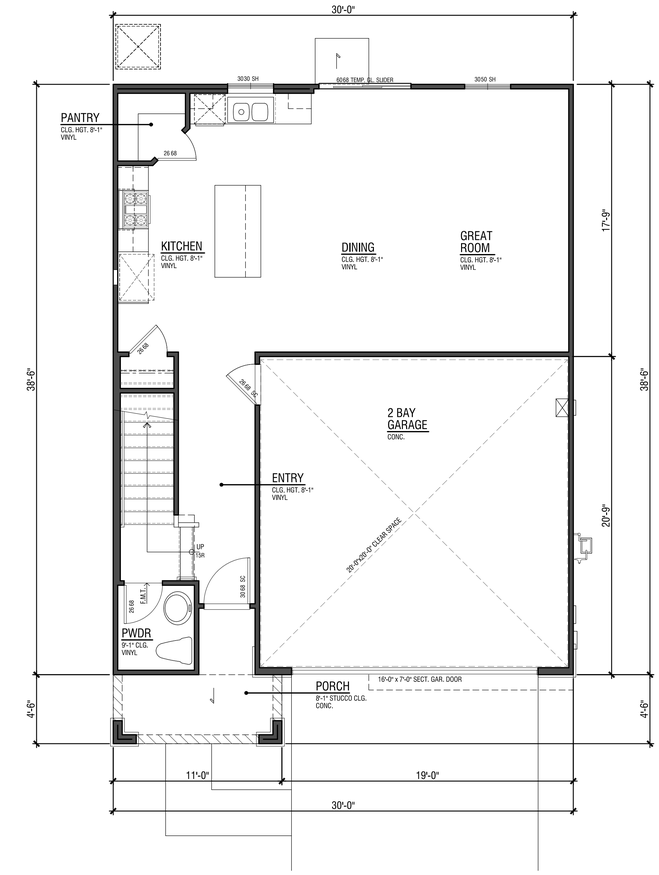


Upper Floor - 1,062 SF

PLAN 3.1775

1775 SF
4 Bdrm | 2.5 Bath Loft
2 Bay Garage
8' | 8' Plates



Lower Floor - 713 SF

3A | Americana

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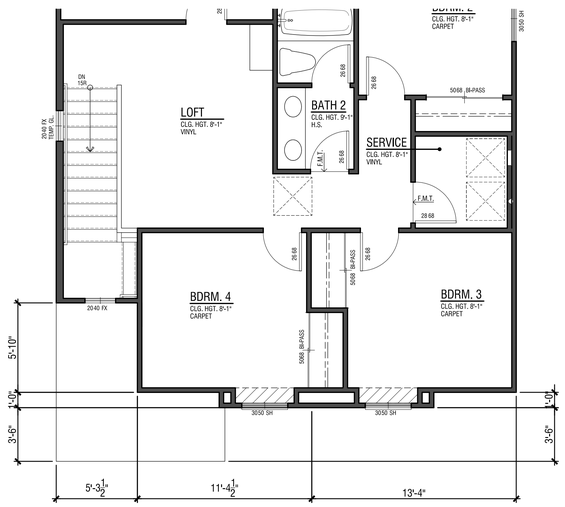
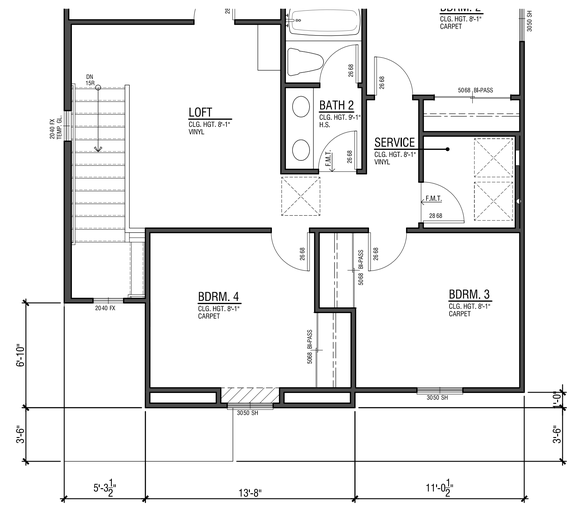
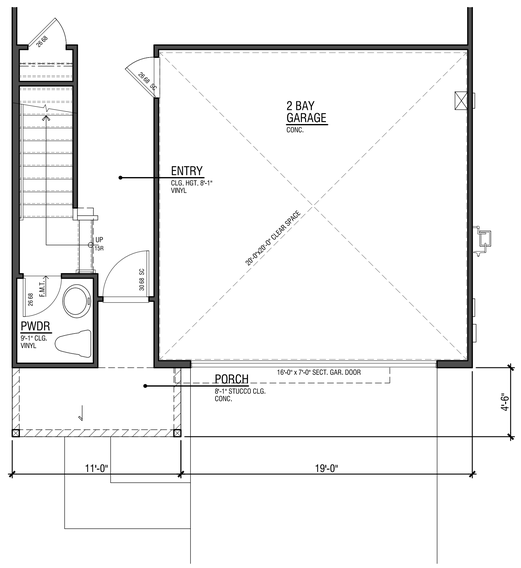
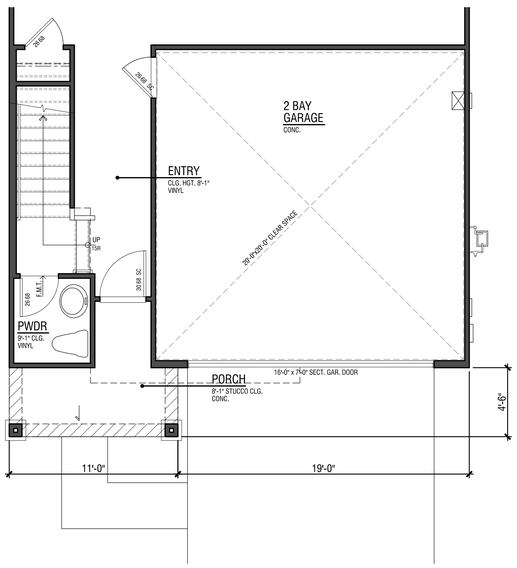








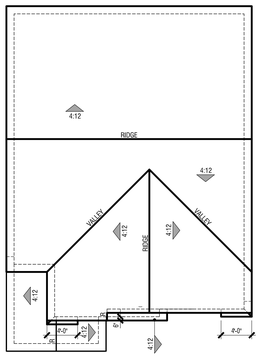
PLAN 3.1775

1775 SF
4 Bdrm | 2.5 Bath Loft
2 Bay Garage
8' | 8' Plates

3B | Farmhouse

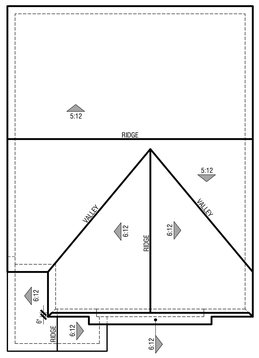
3C | Craftsman

© 2022 WILLIAM HEZMALHALCH ARCHITECTS, INC. dba WHA.



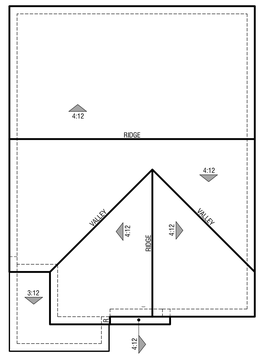
3A | Americana

Eave 12" / Rake 12"
Composition Roof



3B | Farmhouse

Eave 12" / Rake 12"
Composition Roof



3C | Craftsman

Eave 12" / Rake 12"
Composition Roof

PLAN 3.1775

Roof Plans

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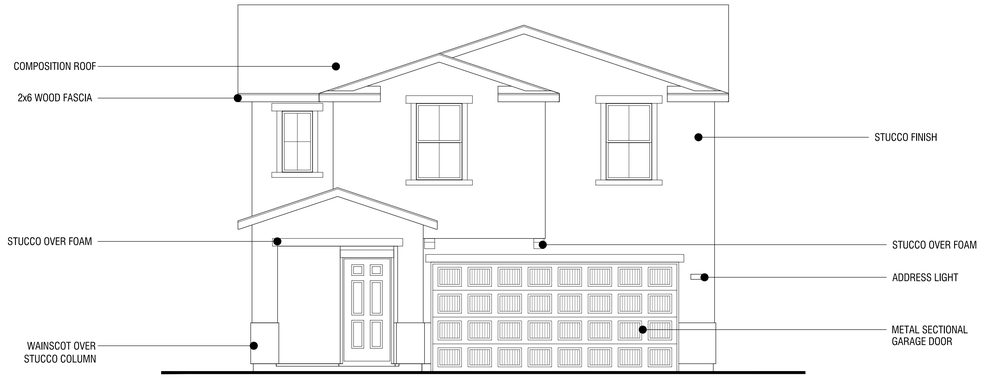
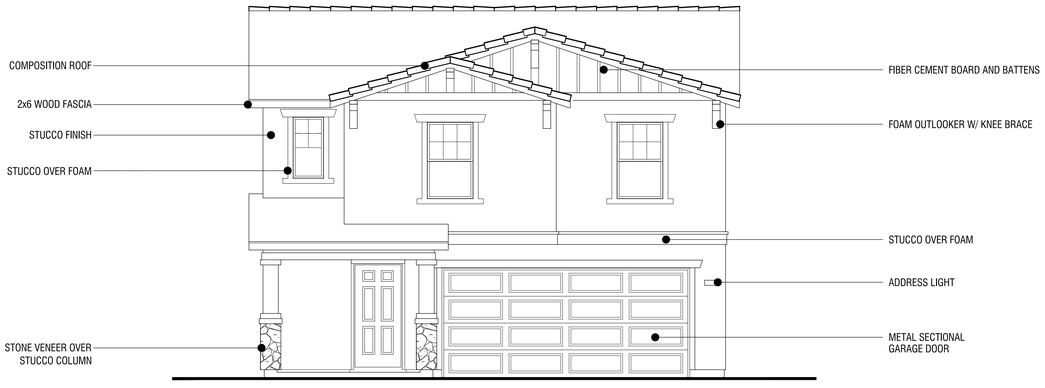


3A | Americana



3C | Craftsman

3B | Farmhouse

PLAN 3.1775

Front Elevations

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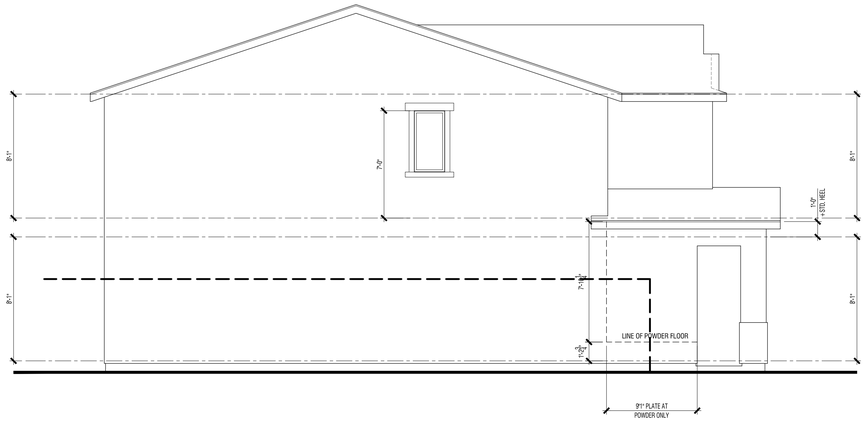
ARCHITECTS . PLANNERS . DESIGNERS

WHA

ORANGE COUNTY . LOS ANGELES . BAY AREA



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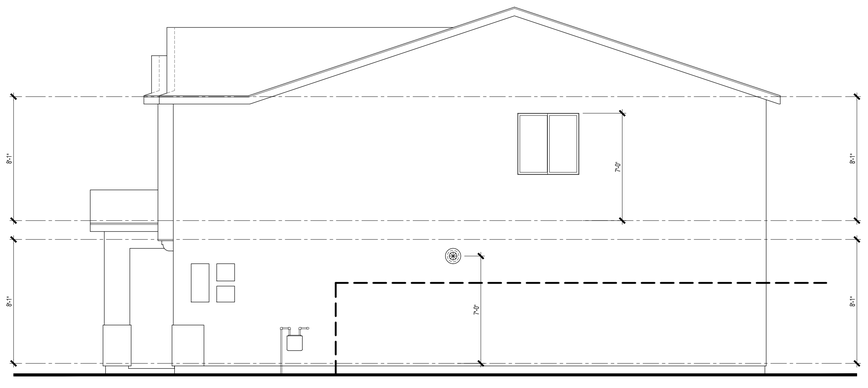
Front



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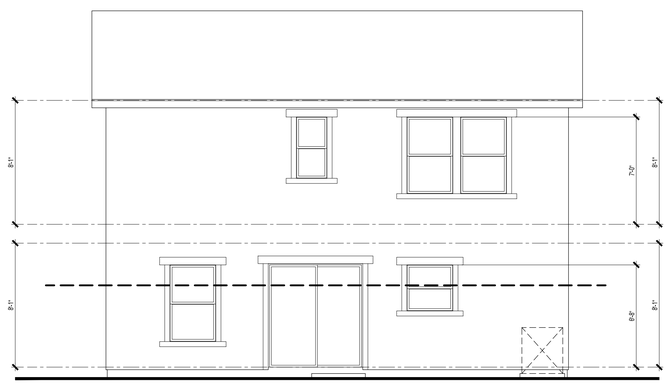

Rear

PLAN 3A | AMERICANA

Building Elevations

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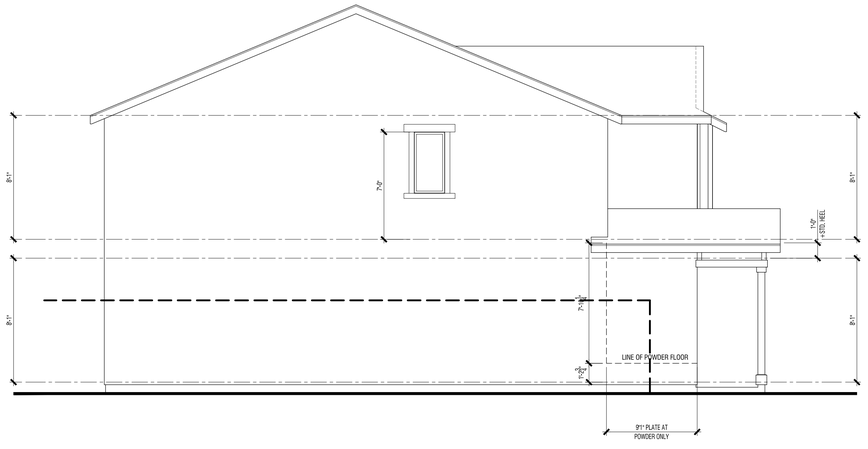
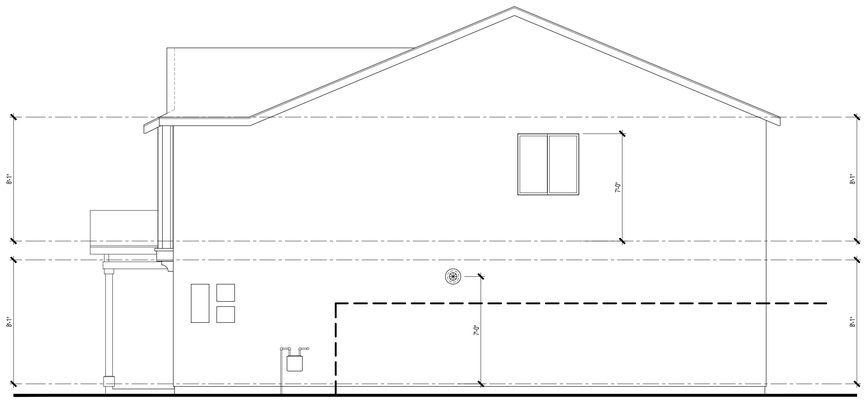


Left

Front



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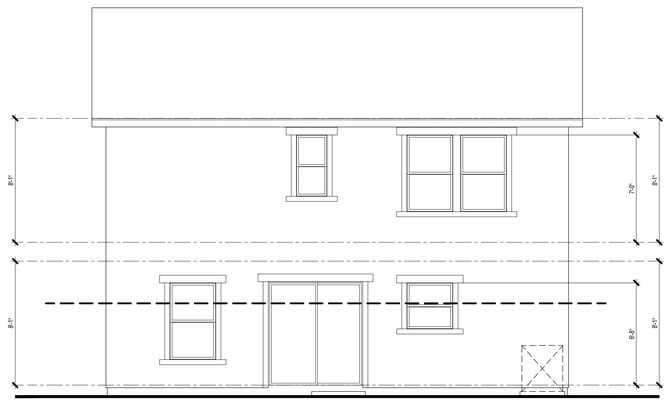

Rear

PLAN 3B | FARMHOUSE

Building Elevations

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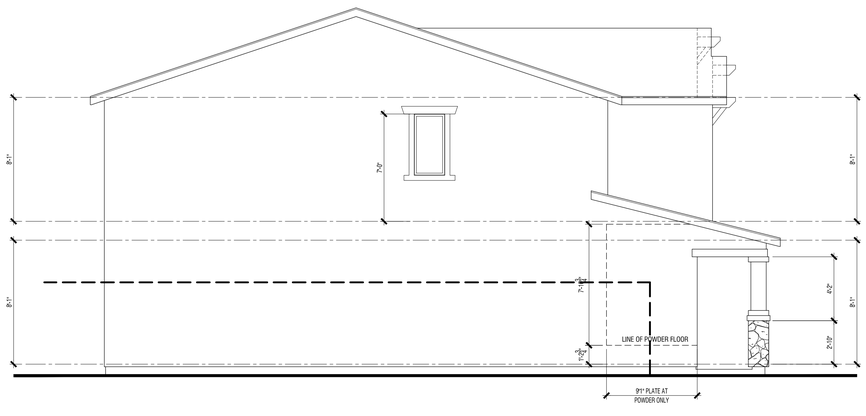

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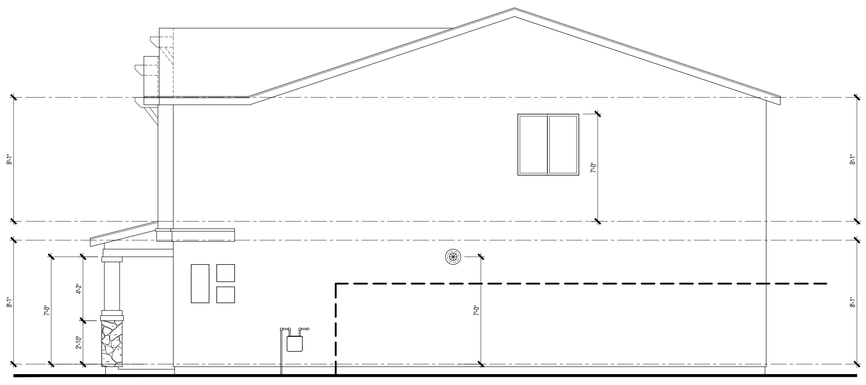
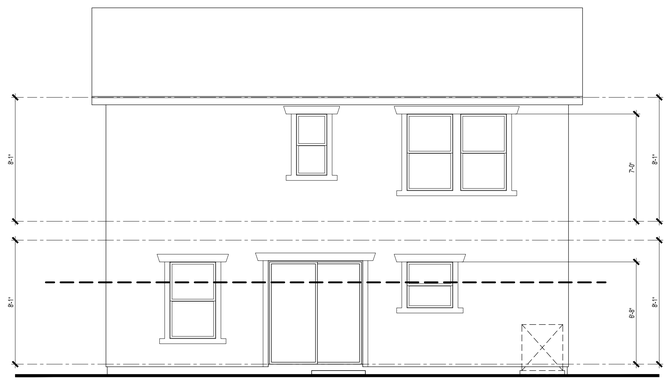
Front



Right



Rear

PLAN 3C | CRAFTSMAN

Building Elevations

D·R·HORTON America's Builder NYSE

LIBRARY SERIES

CALIFORNIA

3.6

DESIGN DEVELOPMENT

© 2022 WILLIAM HEZMALHALCH ARCHITECTS, INC. dba WHA. | 2022XXX | 05-09-22

ARCHITECTS . PLANNERS . DESIGNERS

WHA

ORANGE COUNTY . LOS ANGELES . BAY AREA

City of Visalia
Annexation No. ___

ANNEXATION TO THE CITY OF VISALIA AND DETACHMENT FROM TULARE COUNTY SERVICE AREA #__

Description for Annexation

That portion of the Northeast Quarter of Section 28, Township 18 South, Range 24 East, Mount Diablo Base and Meridian, in the County of Tulare, State of California, more particularly described as follows:

COMMENCING at the East Quarter corner of above said Section 28, as shown on the map filed in Book 20 of Parcel Maps, at Page 9, Tulare County Records; thence, along the east line of said Section 28, North 00°09'28" East, a distance of 329.81 feet, more or less; thence, parallel with the south line of the Northeast Quarter of said Section 28, said parallel line also being the south line of Parcel 2 shown on above said parcel map, South 89°58'18" West, a distance of 879.93 feet, more or less, to the southwest corner of said Parcel 2 and the **TRUE POINT OF BEGINNING**; thence,

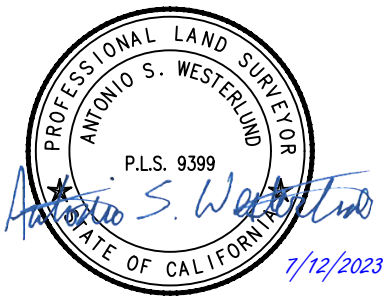
C1) continuing southerly along said course, South 89°58'18" West, a distance of 1760.26 feet, more or less, to the point of intersection with the west line of the Northeast Quarter of said Section 28; thence,

C2) northerly along said west line, North 00°05'16" East, a distance of 997.78 feet, more or less, to the southwest corner of Lot 36 of Kelsey Tract No. 1 as shown on the map filed in Book 16 of Maps, at Page 4, Tulare County Records, said point also being a point on the existing City Limit line; thence,

C3) easterly along the south line of Lots 36, 35 and 34 of said Kelsey Tract No. 1 and the City Limit line, North 89°46'20" East , a distance of 1761.50 feet, more or less, to the point of intersection with the northerly prolongation of the west line of Parcel 1 as shown on the map filed in Book 20 of Parcel Maps, at Page 9, Tulare County Records, said point also being a point on the existing City Limit line; thence,

C4) southerly along said west line and City Limit line and the west line of Parcel 2 shown on above said parcel map, South 00°09'28" West, a distance of 1003.91 feet, more or less, to the **TRUE POINT OF BEGINNING**.

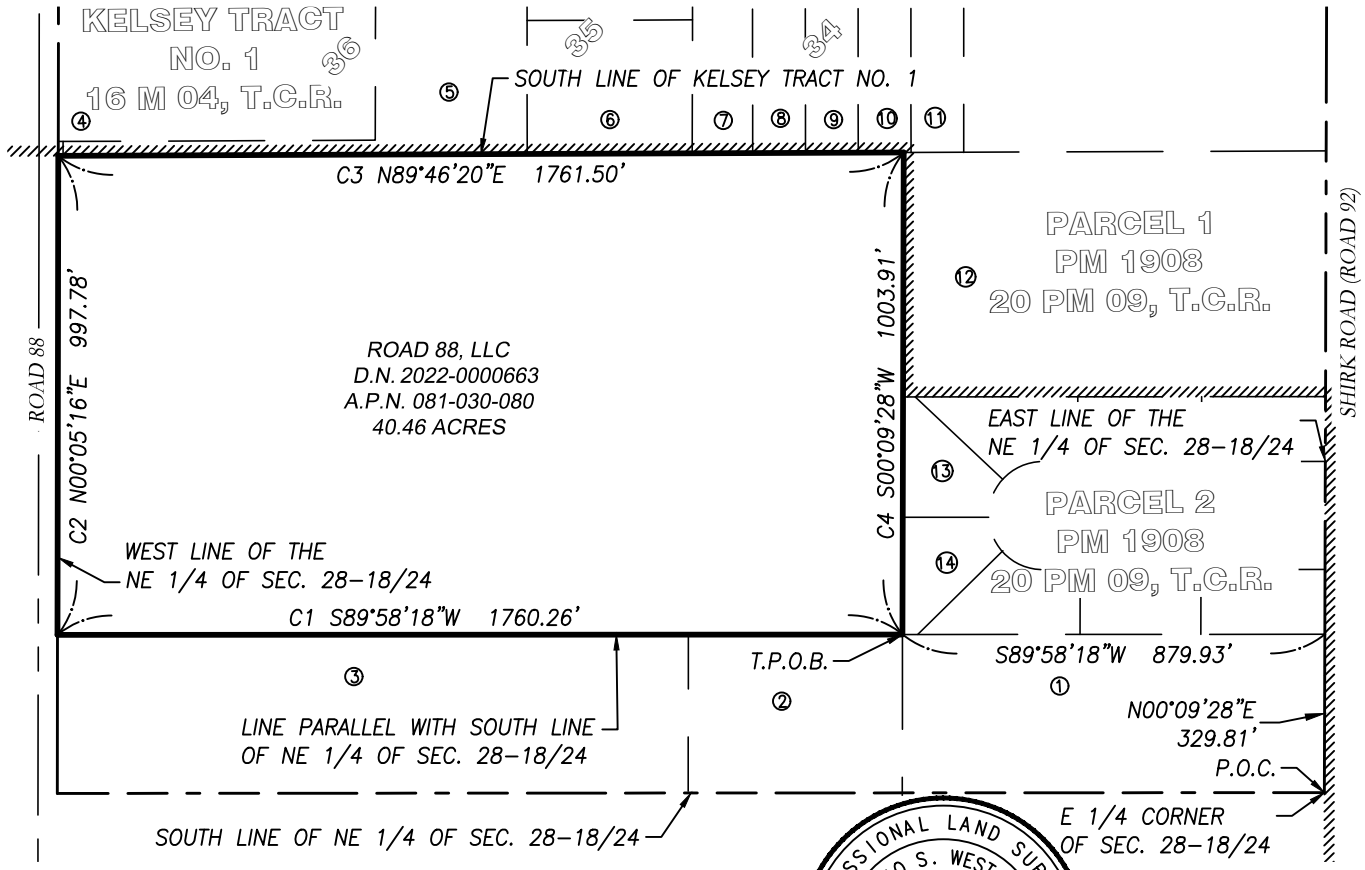
Containing 40.46 acres, more or less.



ANNEXATION NO. _____

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 18 SOUTH, RANGE 24 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF TULARE, STATE OF CALIFORNIA.
AREA: 40.46 ACRES

ANNEXATION TO THE CITY OF VISALIA AND DETACHMENT FROM TULARE COUNTY SERVICE AREA #_



NOTE:

SEE SHEET 2
FOR ALL ADJACENT PROPERTY
ASSESSOR PARCEL NUMBERS

N

0' 400'

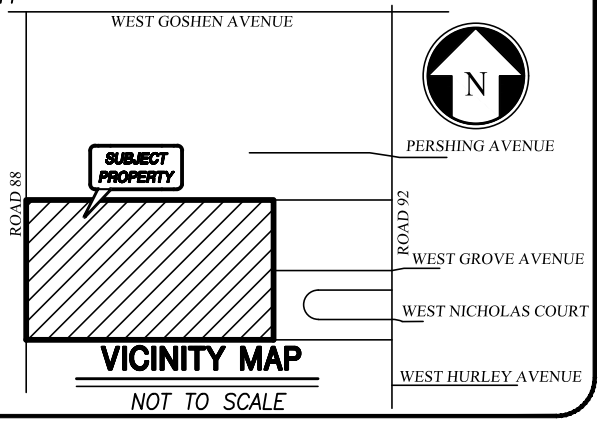
SCALE: 1"= 400'

PROFESSIONAL LAND SURVEYOR
ANTONIO S. WESTERLUND
P.L.S. 9399
STATE OF CALIFORNIA

7/12/2023

LEGEND

D.N.	DOCUMENT NUMBER PER OFFICIAL RECORD OF TULARE COUNTY
T.C.R.	TULARE COUNTY RECORDS
XX M YY	BOOK XX OF MAPS, PAGE YY, T.C.R.
XX PM YY	BOOK XX OF PARCEL MAPS, PAGE YY, T.C.R.
⑭	SEE SHEET 2 FOR APN TABLE
	EXISTING PARCEL LINES
	EXISTING CITY LIMITS
	AREA BEING ANNEXED
	RIGHT-OF-WAY
P.O.C.	POINT OF COMMENCEMENT
T.P.O.B.	TRUE POINT OF BEGINNING
C1	COURSE CALL



VICINITY MAP
NOT TO SCALE

L:\PROJECTS\2021\210315\ACAD\LEGALS\ANNEXATION\210315-ANNEX.DWG 7/12/2023 11:29 AM

PROJECT NO.:	210315
DRAWN BY:	TKF
QA/QC BY:	RCO
SCALE:	1" = 400'
SHEET NO.:	1 OF 2

EXHIBIT B

PLAT TO ACCOMPANY DESCRIPTION
ANNEXATION
CITY OF VISALIA

601 POLLASKY AVE., STE. 301 TEL: (559) 449-2400
CLOVIS, CA 93612 WWW.QKINC.COM

© COPYRIGHT BY QUAD KNOPF, INC. UNAUTHORIZED USE PROHIBITED.

ANNEXATION NO. _____

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 28, TOWNSHIP 18 SOUTH, RANGE 24 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF TULARE, STATE OF CALIFORNIA.
AREA: 40.46 ACRES

ANNEXATION TO THE CITY OF VISALIA AND DETACHMENT FROM TULARE COUNTY SERVICE AREA #_

ADJACENT PROPERTY OWNERS
ASSESSOR PARCEL NUMBERS

(1)	081-040-005
(2)	081-040-029
(3)	081-030-019
(4)	081-140-003
(5)	081-140-011
(6)	081-140-012
(7)	081-150-012
(8)	081-150-013
(9)	081-150-014
(10)	081-150-015
(11)	081-150-016
(12)	081-030-046
(13)	081-030-054
(14)	081-030-055

L:\PROJECTS\2021\210315\ACAD\LEGALS\ANNEXATION\210315-ANNEX.DWG 7/12/2023 11:29 AM

PROJECT NO.:	210315
DRAWN BY:	TKF
QA/QC BY:	RCO
SCALE:	1" = 400'
SHEET NO.:	2 OF 2

EXHIBIT B

PLAT TO ACCOMPANY DESCRIPTION ANNEXATION

CITY OF VISALIA

601 POLLASKY AVE., STE. 301 TEL: (559) 449-2400
CLOVIS, CA 93612 WWW.QKINC.COM
© COPYRIGHT BY QUAD KNOPF, INC. UNAUTHORIZED USE PROHIBITED.

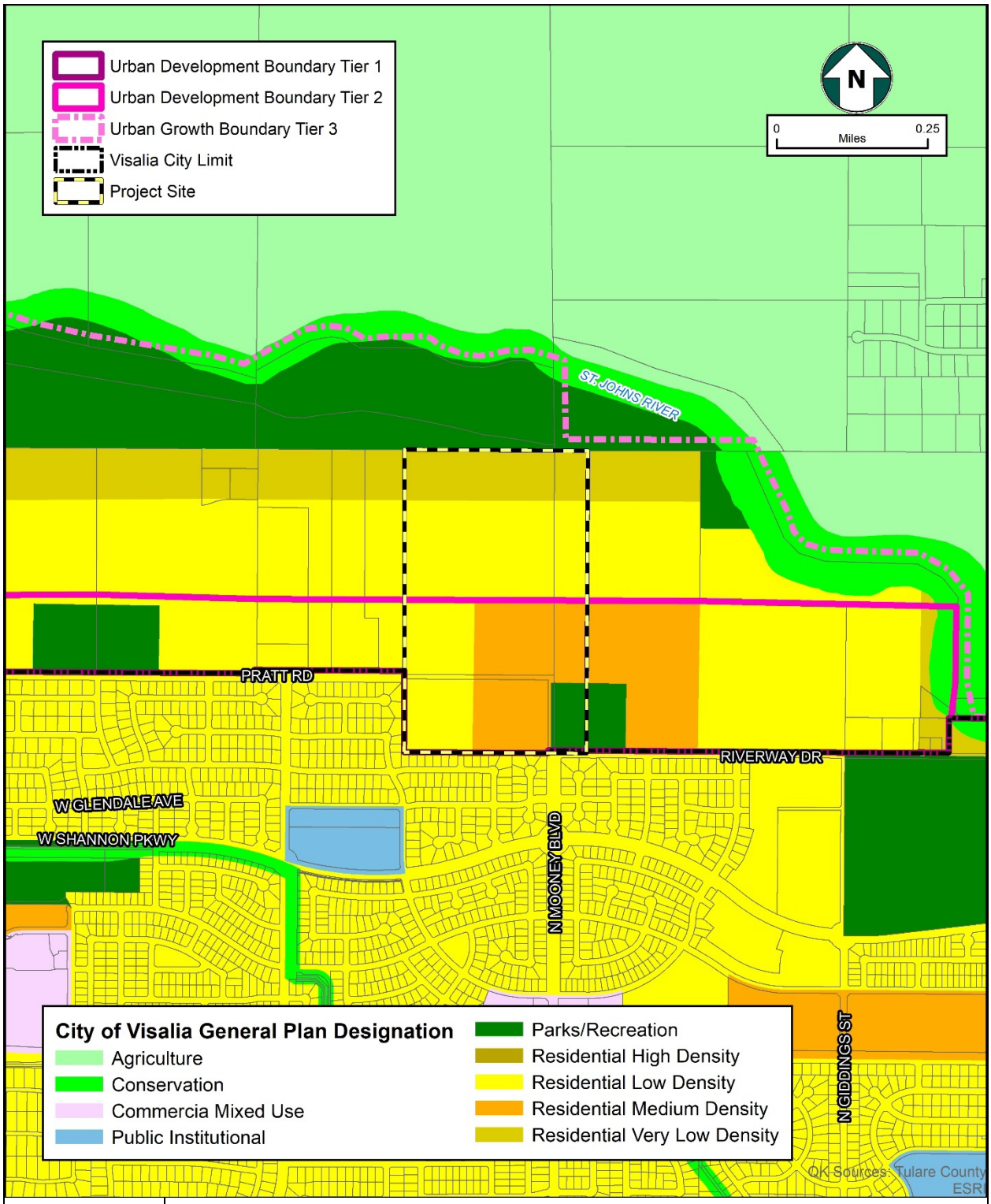


Figure 3-1

Current General Plan Land Use

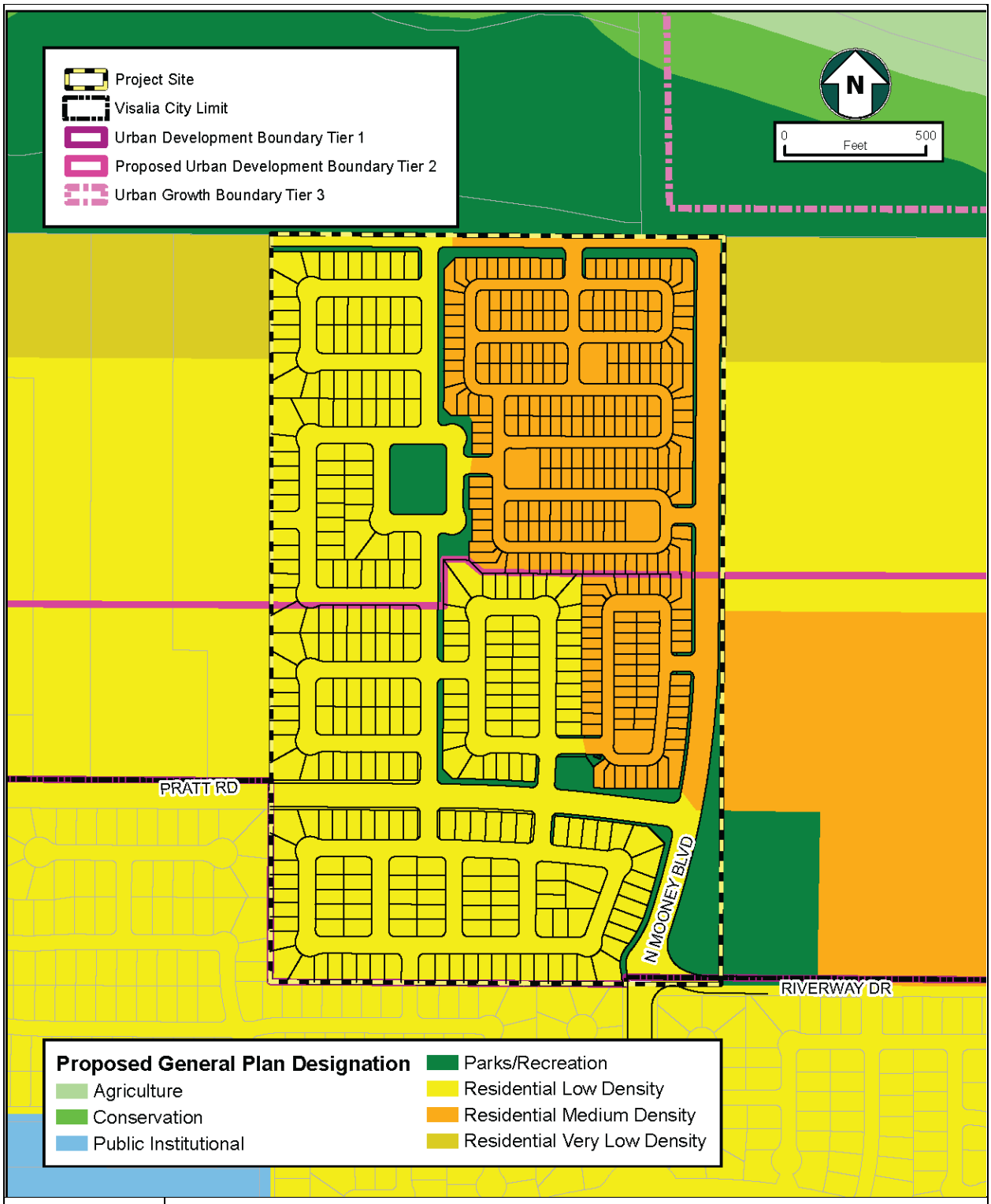


Figure 3-2

Proposed General Plan Land Use

Recording Requested By and
When Recorded Return to:

City Clerk
City of Visalia
425 E. Oak Avenue
Visalia, CA 93292

DRAFT DEVELOPMENT AGREEMENT
Pratt Family Ranch Specific Plan and Tentative Subdivision Map No. 5583

This Development Agreement, hereinafter referred to as "Agreement", is entered into as of this ___ day of _____, 2023, by and between the CITY OF VISALIA, a municipal corporation of the State of California, hereinafter referred to as the "City", and DR HORTON CA3, INC., hereinafter referred to as "Developer", and who has interest in real property, herein call the "Property", which is more particularly described in Exhibit "A" and is situated in the City of Visalia, County of Tulare, State of California, and;

WHEREAS, applications have been filed by the Developer to facilitate the creation, annexation, and development of the Pratt Family Ranch Specific Plan (hereinafter referred to as the "Specific Plan"), which will result in the development of approximately 541 single-family dwellings and approximately 8 acres of park uses on land designated for Low and Medium Density Residential and Parks/Recreation, adjacent to the intersection of Pratt Avenue, Mooney Boulevard, and River Way Avenue, adjacent to the Visalia City limits and;

WHEREAS, on August 14, 2023, the Planning Commission of the City of Visalia passed Resolution No. 2023-___ approving Pratt Family Ranch Tentative Subdivision Map No. 5583 for the Property, wholly located with Urban Growth Development Boundary Tier II (herein referred to as "Tier II)" and;

WHEREAS, on _____, the City Council of the City of Visalia passed and adopted Specific Plan No. 2021-06 and General Plan Amendment No. 2021-05, establishing the Pratt Family Ranch Specific Plan and changing the General Plan land use designations within the Property to conform to the land use designations specified in the Specific Plan, and;

WHEREAS, the development project, consisting of the Property and the applicable terms, conditions, policies, and standards of the Specific Plan, and the approved resolutions for Pratt Family Ranch Tentative Subdivision Map No. 5583, is hereinafter call the "Development" and;

WHEREAS, this Development Agreement is being carried out as part of the City of Visalia General Plan's Land Use Policy No. LU-P-22, which allows for parcels under common ownership or unified control that are within multiple Urban Growth Boundary Tiers to be annexed and developed in accordance with a master plan and development agreement that details the overall site plan development while maintaining the City of Visalia's interest in maintaining concentric growth through the Urban Growth Boundary Tiers, and;

WHEREAS, currently, the Development is situated in Growth Tiers II and III as defined in the City of Visalia General Plan. In accordance with Policy No. LU-P-22, the Development may be allowed to annex and develop in Tier III while the City is still limiting development approvals to land within the Tier II designation, subject to the terms and conditions stated in this Agreement, and;

WHEREAS, the Developer has requested to allow the Specific Plan development to begin growth in the Tier II area and to have continuous growth into the Tier III portion of the plan. The proposal of "continuous growth" infers not being interrupted by the requirement of meeting citywide expansion criteria as stated in Land Use Policy LU-P-21. The reasoning for the request is that the proposed Project has been designed as one cohesive neighborhood with parks, a walking trail, and other amenities that connect development situated in Tiers II and III, and;

WHEREAS, City will proceed with initiating annexation of the entire Property, including portions situated within Tier III in accordance with the terms and conditions of this Agreement, and;

WHEREAS, City will allow for development of the portions of the Property situated within Tier II at any time, provided that the property is annexed into the City of Visalia and has secured all proper entitlements, and;

WHEREAS, City will only allow for development of the portions of the Property situated within Tier III only at such time when the terms and conditions of this Agreement have been fulfilled by Developer to the satisfaction of the City. The development of the portions of the Property situated within Tier III will also require the installation of all public improvements within the respective areas as different phases of this development move forward, and;

WHEREAS, City shall periodically review this Agreement, and Developer agrees the City may modify or terminate the Agreement, if the Developer has not complied with the terms and conditions, and;

WHEREAS, Developer agrees that when a building permit or any other type of entitlement or permit for the Development is sought, all applicable processing and impact fee amounts, conditions, and standards that the City has in effect at the time of entitlement is requested by the Developer shall be applied to the requested permits, and;

WHEREAS, nothing in this Agreement shall prohibit Developer from selling their portion of the Development provided any such sale is subject to and incorporates the terms and conditions of this Agreement, and;

WHEREFORE, the City and Developer do enter into this Agreement and for and in consideration of the mutual covenants, duties and obligations herein set forth, do agree as follows:

ARTICLE I
LEGAL AUTHORITY

1.1 This Agreement is made pursuant to and in accordance with the provisions of California Government Code Section 65864 and Visalia Municipal Code, Chapter 17.60.

1.2 This Agreement shall remain in effect for a period of ten (10) years from the date of execution subject to the terms and conditions set forth herein.

1.3 Developer hereby acknowledges that it is in escrow to buy and develop all residential portions of the Development and it is responsible for all rights and duties contained in the Specific Plan and the Development. No other party or individual has a development interest in the Development.

1.4 City shall periodically review this Agreement pursuant to Visalia Municipal Code Section 17.60.070 and may modify or terminate this Agreement if Developer has not in good faith complied with the terms and conditions of this Agreement. If City terminates this Agreement, then City may pass a moratorium of further development under Section 17.60.090 or seek other available relief and Developer agrees that all costs expended by the City, including attorney fees, may be charged by the City to Developer for violations of this Agreement.

1.5 Developer acknowledges that no vesting rights have been granted with the Development and this agreement will not vest any rights beyond those stated in the Specific Plan and the Development.

ARTICLE II
BUILDING PROGRESS WITHIN TIER II

2.1 Before the City allows for the processing of a tentative subdivision map within the portion of the Property situated within Tier III, final maps that comprise all phases and lots specified in the Pratt Family Ranch Tentative Subdivision Map No. 5583 shall be recorded with the Tulare County Recorder.

2.2 Before the City allows for the recording of a final subdivision map pertaining to any portion of the tentative subdivision map within the portion of the Property situated within Tier III, building permits for new dwelling units shall be issued for all (100% of) lots located within Sub Phase 1 of Phase 1 (i.e., 94 lots), all (100% of) lots located within Sub Phase 2 of Phase 1 (i.e., 60 lots), and at least 56 (62% of) lots located within Sub Phases 3 and 4 of Phase 1, which cumulatively equates to 85% of the residential lots in Tier II being issued building permits prior to approvals of any development in Tier III.

2.3 A tentative subdivision map for the Tier III area can be filed and reviewed by the Site Plan Review Committee, and can subsequently be filed with the City of Visalia, but cannot be scheduled for hearing until Articles 2.1 and 2.2 are met.

ARTICLE III
IMPROVEMENTS

3.1 Developer shall dedicate and construct Mooney Boulevard between the Property's south boundary and the entire project frontage of Sub Phase 2 of Phase 1. Mooney Boulevard shall be constructed as an 84' collector roadway as shown in the Street Cross Section figures in the Specific Plan and in accordance with current City Development Standards.

3.2 Developer shall dedicate and construct Pratt Avenue between the Property's west boundary to Mooney Boulevard. Pratt Avenue shall be constructed as an 84' collector roadway as shown in the Street Cross Section figures in the Specific Plan and in accordance with current City Development Standards.

3.3 Developer shall construct a pedestrian trail and landscaping within the 20' wide landscape easements along all portions of Pratt Avenue, Mooney Boulevard, and Zachary Street contained within Tier 2, as identified in Figure 5-1 of the Specific Plan.

3.4 Mooney Boulevard and Pratt Avenue roadway designs shall incorporate Class II bike lanes.

3.5 Developer shall submit to the City landscape and irrigation plans associated with all Outlots identified within the Pratt Family Ranch Tentative Subdivision Map No. 5583 that are to be maintained by and Landscape and Lighting District, including the lots labeled as the "HOA Park" within the gated community identified as Sub Phase 2 of Phase 1 and the "Dog Park" on the east side of Mooney Boulevard, and shall improve and install all affiliated amenities on said Outlots in accordance with the approved plans.

3.6 Street lighting plans shall be submitted with the final plat application. All the outdoor lighting shall meet City standards or as defined in the Specific Plan.

3.7 Developer shall design, construct, and improve the intersection of Mooney Boulevard and River Way Avenue to the City's satisfaction. The intersection has been shown on the Specific Plan and Development Plan in the form of a round-about; however, the City recognizes that additional design work to be borne by the Developer is required for the installation of a round-about and must be approved by the City Engineer and the City Planner. Should the installation of a round-about be found infeasible at this location due to site constraints, safety requirements, or other reasons, the Developer shall proceed with designing the roadways and improving the intersection to City standards.

3.8 Utility relocations, as needed, shall be completed where the final roadway and round-about alignment may require such.

3.9 All local streets within Phase 1 of the Development, as shown on the Pratt Family Ranch Tentative Subdivision Map No. 5583, shall be installed in accordance with City standards prior to the recording of any final map or issuance of building permits in Tier III.

3.10 The Developer shall prepare and submit improvement plans for street, drainage, water, sewer, and landscaping improvements to the City Engineer for approval for their respective portions of the Development. The improvement plans must be approved by the City for conformance with applicable City standards prior to Developer beginning work on these public improvements.

3.11 The Developer shall prepare and submit improvement plans for the required landscape and lighting district to the City Engineer for approval for their respective portions of the Development. The City must approve the improvement plans prior to the formation of the district. The landscape and lighting district applies to all outlots identified on the subdivision map, but does not apply to the gated community's streets, parks, and other common features which will be maintained by a homeowners association.

3.12 Maintenance of landscaping (including temporary irrigation) and furnishings in all public rights-of-way, parks, and open spaces shall be the responsibility of the Developer until formal acceptance by the City Council. Upon acceptance by the City, such parks, open space and landscape easement areas shall become a part of the City's public system.

3.13 Developer shall establish a Homeowners Association (HOA) applicable to the gated communities (i.e., Medium Density Residential land uses) wherein the Developer shall prepare the Articles of Incorporation and the Bylaws for the Homeowners Association. All common areas must be conveyed to the HOA before any lot is sold, or provide for maintenance of common areas through an agreement made between all the property owners.

3.14 No change in the use or restrictions specified in this Agreement shall be allowed or changed without modification of this Agreement. In the event Developer changes or expands the use permitted by this Agreement or fail to comply with the restrictions in this Agreement, without formal modification of this Agreement, then Developer shall be in default.

ARTICLE IV
AFFIDAVIT OF PROPERTY OWNERS

4.1 The signatures of all owners of the Development agreeing to submit the Development to this Agreement and to the provisions set forth in California Government Code Section 65864 et seq. and Visalia Municipal Code, Chapter 17.60 shall be provided and are incorporated into this Agreement.

ARTICLE V
DEFAULT

5.1 In the event Developer, its successors, assigns or subsequent owners of the Development or any other person acquiring an interest in the Development, fail to faithfully and materially comply with all of the terms and conditions included in this Agreement, such failure to comply will be deemed a default hereunder. In that event, City shall have the following options:

(a) This Agreement and the commitments contained herein may be terminated, and the zoning designation reversed, if City provides written notice of Developer default, and provides the hearing required by California Government Code Section 65868. Provided, however, no such termination or reversal shall occur unless City provides written notice of the default and Developer fails to cure such default within ninety (90) days after mailing or delivery of said notice.

(b) Enforcement of this Agreement may be sought in an action at law or in equity in a court of competent jurisdiction located in Tulare County, California.

(c) A waiver by City of any default by Developer of any one or more of the covenants or conditions hereof shall apply solely to the breach waived and shall not bar any other rights or remedies of City or apply to any subsequent breach of any covenants or conditions.

(d) Notwithstanding anything to the contrary herein, in the event of a material default of the Agreement, the parties agree that City and/or Developer shall have thirty (90) days after delivery of notice of such default to correct the same prior to the non-defaulting party's seeking of any remedy provided for herein; provided, however, that in the case of any such default which cannot with diligence be cured within such thirty (90) day period, if the defaulting party shall commence curing the same within the thirty (90) day period and prosecute the curing of same with diligence and continuity, then the time within which such default may be cured shall be extended for such

period as may be necessary to complete the curing of the same, but in any event not to exceed (6) months; and provided further, however, no default by a subsequent owner of a portion of the Development shall constitute a default by Developer for the portion of the Development still owned by Developer.

(e) In the event the performance of any obligation to be performed hereunder by any party hereto is delayed for causes that are beyond the reasonable control of the party responsible for such performance, which shall include, with limitation, acts of civil disobedience, strikes or similar causes, the time for such performance shall be extended by the amount of time of such delay.

(f) In addition to the remedies set forth above, in the event of a default by Developer, or any other party claiming an interest herein, City may withhold building permits for any lots within the Development until such time as the default is cured.

ARTICLE VI
UNENFORCEABLE PROVISIONS

6.1 If any term, provision, commitment or restriction of this Agreement or the application thereof to any party or circumstances shall, to any extent be held invalid or unenforceable, the remainder of this instrument shall remain in full force and effect.

ARTICLE VII
ASSIGNMENT AND TRANSFER

7.1 After its execution, this Agreement shall be recorded in the office of the County Recorder. Each commitment and restriction on the development subject to this Agreement, shall be a burden on the Development, shall be appurtenant to and for the benefit of the Development, and shall run with the land. This Agreement shall be binding on the City, the Developer, and their respective heirs, administrators, executors, agents, legal representatives, successors and assigns; provided, however, that if all or any portion of the Property is divided, each owner of a legal lot shall only be responsible for duties and obligations associated with an owner's parcel and shall not be responsible for duties and obligations or defaults as to other parcels or lots within the Development. The new owner of the Development or any portion thereof (including, without limitation, any owner who acquires its interest by foreclosure, trustee's sale or otherwise) shall be liable for all commitments and other obligations arising under this Agreement with respect only to such owner's lot or parcel.

ARTICLE VIII
GENERAL MATTERS

8.1 Amendments. Any alteration or change to this Agreement shall be made only after complying with the notice and hearing provisions of California Government Code Section 65868 and Visalia Municipal Code, Chapter 17.60.

8.2 Paragraph Headings. This Agreement shall be construed according to its fair meaning and as if prepared by both parties hereto. Titles and captions are for convenience only and shall not constitute a portion of this Development Agreement. As used in this Agreement, masculine, feminine or neuter gender and the singular or plural number shall each be deemed to include the others wherever and whenever the context so dictates.

8.3 Choice of Law. This Agreement shall be construed in accordance with the laws of the State of California in effect at the time of the execution of this Agreement. Any action brought in connection with this Agreement shall be brought in a court of competent jurisdiction located in Tulare County, California.

8.4 Notices. Any notice which a party may desire to give to another party must be in writing and may be given by personal delivery, by mailing the same by registered or certified mail, return receipt requested postage prepaid, or by Federal Express or other reputable overnight delivery service, to the party to whom the notice is directed at the address of such party set forth below

City:
City Clerk
City of Visalia
425 E. Oak Avenue
Visalia, CA 93292

Developer:
DR Horton CA3, Inc.

or such other addresses and to such other persons as the parties may hereafter designate in writing to the other parties. Any such notice shall be deemed given upon delivery if by personal delivery, upon deposit in the United States mail, if sent by mail pursuant to the foregoing.

ARTICLE IX
MISCELLANEOUS

9.1 This Agreement may be modified only by means of a subsequently executed and acknowledged written agreement.

9.2 In the event Developer fails to comply with the commitments set forth herein, within one hundred twenty (120) days of written notice of such failure from the City, in addition to any other

remedies which the City may have available to it, the City shall have the right, without prejudice to any other rights or remedies, to cure such default or enjoin such violation and otherwise enforce the requirements contained in this Agreement, and to collect the direct costs associated with such action from Developer.

9.3 In the event that a judicial dispute arises regarding the enforcement or breach of this Agreement, then the prevailing party in such dispute shall be entitled to recover its attorney's fees and costs reasonably incurred, including fees and costs incurred on appeal.

9.4 The applicable building codes for structures shall be the codes in effect when a complete application for a building permit is filed. Development impact fees, if imposed by ordinance, or amended shall be payable as specified in said ordinance or amendment even if the effective date is after the date of this Agreement or the annexation and/or rezone thereto.

9.5 Each person signing this Agreement represents and warrants that he or she is duly authorized and has legal capacity to execute and deliver this Agreement. Each party represents and warrants to the other that the execution and delivery of the Agreement and the performance of such party's obligations hereunder have been duly authorized and that the Agreement is a valid and legal agreement binding on such party and enforceable in accordance with its terms.

IN WITNESS WHEREOF, the parties have hereunto caused this Agreement to be executed, effective on the day and year first above written.

DR Horton CA3, Inc.

_____

Signature Date

_____

Print Name

DR Horton CA3, Inc.

Company Name

_____

Title

CITY OF VISALIA

Leslie Caviglia
City Manager/City Clerk Date

ATTEST:

Deputy City Clerk Date

APPROVAL AS TO FORM:

City Attorney Date

MEMO

Date: August 8, 2023

To: Paul Bernal, Community Development Director

From: Ernie Escobedo, QK Inc.

Subject: Pratt Family Ranch Specific Plan – Tier III Development

cc: Corine Demetreos; Richelle Carino

Dear Mr. Bernal:

Please accept this memo as our request to develop the Tier III portion of the proposed Pratt Family Ranch Specific Plan area. The Specific Plan has been designed to create a cohesive neighborhood for future homeowners to enjoy. We believe it is necessary to open up the Tier III portion for development to adequately give homeowners the opportunity to experience the Specific Plan's intent of creating a sense of belonging and community at Pratt Family Ranch.

- LU-P-22 states – *"LU-P-22 Allow for City Council approval of master plans, following Planning Commission review and recommendation, for sites under a single ownership or unified control, which may include developable land within both multiple development tiers. Allow for pre-zoning of this master planned land, subject to execution of a development agreement between the City and the land owner conforming to the requirements of Government Code Section 65864 et seq., with the project allowed to annex and develop while the City is still limiting development approvals to land within the Tier I or Tier II designation. An approved master-planned site then could be annexed before development is permitted in Tier II or Tier III under Policy LU-P21. The development agreement would spell out details on overall development, density/ intensity and phasing, infrastructure needs and financing, and what each party would do. This policy will allow large land owners, with Council approval, to have a longer time frame for development and infrastructure planning, consistent with the vision of the General Plan, and also "nail down" the numbers for their financial partners while still maintaining the City's interest in having concentric growth through a phasing plan."*

Based on LU-P-22, it allows for continuous growth into the next growth tier through a master plan. Pratt Family Ranch is in this unique situation where the community straddles two tiered areas. The Pratt Family Ranch Specific Plan has amenities and connectivity within both Tiers II and III. These features include parks, lighting, signage, and a walking trail system that connects the two tiers. Simply put, the two tiers complement each other with an overall French countryside aesthetic. While the other entitlements including the General Plan Amendment, Pre-Zoning and Annexation include both Tiers, only the Tier II tentative map has been allowed to be submitted for consideration.

We are requesting approval to develop Tier III at Pratt Family Ranch. This is a unique request that would provide a seamless transition of development within both Tiers II and III with its own standalone development standards. Tier II development will also include necessary infrastructure that allows for an incremental implementation of the Tier III portion of the Specific Plan that completes the sidewalks and landscaping. The project area would already be annexed and have all the necessary infrastructure to provide future residents with a complete neighborhood.

Thank you,

Ernie Escobedo
Branch Manager, QK Inc.

DRAFT INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

D.R. HORTON, AMERICA'S BUILDER

PRATT FAMILY RANCH PROJECT

State of California

City of Visalia

MARCH 2023

DRAFT INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

PRATT FAMILY RANCH PROJECT

Prepared for:

City of Visalia
Visalia Planning and Zoning Department
315 East Acequia Avenue
Visalia, CA 93291
Contact Person: Brandon Smith, Planner
Phone: (559) 716-4636

Consultant:

601 E. Pollasky Avenue, Suite 301
Clovis, CA 93612
Contact: Ernie Escobedo
Phone: (559) 449-2400

January 2023

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Project #200180

NOTICE OF PUBLIC HEARING AND INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

This is to advise that the City of Visalia has prepared a Mitigated Negative Declaration for the Project identified below that is scheduled to be held at the Planning Commission of the City of Visalia meeting on Monday, August 14, 2023.

PLEASE BE ADVISED that the Planning Commission of the City of Visalia will consider adopting the Mitigated Negative Declaration at the meeting to be held on Monday, August 14, 2023. Presentations will be made at approximately 7:00 p.m. Action on items on the agenda will occur after the presentations. The meeting will be held at the Visalia Council Chambers, 707 W. Acequia Avenue, Visalia, California 93291.

Project Name

Pratt Family Ranch

Project Location

The Project is located north and west of the Mooney Boulevard and Riverway Drive intersection. The Project site is bounded by the St. Johns River to the north, the Shannon Ranch residential development to the south, and agricultural land to the west and east. The Project site is adjacent to the current City of Visalia limits, within Tulare County, California.

The Project site includes Assessor's Parcel Numbers (APN): 078-010-025, 078-010-028, 078-010-029, 078-110-022, 078-110-023, approximately 95 acres. The site is within Section 13, Township 18 South, and Range 24 East.

Project Description

The Project proposed to develop a residential community with 544 dwelling units, associated infrastructure, and a park on approximately 95 acres of undeveloped land.

The Project is located outside of the current Visalia city limits north of Mooney Boulevard in the northern portion of the City of Visalia and would be annexed into the City's boundary.

Road improvements proposed by the Project include the construction of a traffic circle at the intersection of Mooney Boulevard and Riverway Avenue. In accordance with the City's General Plan Planned Circulation Systems Improvements requirements, Avenue 320 will be built out to half a four-lane arterial street. Improvements such as curb and gutter to Avenue 320 will only be installed on the south side of the street abutting the northern frontage of the Project. Mooney Boulevard will also be constructed as a two-lane arterial north of the traffic circle to the end of the dog park, including curb and gutter along the dog park and the Project's eastern frontage. Pratt Road will be constructed to its full extent through the Project site.

The Project would include approvals of the following discretionary actions:

1. Annexation No. 2021-04 of approximately 95 acres from unincorporated Tulare County (County) into the City of Visalia (City) for future residential development.

2. General Plan Amendment No. 2021-05:

   From existing County Land Use Designations(see Figure 3-2):

   - 16 acres of Residential Very Low Density
   - 50 acres of Residential Low Density
   - 25 acres of Residential Medium Density and
   - 4 acres of Park/Recreation

   To Proposed City Land Use Designations(see Figure 3-3):

   - 62 acres of Residential Low Density
   - 25 acres of Residential Medium Density
   - 8 acres of Parks/Recreation

   The General Plan establishes the pre-zone for the Project. Therefore, no separate action is needed for a pre-zone. Upon annexation, the Project will have the following City Zone Districts (see Figure 3-5):

   - 35 net acres of R-1-5 (5,000 SF Min Site Area)
   - 20 net acres of R-M-2 (Multi-Family Residential)
   - 6 net acres of QP (Quasi-Public) in the City of Visalia

3. A Specific Plan – Pratt Family Ranch

The Specific Plan is divided into two tiers (Tier 2 and Tier 3) of development that coincide with the City of Visalia's General Plan Urban Development Boundaries. Infrastructure will be constructed to the extent to which the Project will be adequately served or as recommended by the City of Visalia. There are two main phases proposed for the development of the Plan Area (Figure 3-1).

Phase 1 consists of the development of the Tier 2 Planning Area. Phase 1 development will include the build-out of the Tier 2 portion of the Plan Area and include perimeter landscaping, sidewalk, and roadways of Pratt Road, landscaping, sidewalk, and roadways of a portion of Mooney Boulevard, the construction of the Riverway Drive and Mooney Boulevard traffic circle. Tier 2 is 39.39 acres and will consist of approximately 247 lots within the Medium Density Residential and Low Density Residential land use designations.

Phase 2 consists of the development of the Tier 3 Planning Area. Phase 2 development will include the build-out of the Tier 3 portion of the Plan Area and include perimeter landscaping, sidewalk, and roadways of Avenue 320 and the completion of the perimeter landscaping, sidewalk, and roadways of Mooney Boulevard as it meets Avenue 320. Tier 3 is 37.88 acres consisting of 297 lots within the Medium Density Residential and Low Density Residential land use designations.

4. Pratt Family Ranch Tentative Subdivision Maps

Construction is anticipated to start in mid-2024 and take approximately three years for full build-out of all homes.

The document and documents referenced in the Initial Study/Mitigated Negative Declaration are available for review at the City of Visalia Community Development Department, 315 East Acequia Avenue, Visalia, California 93291, and at the website:

https://www.visalia.city/depts/community_development/planning/ceqa_environmental_review.asp.

As mandated by the California Environmental Quality Act (CEQA), the public review period for this document will be 30 days (CEQA Section 15073[b]). The public review period begins on July 20, 2023 and ends on August 9, 2023. For further information, please contact Brandon Smith, AICP, Project Manager at (559) 713-4636 or brandon.smith@visalia.city.

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ADT	average daily trips
AE-20	Exclusive Agriculture Zone – 20 Acre
AE-40	Exclusive Agriculture Zone – 40 Acre Minimum
APN	Assessor's Parcel Number
AQPs	air quality plans
BAU	Business as Usual
BG	below grade
BMPs	best management practices
BPS	Best Performance Standards
BSA	Biological Survey Area
Cal Water	California Water Service Company
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CBC	California Building Code
CBC	California Building Codes
CDF	California Department of Forestry
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CEUS	California Commercial End-Use Survey
CNDDB	California Natural Diversity Database
CNPS	California native Plant Society
CSU	California State University
CWA	Clean Water Act
DOGGR	Department of Conservation, Division of Oil, Gas, and Geothermal Resources
DTSC	Department of Toxic Substances Control
EPA	Environmental Protection Agency
ESA	Ecological Sensitive Area
ESA	Ecological Sensitive Area
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gases
gpcd	gallons per capita per day
HCP	Habitat Conservation Plan
IRWM	Integrated Regional Water Management
IS	Initial Study
ITE	Institute of Transportation Engineers
KDWCD	Kaweah Delta Water Conservation District
LAFCo	LAFCo
LDR	Low Density
LOMR	Letter of Map Revision
LOS	Level of Service

MDR	Medium Density
mgd	million gallons per day
MM	Mitigation Measure
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
NAHC	Native American Heritage Commission
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NHD	National Hydrography Dataset
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPDES	National Pollutant Discharge Elimination System
NWI	National Wetlands Inventory
PPV	peak particle velocity
PRC	Public Resources Code
QP	Quasi-Public
R-1-5	Residential Low Density
RASS	Residential Appliance Saturation Survey
R-M-2	Residential Medium Density
RS	records search
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SR	State Route
SVP	Society of Vertebrate Paleontology
SWIS	Solid Waste Information System
SWMP	Stormwater Management Program
SWPP	Stormwater Pollution Prevention Plan
SWPPP	Storm Water Pollution Prevention Plan
TACs	toxic air contaminants
TCAG	Tulare County Association of Governments
TID	Tulare Irrigation District
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UWMP	Urban Water Management Plan
VLDR	Very Low Density
VMT	vehicle miles traveled
VMT	vehicle miles traveled
VPD	Visalia Police Department
VT	Visalia Transit
WCP	Water Conservation Plant

MITIGATED NEGATIVE DECLARATION

As Lead Agency under the California Environmental Quality Act (CEQA), the City of Visalia reviewed the Project described below to determine whether it could have a significant effect on the environment because of its development. In accordance with CEQA Guidelines Section 15382, "[s]ignificant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

Project Name

Pratt Family Ranch

Project Location

The Project is located north and west of the Mooney Boulevard and Riverway Drive intersection. The Project site is bounded by the St. Johns River to the north, the Shannon Ranch residential development to the south and west, and agricultural land to the east.

The Project site includes Assessor's Parcel Numbers (APN): 078-010-025, 078-010-028, 078-010-029, 078-110-022, 078-110-023, approximately 95 acres. The site is within Section 13, Township 18 South, and Range 24 East.

Project Description

The Project proposed to develop a residential community with 544 dwelling units, associated infrastructure, and a park on approximately 95 acres of undeveloped land.

The Project is located outside of the current Visalia city limits north of Mooney Boulevard in the northern portion of the City of Visalia and would be annexed into the City's boundary.

Road improvements proposed by the Project include the construction of a traffic circle at the intersection of Mooney Boulevard and Riverway Avenue. In accordance with the City's General Plan Planned Circulation Systems Improvements requirements, Avenue 320 will be built out to half a four-lane arterial street. Improvements such as curb and gutter to Avenue 320 will only be installed on the south side of the street abutting the northern frontage of the Project. Mooney Boulevard will also be constructed as a two-lane arterial north of the traffic circle to the end of the dog park, including curb and gutter along the dog park and the Project's eastern frontage. Pratt Road will be constructed to its full extent through the Project site.

The Project would include approvals of the following discretionary actions:

1. Annexation No. 2021-04 of approximately 95 acres from unincorporated Tulare County (County) into the City of Visalia (City) for future residential development.

2. A General Plan Amendment:

   From existing County Land Use Designations(see Figure 3-2):

   - 16 acres of Residential Very Low Density
   - 50 acres of Residential Low Density
   - 25 acres of Residential Medium Density and
   - 4 acres of Park/Recreation

   To Proposed City Land Use Designations(see Figure 3-3):

   - 25 acres of Residential Medium Density
   - 8 acres of Parks/Recreation

3. A Prezone:

   From existing County Zone District (see Figure 3-4):

   - AE-40 (Exclusive Agriculture Zone – 40 Acre Minimum)
   - AE-20 (Exclusive Agriculture Zone – 20 Acre)

   To proposed City Zone Districts (see Figure 3-5):

   - 35 net acres of R-1-5 (5,000 SF Min Site Area)
   - 20 net acres of R-M-2 (Multi-Family Residential)
   - 6 net acres of QP (Quasi-Public) in the City of Visalia

4. A Specific Plan – Pratt Family Ranch

The Specific Plan is divided into two tiers (Tier 2 and Tier 3) of development that coincide with the City of Visalia's General Plan Urban Development Boundaries. Infrastructure will be constructed to the extent to which the Project will be adequately served or as recommended by the City of Visalia. There are two main phases proposed for the development of the Plan Area (Figure 3-1).

Phase 1 consists of the development of the Tier 2 Planning Area. Phase 1 development will include the build-out of the Tier 2 portion of the Plan Area and include perimeter landscaping, sidewalk, and roadways of Pratt Road, landscaping, sidewalk, and roadways of a portion of Mooney Boulevard, the construction of the Riverway Drive and Mooney Boulevard traffic circle. Tier 2 is 39.39 acres and will consist of approximately 247 lots within the Medium Density Residential and Low Density Residential land use designations.

Phase 2 consists of the development of the Tier 3 Planning Area. Phase 2 development will include the build-out of the Tier 3 portion of the Plan Area and include perimeter landscaping, sidewalk, and roadways of Avenue 320 and the completion of the perimeter landscaping, sidewalk, and roadways of Mooney Boulevard as it meets Avenue 320. Tier 3 is

37.88 acres consisting of 297 lots within the Medium Density Residential and Low Density Residential land use designations.

5. Tentative Subdivision Map

The document and documents referenced in the Initial Study/Mitigated Negative Declaration are available for review at the Visalia Planning and Zoning Department, 315 East Acequia Avenue, Visalia, California 93291.

As mandated by the California Environmental Quality Act (CEQA), the public review period for this document will be 30 days (CEQA Section 15073[b]). The public review period begins on July 20, 2023 and ends on August 9, 2023. For further information, please contact Brandon Smith, AICP, Project Manager at (559) 713-4636 or brandon.smith@visalia.city.

Mailing Address and Phone Number of Contact Person

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Visalia, CA 93291
(559) 713-4636
Email: brandon.smith@visalia.city

Findings

As Lead Agency, the City of Visalia finds that the Project will not have a significant effect on the environment. The Environmental Checklist (CEQA Guidelines Appendix G) or Initial Study (IS) (see *Section 3 - Environmental Checklist*) identified one or more potentially significant effects on the environment, but revisions to the Project have been made before the release of this Mitigated Negative Declaration (MND), or mitigation measures would be implemented that reduce all potentially significant impacts less-than-significant levels. The Lead Agency further finds that there is no substantial evidence that this Project would have a significant effect on the environment.

Mitigation Measures Included in the Project to Avoid Potentially Significant Effects

AG - 1: Prior to the issuance of grading or building permits, the Project proponent shall mitigate impacts for loss of Prime Farmland and Farmland of Statewide Importance on the Project site at a 1:1 ratio. The Project proponent shall implement one or more of the following measures to mitigate the loss: Payment of In-Lieu Fees, Mitigation Banks, Fee Title Acquisition, Conservation Easements, and/or Land Use Regulation on land(s)within the Southern San Joaquin Valley of California, specifically within Kern County, Tulare County, Kings County, Fresno County, or Madera County. The City shall require, at a minimum: evidence that the preserved land has adequate water supply, agricultural zoning, evidence of land encumbrance documentation, documentation that the easement/regulations are

permanent and monitored, and documentation that the mitigation strategy is appropriately endowed. This mitigation shall be verified by the City prior to issuance of grading or building permits. Should the City of Visalia develop an Agricultural Mitigation Program before future construction within the Project begins, the Project proponent shall mitigate for the loss of agricultural land pursuant to the Program that is adopted by the City.

MM BIO-1: Within 14 days of the start of Project activities, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of these species. The pre-activity survey shall include walking transects to identify the presence of burrowing owls and their burrows and American badgers, and San Joaquin kit foxes and their dens. The transects shall be spaced at no greater than 30-foot intervals in order to obtain 100 percent coverage of the Project site and a 250-foot buffer. Areas devoid of habitat incapable of supporting these species would not require surveys. If no evidence of these special-status species is detected, no further action is required.

MM BIO-2: If dens or burrows that could support these species are discovered during the pre-activity survey conducted under Measure BIO-1, avoidance buffers outlined below shall be established. No work shall occur within these buffers unless a qualified biologist approves and monitors the activity.

Burrowing Owl (active burrows)

- Non-breeding season: September 1 – January 31 – 160 feet
- Breeding season: February 1 – August 31 – 250 feet

American Badger and San Joaquin Kit Fox

- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal or pupping den – Contact agencies for further guidance

Any Ecological Sensitive Area (ESA) buffer established shall remain in place until the species has left on its own. Once the species has left, the burrow may be monitored using trail cameras or a tracking medium such as diatomaceous earth once the species has left. If no species are detected for a minimum of three consecutive days/nights, the burrow may be hand excavated under the direct supervision of a qualified biologist. All burrow tunnels must be hand excavated to their terminus or examined before backfilling to ensure no burrowing owls, kit foxes, or other animals are hiding.

Alternatively, burrowing owls can be passively excluded from a non-nest burrow through the installation of one-way doors. Prior to engaging in such passive exclusion activities, an Exclusion Plan shall be prepared following the guidance outlined in the CDFW's Staff Report on Burrowing Owl Mitigation (QK, 2021). The Exclusion Plan shall be submitted to the CDFW for review and approval prior to implementation. Once approved, one-way doors may be installed at non-nest burrows. The doors shall be monitored for a minimum of three days to ensure burrowing owls have left the burrow. The burrow may then be excavated as

described above. If at any time during excavation a burrowing owl is detected within the burrow, excavation activities shall immediately cease, and the one-way door reinstalled and monitored until the owl has left the burrow. Hand excavation may then resume. Exclusion efforts shall be documented.

MM BIO-3: The following avoidance and minimization measures shall be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (QK, 2021).

- Project-related vehicles shall observe a daytime speed limit of 20 mph throughout the site in all Project areas, except on County roads and State and federal highways.
- All Project activities shall occur during daylight hours, but if work must be conducted at night, then a night-time construction speed limit of 10 mph shall be established.
- Off-road traffic outside of designated Project areas shall be prohibited.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed.
- Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW shall be contacted before proceeding with the work.
- In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW shall be contacted for guidance.
- All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes and burrowing owls before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity until the fox has escaped.
- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from a construction or Project site.
- No pets, such as dogs or cats, shall be permitted on the Project site.
- Project-related use of rodenticides and herbicides shall be restricted.
- A representative shall be appointed by the Project proponent, who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative shall be identified during the employee education program, and their name and telephone numbers shall be provided to the USFWS and CDFW.

- Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) shall be recontoured if necessary and revegetated to promote restoration of the area to pre-Project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the Project, but after Project completion, will not be subject to further disturbance and has the potential to be revegetated.
- Any Project personnel who are responsible for inadvertently killing or injuring one of these species shall immediately report the incident to their representative. This representative shall contact the CDFW (and USFWS in the case of San Joaquin kit fox) immediately in the case of a dead, injured, or entrapped San Joaquin kit fox, American badger, or burrowing owl.
- The Sacramento Fish and Wildlife office and CDFW Region 4 office shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project-related activities. The CDFW shall be notified in the case of accidental death to an American badger or western burrowing owl. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.
- New sightings of San Joaquin kit fox, American badger, or burrowing owl shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where a San Joaquin kit fox was observed shall also be provided to the USFWS.

MM BIO-4: If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys shall be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk Technical Advisory Committee (QK, 2021). The surveys shall be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys shall be conducted during at least two survey periods.

If no Swainson's hawk nests are found, no further action is required.

MM BIO-5: If an active Swainson's hawk nest is discovered at any time within 0.5 miles of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to the construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Construction activities shall not occur within 500 feet of an active nest but depending upon conditions at the site, this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to

increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist.

MM BIO-6: If Project activities must occur during the nesting season (February 1 to September 15), pre-activity nesting bird surveys shall be conducted within seven days prior to the start of construction at the construction site, plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). If no active nests are found, no further action is required. However, existing nests may become active, and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. If active nests are found during the survey or at any time during the construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer shall remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.

MM BIO-7: Prior to the initiation of construction activities, all personnel shall attend a Worker Environmental Awareness Training program developed by a qualified biologist. The program shall include information on the life histories of special-status species with the potential to occur on the Project, their legal status, the course of action shall these species be encountered onsite, and avoidance and minimization measures to protect these species.

MM CUL-1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified archaeologist can evaluate the find and make recommendations. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, fire-affected rock, and historic resources such as glass, metal, wood, brick, or structural remnants. Implementation of the mitigation measure below would ensure that the proposed Project would not cause a substantial adverse change in the significance of a historical resource.

MM CUL-2: Prior to any ground disturbance, if the City of Visalia receives a request from a Native American tribal group, a surface inspection of the site shall be conducted by a tribal monitor. The tribal staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, including information on potential cultural material, finds, and any excavation contractor, which will include information on potential cultural material finds, and the procedures to be enacted if resources are found. The tribal cultural staff shall monitor the site during grading activities.

Prior to any ground disturbance, the applicant shall offer the tribe the opportunity to provide a Native American Monitor during ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe.

MM CUL-3: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of the discovery of human remains, at the direction of the county coroner.

MM GEO-1: Prior to issuing of grading or building permits, if required, the Project applicant shall submit to the Lead Agency (1) the approved Storm Water Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board. The requirements of the SWPPP and NPDES shall be incorporated into design specifications and construction contracts. Recommended best management practices for the construction phase may include the following:

- Stockpiling and disposing of demolition debris, concrete, and soil properly.
- Protecting existing storm drain inlets and stabilizing disturbed areas.
- Implementing erosion controls.
- Properly managing construction materials.
- Managing waste, aggressively controlling litter, and implementing sediment controls.

Evidence of the approved SWPPP shall be submitted to the Lead Agency.

MM GEO-2: Prior to any ground-disturbing activities, the Project owner shall develop and implement a Paleontological Worker Education and Awareness Program. If paleontological resources are discovered during ground-disturbing activities (e.g., during Project construction or decommissioning), all earthwork or other types of ground disturbance within 50 feet of the find shall stop immediately until a qualified professional paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) can assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue or recommend salvage and recovery of the fossil. The paleontologist may also propose modifications to the stop-work radius based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage are required, recommendations will be consistent with the Society of Vertebrate Paleontology standards that are current as of the discovery and with currently accepted scientific practice.

MM NSE-1: During construction, the contractor shall implement the following measures:

a. All stationary construction equipment on the Project site shall be located so that noise-emitting objects or equipment face away from any potential sensitive receptors.
b. The construction contractor shall ensure that all construction equipment is equipped with manufacturer-approved mufflers and baffles. During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.
c. Construction activities shall take place during daylight hours, when feasible.

MM TRA-1: Prior to the issuance of building permits, the developer shall pay its pro-rata share for signalization of the following intersections:

a. Riggin Avenue at County Center Street
b. Riggin Avenue at Giddings Street
c. Ferguson Avenue at Mooney Boulevard

MM TRA-2: Prior to the issuance of building permits, the developer shall pay its pro-rata share to widen the eastbound approach to two left-turn lanes, two through-lanes, and one right-turn lane at the intersection of Riggin Avenue at Dinuba Boulevard (SR 63).

SECTION 1 - INTRODUCTION

1.1 - Overview

The Project proposes to develop a residential community with 544 dwelling units, associated infrastructure, and a park on approximately 95 acres of undeveloped land within the City of Visalia.

1.2 - California Environmental Quality Act

The City of Visalia is the Lead Agency for this Project pursuant to the CEQA Guidelines (Public Resources Code Section 15000 et seq.). The Environmental Checklist (CEQA Guidelines Appendix G) or Initial Study (IS) (see *Section 3 – Initial Study*) provides analysis that examines the potential environmental effects of the construction and operation of the Project. Section 15063 of the CEQA Guidelines requires the Lead Agency to prepare an IS to determine whether a discretionary project will have a significant effect on the environment. A Mitigated Negative Declaration (MND) is appropriate when an IS has been prepared, and a determination can be made that no significant environmental effects will occur because revisions to the Project have been made or mitigation measures will be implemented that reduce all potentially significant impacts to less-than-significant levels. The content of an MND is the same as a Negative Declaration, with the addition of identified mitigation measures and a Mitigation Monitoring and Reporting Program (MMRP) (see *Appendix A – Mitigation Monitoring and Reporting Program*).

Based on the IS, the Lead Agency has determined that the environmental review for the proposed application can be completed with an MND.

1.3 - Impact Terminology

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

- A finding of "no impact" is appropriate if the analysis concludes that the Project would not affect a topic area in any way.
- An impact is considered "less than significant" if the analysis concludes that it would cause no substantial adverse change to the environment and requires no mitigation.
- An impact is considered "less than significant with mitigation incorporated" if the analysis concludes that it would cause no substantial adverse change to the environment with the inclusion of environmental commitments that have been agreed to by the applicant.
- An impact is considered "potentially significant" if the analysis concludes that it could have a substantial adverse effect on the environment.

1.4 - Document Organization and Contents

The content and format of this IS/MND is designed to meet the requirements of CEQA. The report contains the following sections:

- *Section 1 – Introduction:* This section provides an overview of CEQA requirements, intended uses of the IS/MND, document organization, and a list of regulations that have been incorporated by reference.

- *Section 2 – Project Description:* This section describes the Project and provides data on the site's location.

- *Section 3 – Environmental Checklist:* This section contains the evaluation of 21 different environmental resource factors contained in Appendix G of the CEQA Guidelines. Each environmental resource factor is analyzed to determine whether the proposed Project would have an impact. One of four findings is made, which include: no impact, less-than-significant impact, less than significant with mitigation, or significant and unavoidable. If the evaluation results in a finding of significant and unavoidable for any of the 21 environmental resource factors, then an Environmental Impact Report will be required.

- *Section 4 – List of Preparers:* This section identifies the individuals who prepared the IS/MND.

- *Section 5 – Bibliography:* This section contains a full list of references that were used in the preparation of this IS/MND.

- *Appendix A – Mitigation Monitoring and Reporting Program:* This appendix contains the Mitigation Monitoring and Reporting Program.

1.5 - Incorporated by Reference

The following documents and/or regulations are incorporated into this IS/MND by reference:

- City of Visalia General Plan Update (2014)
- Tulare County General Plan 2030 (2021)
- City of Visalia 2020-2023 Adopted Housing Element (2019)
- City of Visalia Storm Water Management Plan (2005)
- Visalia Airport Master Plan (1971)
- Visalia City Improvement Standards (Updated Improvement Standard Implementation 2016)
- Tulare County Comprehensive Airport Land Use Plan (2012)
- Mid-Kaweah GSA Groundwater Sustainability Plan (2019)
- 2018
- Tulare County Association of Governments (TCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

SECTION 2 - PROJECT DESCRIPTION

2.1 - Introduction

The Project intends to create 544 residential lots on approximately 95 acres and the appurtenant infrastructure that is consistent with the General Plan designation of Residential Low Density and Residential Medium Density. As required for the Project, a General Plan Amendment is required and will cover the approximately 95-acre total Project site. Future zoning designations will be consistent with the land use designations (Residential Low Density, Residential Medium Density, Quasi Park), respectively R-1-5, R-M-2, and QP. The Project will also be required to be consistent with the accompanying Specific Plan and the policies textualized therein.

2.2 - Project Location

The Project area is primarily located north and west of the Mooney Boulevard and Riverway Drive intersection (see Figure 3-1).

The Project site includes Assessor's Parcel Numbers (APN): 078-010-025, 078-010-028, 078-010-029, 078-110-022, 078-110-023, approximately 95 acres. The site is within Section 13, Township 18 South, and Range 24 East.

2.3 - Surrounding Land Uses

The Project site is in a developing area of north Visalia. Surrounding land uses consist of existing single-family residences to the south, agriculture and existing rural single-family residential to the west, vacant land and the St. Johns River to the north, and agricultural land to the east.

2.4 - Proposed Project

The Project proposed to develop a residential community with 544 dwelling units, associated infrastructure, and a park on approximately 95 acres of undeveloped land within the City of Visalia. The Project would include approvals of the following actions:

The Project is located outside of the current Visalia city limits north of Mooney Boulevard in the northern portion of the City of Visalia and would be annexed into the City's boundary.

Road improvements proposed by the Project include the construction of a traffic circle at the intersection of Mooney Boulevard and Riverway Avenue. In accordance with the City's General Plan Planned Circulation Systems Improvements requirements, Avenue 320 will be built out to half a four-lane arterial street. Improvements such as curb and gutter to Avenue 320 will only be installed on the south side of the street abutting the northern frontage of the Project. Mooney Boulevard will also be constructed as a two-lane arterial north of the traffic circle to the end of the dog park, including curb and gutter along the dog park and the

Project's eastern frontage. Pratt Road will be constructed to its full extent through the Project site.

1. Annexation No. No. 2021-04 of approximately 95 acres from unincorporated Tulare County (County) into the City of Visalia (City) for future residential development.

2. A General Plan Amendment:

   From existing County Land Use Designations(see Figure 3-2):

   - 16 acres of Residential Very Low Density
   - 50 acres of Residential Low Density
   - 25 acres of Residential Medium Density and
   - 4 acres of Park/Recreation

   To Proposed City Land Use Designations(see Figure 3-3):

   - 25 acres of Residential Medium Density
   - 8 acres of Parks/Recreation

3. A Prezone:

   From existing County Zone District (see Figure 3-4):

   - AE-40 (Exclusive Agriculture Zone – 40 Acre Minimum)
   - AE-20 (Exclusive Agriculture Zone – 20 Acre)

   To proposed City Zone Districts (see Figure 3-5):

   - 35 net acres of R-1-5 (5,000 SF Min Site Area)
   - 20 net acres of R-M-2 (Multi-Family Residential)
   - 6 net acres of QP (Quasi-Public) in the City of Visalia

4. A Specific Plan – Pratt Family Ranch

   The Specific Plan is divided into two tiers (Tier 2 and Tier 3) of development that coincide with the City of Visalia's General Plan Urban Development Boundaries. Infrastructure will be constructed to the extent to which the Project will be adequately served or as recommended by the City of Visalia. There are two main phases proposed for the development of the Plan Area (Figure 3-1).

   Phase 1 consists of the development of the Tier 2 Planning Area. Phase 1 development will include the build-out of the Tier 2 portion of the Plan Area and include perimeter landscaping, sidewalk, and roadways of Pratt Road, landscaping, sidewalk, and roadways of a portion of Mooney Boulevard, the construction of the Riverway Drive and Mooney Boulevard traffic circle. Tier 2 is 39.39 acres and will consist of approximately 247 lots within the Medium Density Residential and Low Density Residential land use designations.

Phase 2 consists of the development of the Tier 3 Planning Area. Phase 2 development will include the build-out of the Tier 3 portion of the Plan Area and include perimeter landscaping, sidewalk, and roadways of Avenue 320 and the completion of the perimeter landscaping, sidewalk, and roadways of Mooney Boulevard as it meets Avenue 320. Tier 3 is 37.88 acres consisting of 297 lots within the Medium Density Residential and Low Density Residential land use designations.

5. Tentative Subdivision Map

   The document and documents referenced in the Initial Study/Mitigated Negative Declaration are available for review at the Visalia Planning and Zoning Department, 315 East Acequia Avenue, Visalia, California 93291.

As mandated by the California Environmental Quality Act (CEQA), the public review period for this document will be 30 days (CEQA Section 15073[b]). The public review period begins on July 20, 2023 and ends on August 9, 2023. For further information, please contact Brandon Smith, AICP, Project Manager at (559) 713-4636 or brandon.smith@visalia.city.

SECTION 3 - INITIAL STUDY

3.1 - Environmental Checklist

1. **Project Title:**

   Pratt Family Ranch

2. **Lead Agency Name and Address:**

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

3. **Contact Person and Phone Number:**

   Brandon Smith (559) 713-4636

4. **Project Location:**

   The Project is located north and west of the Mooney Boulevard and Riverway Drive intersection. The Project site is bounded by the St. Johns River to the north, the Shannon Ranch residential development to the south and west, and agricultural land to the east. The Project site is adjacent to the current City of Visalia limits, within Tulare County, California.

5. **Project Sponsor's Name and Address:**

   D.R. Horton
   419 West Murray
   Visalia, CA 93291
   Contact Person : Corine Demetrios
   Phone : (559) 631-6208

6. **General Plan Designation:**

   a. Existing:
      i. Residential Very Low Density
      ii. Residential Low Density
      iii. Residential Medium Density
      iv. Park/Recreation
   b. Proposed:
      i. Residential Low Density
      ii. Residential Medium Density
      iii. Parks/Recreation

7. Zoning:

a. Existing:
   i. AE-40 (Exclusive Agriculture Zone – 40 Acre Minimum) and AE-20 (Exclusive Agriculture Zone – 20 Acre) - 95 acres
b. Proposed (Net):
   i. R-1-5 (5,000 SF Min Site Area) –
   ii. R-M-2 (Multi-Family Residential)
   iii. QP (Quasi-Public)

8. Description of Project:

The Project proposed to develop a residential community with 544 dwelling units, associated infrastructure, and a park on approximately 95 acres of undeveloped land within the City of Visalia. The Project would include approvals of the following actions:

The Project is located outside of the current Visalia city limits north of Mooney Boulevard in the northern portion of the City of Visalia and would be annexed into the City's boundary.

Road improvements proposed by the Project including the construction of a traffic circle at the intersection of Mooney Boulevard and Riverway Avenue. In accordance with the City's General Plan Planned Circulation Systems Improvements requirements, Avenue 320 will be built out to half a four-lane arterial street. Improvements such as curb and gutter to Avenue 320 will only be installed on the south side of the street abutting the northern frontage of the Project. Mooney Boulevard will also be constructed as a two-lane arterial north of the traffic circle to the end of the dog park, including curb and gutter along the dog park and the Project's eastern frontage. Pratt Road will be constructed to its full extent through the Project site.

a. Annexation No. No. 2021-04 of approximately 95 acres from unincorporated Tulare County (County) into the City of Visalia (City) for future residential development.

b. A General Plan Amendment:

   From existing County Land Use Designations (see Figure 3-2):

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c. A Prezone:

From existing County Zone District (see Figure 3-4):

- AE-40 (Exclusive Agriculture Zone – 40 Acre Minimum)
- AE-20 (Exclusive Agriculture Zone – 20 Acre)

To proposed City Zone Districts (see Figure 3-5):

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d. A Specific Plan – Pratt Family Ranch

The Specific Plan is divided into two tiers (Tier 2 and Tier 3) of development that coincide with the City of Visalia's General Plan Urban Development Boundaries. Infrastructure will be constructed to the extent to which the Project will be adequately served or as recommended by the City of Visalia. There are two main phases proposed for the development of the Plan Area (Figure 3-1).

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e. Tentative Subdivision Map

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9. Surrounding Land Uses and Setting:

Surrounding land uses consist of existing single-family residences to the south, agriculture and existing rural single-family residential to the west, undeveloped land and the St. Johns River to the north, and agricultural land to the east.

10. Other Public Agencies Whose Approval is Required:

- Tulare County Local Agency Formation Commission (LAFCo)

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

A Sacred Land Files search was requested from the Native American Heritage Commission (NAHC), and a response was received on May 26, 2020. The NAHC responded with its findings that indicate negative results. Based on the results of cultural records search findings and the lack of historical or archaeological resources previously identified within a half-mile radius of the proposed Project, the potential to encounter subsurface cultural resources is minimal. Additionally, the Project construction would be conducted within the partially developed and previously disturbed parcel. The potential to uncover subsurface historical or archaeological deposits would be considered unlikely.

NOTE: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and Project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code Section 21082.3(c) contains provisions specific to confidentiality.

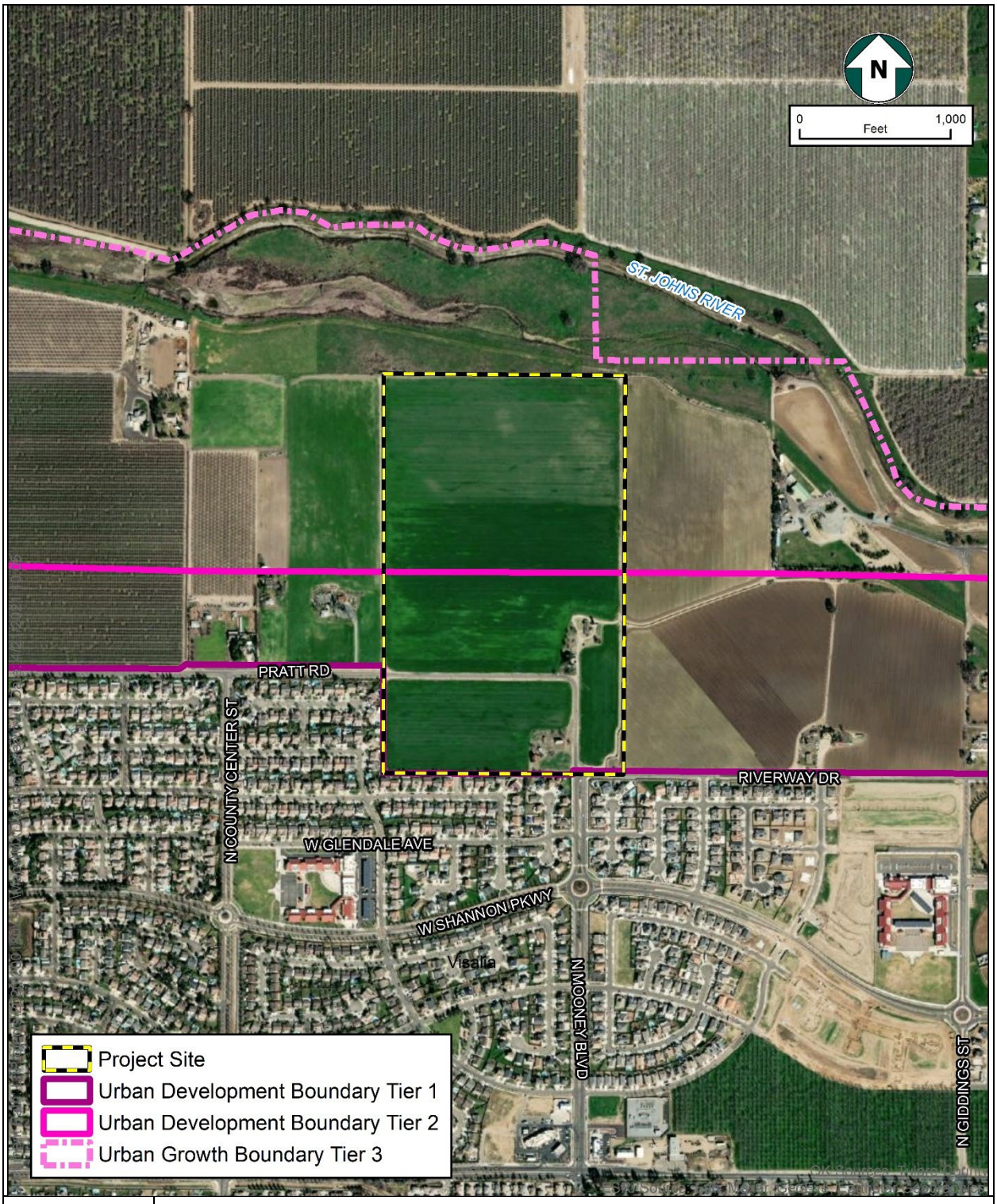

Figure 3-1
Proposed Project Site

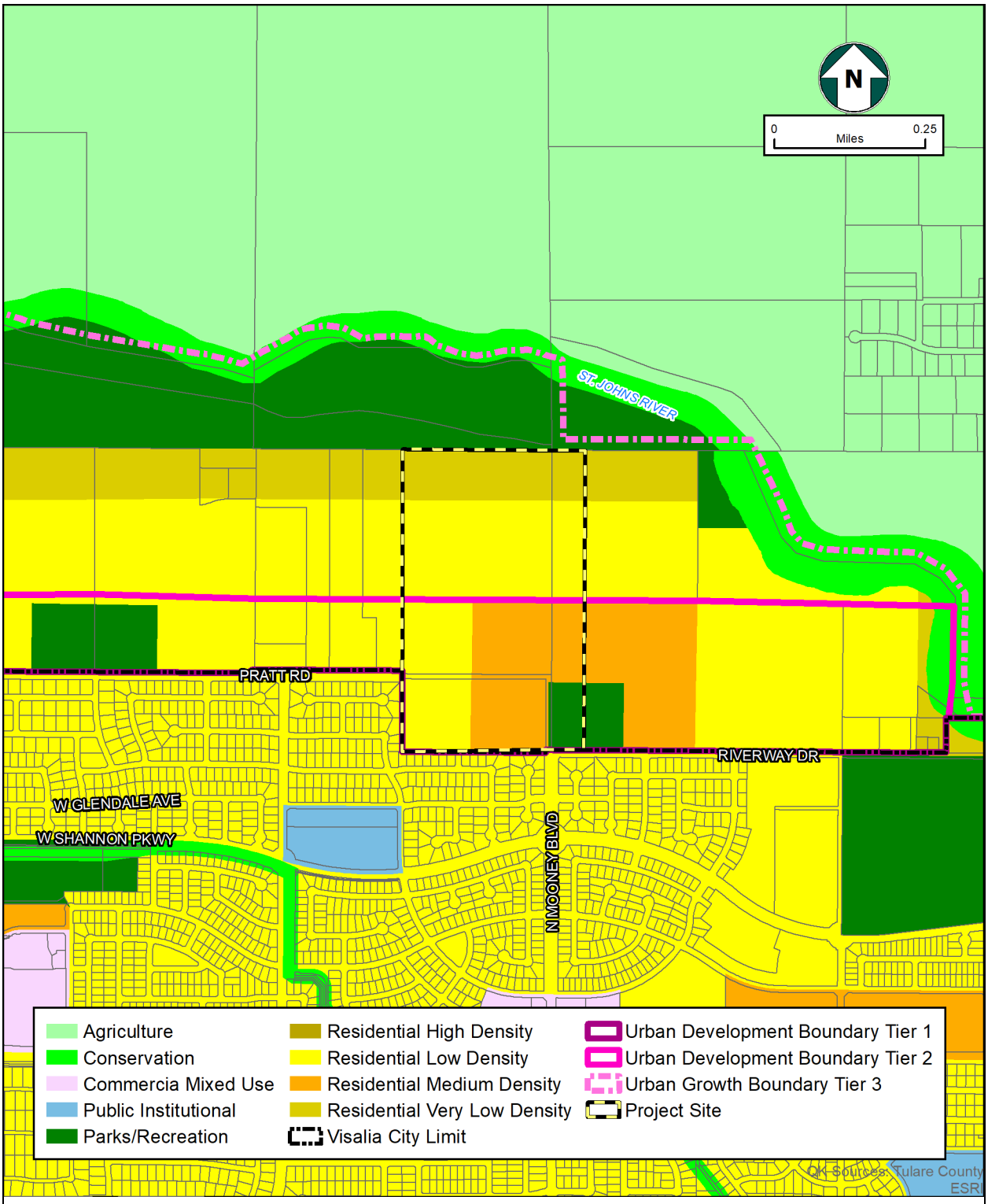

Figure 3-2
Existing General Plan Land Use

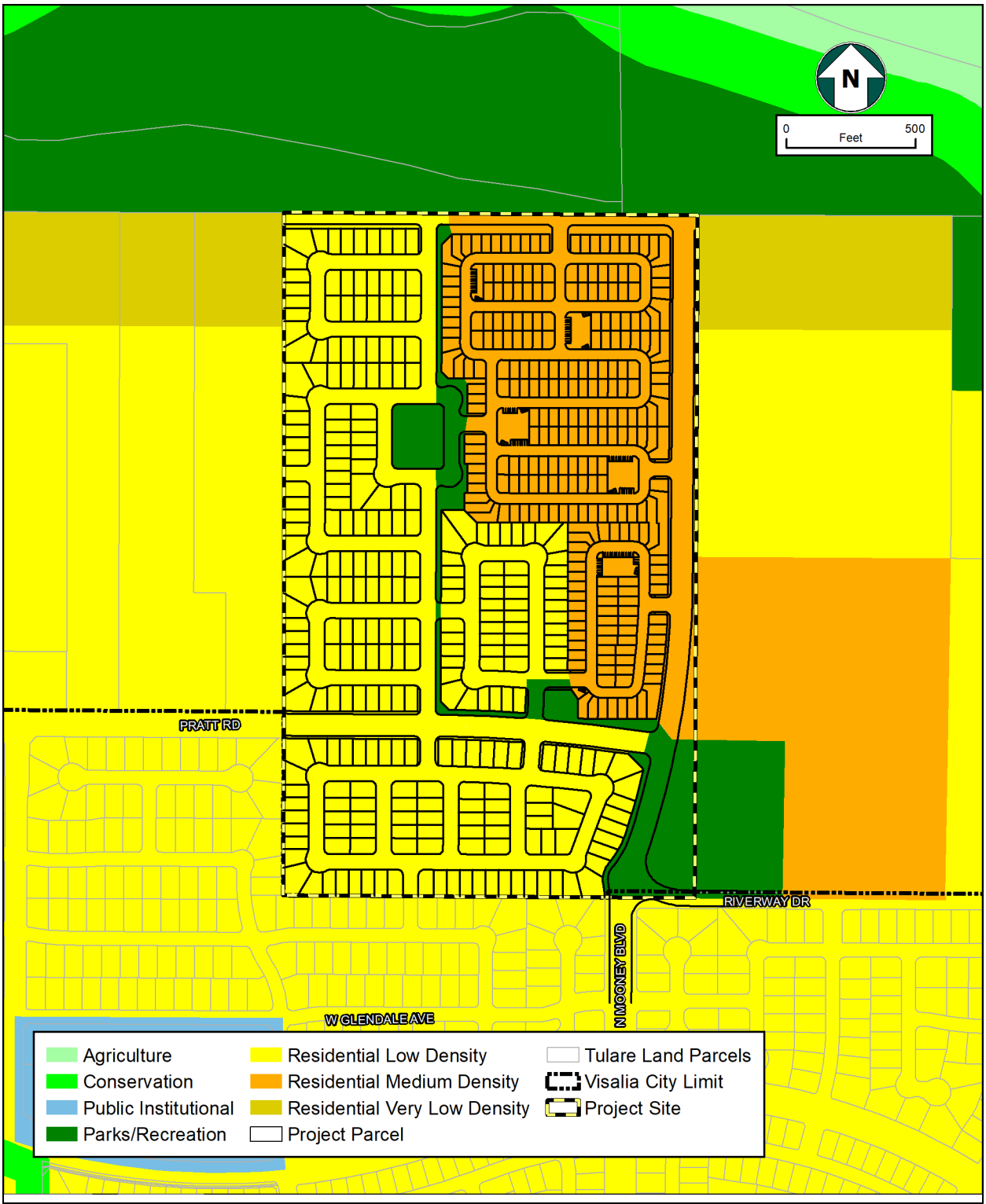

Figure 3-3
Proposed General Plan Land Use

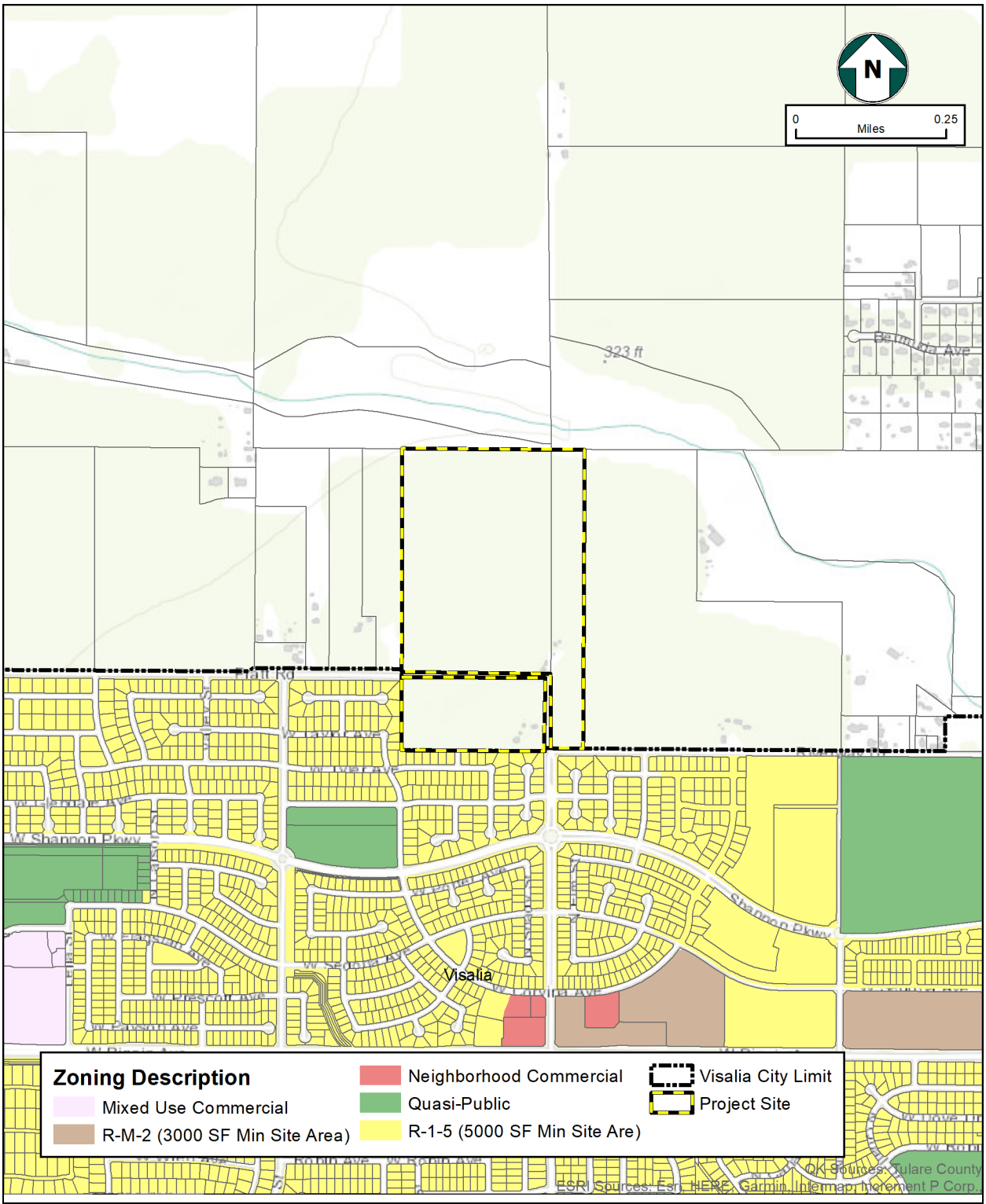

Figure 3-4
Existing Zoning Designation

Figure 3-5
Proposed Zoning Designation

3.2 - Environmental Factors Potentially Affected

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

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

3.3 - Determination

On the basis of this initial evaluation:

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

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

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

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

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

Signature — Date: July 18, 2023

Brandon Smith — City of Visalia

Printed Name — For

3.4 - Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project 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 offsite as well as onsite, 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 adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. Earlier 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 the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

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

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

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

9. The explanation of each issue should identify:

    a. The significance criteria or threshold, if any, used to evaluate each question.

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

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
3.4.1 - AESTHETICS					
Except as provided in Public Resources Code Section 21099, would the Project:					
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 a state scenic highway?	☐	☐	☐	☒
c.	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d.	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion

Impact #3.4.1a – Would the Project have a substantial adverse effect on a scenic vista?

The Sierra Nevada mountain range is the only natural and visual resource in the Project area. Views of these distant mountains are afforded only during clear conditions due to poor air quality in the Valley. The City of Visalia does not identify views of these features as required to be "protected." The Project will not impact a scenic vista.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

Impact #3.4.1b - Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no listed State scenic highways within or near the City of Visalia, nor are there scenic highways in Tulare County (California Department of Transportation, 2021). The closest eligible scenic highway is a portion of SR 198, approximately 2.5 miles south of the Project site. Further, the Project does not include the removal of trees determined to be scenic or of scenic value, the destruction of rock outcroppings, or the degradation of any historic building. The Project will not result in substantially different development from surrounding land uses. Therefore, the Project will have no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have *no impact*.

Impact #3.4.1c - Would the Project 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?

The area surrounding the Project site consists of urban development, orchards, non-native grassland, and undeveloped land.

The Sierra Nevada provides scenic views to the east, and much of the rural agricultural land surrounding the City is beyond Visalia's jurisdiction. The Project would be visible to passing motorists driving along Mooney Boulevard, Riverway Drive, and other City roads. The Project will change the visual character of the site, but its appearance will be similar in character to the existing residential developments in the vicinity. The Project will be pre-zoned for single- and multi-residential development and, once annexed into the City, will be consistent with the proposed zoning and City General Plan. The development of the Project will be in compliance with the City's Municipal Code and development standards. Therefore, impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.1d - Except as provided in Public Resources Code Section 21099, would the Project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

According to the City's General Plan, the construction of new buildings in the Planning Area may result in nighttime light pollution or daytime glare; however, the General Plan identifies construction impacts as likely to be insignificant (City of Visalia, 2014a).

As in most typical residential areas, homes emit light and glare during the day and evening hours. Development under the proposed General Plan would include indoor and outdoor lighting for safety purposes but would generally not be consistent with the existing urban environment. The increase in street lighting would enhance nighttime security for residents and pedestrians in the area and provide safer driving conditions for motorists along the proposed local streets. The City's General Plan policies outline standards related to light and glare to reduce impacts from new sources of light. The Project street lights will be designed to adhere to these standards. These requirements would substantially reduce potential nuisances from light or glare. The Project will comply with applicable local development standards and would not create new sources of substantial light or glare that would adversely affect day or nighttime views in the area. Therefore, the Project will have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact***.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

3.4.2 - 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:

a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☒	☐	☐
b.	Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?	☐	☐	☐	☒
d.	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

Discussion

Impact #3.4.2a – Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

CEQA uses the California Department of Conservation Division of Land Resource Protection's Farmland Mapping and Monitoring Program (FMMP) categories of "Prime Farmland,"

"Farmland of Statewide Importance," and "Unique Farmland" to define "agricultural land" for the purposes of assessing environmental impacts (PRC Section 21060.1[a]). According to the California Department of Conservation (DOC) Important Farmland Finder, the Project site is designated as Prime Farmland (California Department of Conservation, 2022).

According to the Department of Conservation - FMMP (California Department of Conservation, 2021), 95 acres of the Project site are identified as Prime Farmland. The 95 acres are currently within Tulare County boundaries, and the intent of the Project is to annex the 95 acres into the City boundaries for residential development. Although the Project is within Prime Farmland designation, the property is not under an existing Williamson Act contract. The 95-acre site is not currently used for agricultural cultivation.

The City of Visalia 2030 General Plan has designated the Project site for urban uses under the Urban Growth Development Tier 2 and Tier 3. Implementation of this Project will support the General Plan designation for future urban land use Policy LU-P-21 for residential development. The General Plan established criteria, dependent upon land use type, for when development may advance from the first tier (Tier 1) to subsequent tiers (Tiers 2 and 3), which are contained in Policy LU-P-21 of the General Plan. For residential uses, the threshold is the issuance of permits for 5,850 housing units within Tier 1 since April 1, 2010. The City met the residential permit threshold in July 2021 and now considers development located with Tiers 1 and/or 2 (City of Visalia, 2021).

The General Plan identifies the need for the conversion of agricultural land to urban development. The City has set aside three-tiered areas planned for development, including Prime Farmland areas. The Project is within Tier 2 and Tier 3, which has been deemed as land to be converted from agricultural land to urban development.

The 2014 General Plan Policy LU-P-34 contained a requirement for an Agricultural Mitigation Program to address the conversion of Prime Farmland and Farmland of Statewide Importance within the Tier 2 and Tier 3 growth boundaries. Policy LU-P-34 requires the adoption of this type of program notwithstanding that such a program would not reduce the environmental effects from the loss of such farmland to a level of less than significant. In order to meet the requirements of this policy, the City has prepared an Agricultural Preservation Ordinance applicable to properties within Tier 2 and Tier 3 that requires a 1:1 ratio of agricultural land preserved to agricultural land converted towards urban development. The Ordinance is anticipated to be adopted in May 2023 and must be adopted for other pending entitlements submitted to the City of Visalia that are located within Tier 2 to be developed. The Ordinance will require that an equivalent amount of agricultural land converted be preserved outside the urban development boundary and within the southern San Joaquin Valley, or that a project comply with regulations within the Ordinance that will cause an equivalent amount of agriculture land to be preserved. Additionally, the preserved agricultural land must demonstrate adequate water supply and agricultural zoning. Policy

LU-P-34 notes that such a program shall, to the extent feasible and practicable, be integrated with the agricultural easement programs adopted by Tulare County and nearby cities. The City of Visalia's program shall allow for compliance with the preservation ordinance to be completed by purchase of easements, and that such easements be held by a qualifying entity, such as a local land trust, and require the submission of annual monitoring reports to the City. Prior to the adoption of the Ordinance the Project proponent could mitigate for the loss of agricultural land and begin conversion of agricultural lands by providing verification to the City that it has preserved agricultural land at a 1:1 ratio using easements that meet the requirements identified in Policy LU-P-34 or participation in an agricultural preservation program adopted by another agency within the southern San Joaquin Valley that meet the these requirements for preserving agricultural land.

As this is a requirement for consistency with the General Plan, the Project's compliance is mandatory. Therefore, compliance with General Plan Policy LU-P-34 and implementation of AG-1 will allow the Project to convert Prime Farmland and Farmland of Statewide Importance and preserve offsite farmland outside of the urban development boundaries at an equivalent ratio and result in a less-than-significant impact.

MITIGATION MEASURE(S)

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

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated.***

Impact #3.4.2b – Would the Project conflict with existing zoning for agricultural use or a Williamson Act contract?

According to the Tulare County Assessor, the Project is not subject to a Williamson Act Land Use contract. Therefore, there is no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

Impact #3.4.2c – Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?

The Project site has no forest land or timberland zoning or production related to the Project site. Therefore, there is no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impac***t.

Impact #3.4.2d – Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

See Impacts #3.4.2a-c above. There will be no impact on forest land.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

Impact #3.4.2e – Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

See Impacts #3.4.2a above. There will be a less-than-significant impact related to the conversion of agricultural land to a residential use.

MITIGATION MEASURE(S)

No mitigation is required

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact.***

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

3.4.3 - AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the Project:

a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Discussion

The impact analyses in this section are based on an *Air Quality & Greenhouse Gas Impact Assessment* prepared for the Project (VRPA Technologies, Inc, 2021a), which is included in Appendix B.

Impact #3.4.3a – Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The proposed Project lies within the San Joaquin Valley Air Basin (SJVAB) and is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAB is designated in non-attainment for federal and State air quality standards for ozone, in attainment of federal standards and non-attainment for State standards for PM_{10}, and non-attainment for federal and State standards for $PM_{2.5}$.

The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM_{10} Maintenance Plan, and 2012 $PM_{2.5}$ Plan to achieve federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Inconsistency with any of the plans would be considered a cumulatively adverse air quality impact. The Project is consistent with the currently adopted General Plan for the City. Therefore, the Project is consistent with the growth assumptions used in the 2016 and 2013 Ozone Plan, 2007 PM_{10} Maintenance Plan, and 2012 $PM_{2.5}$ Plan (VRPA Technologies, Inc, 2021a).

The primary way of determining consistency with the air quality plans (AQPs) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As California law requires, city and county general plans contain a land use element that details the types and quantities of land uses that the city or county estimates will be needed for future growth and designate locations for land uses to regulate growth. Tulare County Association of Governments (TCAG) uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then vehicle miles traveled (VMT), which are then provided to San Joaquin Valley Air Pollution Control District (SJVAPCD) to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The Project would be consistent with the General Plan upon preparation and approval of a General Plan Amendment according to General Plan Policy LU-P-24, AQ-P-9, and AQ-P-2, which addresses the development of project sites located within the Urban Boundary and are currently zoned agricultural.

Therefore, the Project would be consistent with the City's anticipated population growth and VMT applied in the plan and the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct the implementation of any air quality plans. Therefore, the impacts of the Project would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.3b – Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard?

The SJVAPCD has established thresholds of significance for determining environmental significance, which are provided in Table 3.4.3-1 below. Project-specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or State ambient air quality standards. It should be noted that a project is not characterized as cumulatively insignificant when project emissions fall below thresholds of significance.

Table 3.4.3-1
SJVAPCD Pollutant Thresholds of Significance

Criteria Pollutant	Significance Level	
	Construction (tons/year)	Operational (tons/year)
CO	100 tons/yr	100
NOx	10	10
ROG	10	10
SOx	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15

(SJVAPCD, 2015)

Short-Term Impacts

The annual emissions from the Project's construction phase will be less than the applicable SJVAPCD emission thresholds for criteria pollutants, as shown in Table 3.4.3-2 below. Therefore, construction emissions associated with the Project are considered less than significant.

Table 3.4.3-2
Project Construction Emissions

Pollutant	CO	NOx	ROG	SOx	PM_{10}	$PM_{2.5}$	CO_2e
Construction Emissions	10.18	11.36	10.62	0.02	2.87	1.44	2037.37
Project Emissions (Phased over 3.5 years)	2.91	3.25	3.03	0.005	0.82	0.41	582.11
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Long-Term Impacts

Emissions from long-term operations generally represent a project's most substantial air quality impact. Long-term emissions from the Project are generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment. Table 3.4.3-3 below summarizes the Project's operational impacts by criteria pollutants.

Table 3.4.3-3
Project Operational Emissions (tons/year)

Pollutant	CO	NO_x	ROG	SOx	PM_{10}	$PM_{2.5}$	CO_2e
Project Operational Emissions	19.09	8.10	6.41	0.08	2.83	1.63	9842.1
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Results from Table 3.4.3-3 indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore,

operational emissions associated with the Project are considered less than significant. Results of the analysis show that emissions generated from the construction and operation of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, the Project will have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.3c – Would the Project expose sensitive receptors to substantial pollutant concentrations?

From a health risk perspective, the proposed Project is a "Type B" project in that it may potentially place sensitive receptors in the vicinity of existing sources. Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. The Shannon Ranch Elementary School is approximately 550 feet southwest, and Riverway Elementary School is approximately 2,500 feet southeast of the Project site. The nearest hospital, Kaweah Health Medical Center, is approximately 2.6 miles southeast of the Project site. The nearest nursing home, Quail Park at Shannon Ranch, is approximately 3,000 feet southwest of the Project site. There are two at-home daycares within 3,000 feet of the Project site and one preschool approximately 4,400 feet west of the Project site. The Project will be developed adjacent to existing residential subdivisions directly to the south of the Project site.

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust and exhaust pollutants generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth-moving activities comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture. Exhaust pollutants are the non-useable gaseous waste products produced during the combustion process. Engine exhaust contains CO, HC, and NOx pollutants that are harmful to the environment.

Emissions from long-term operations generally represent a project's most substantial air quality impact. Long-term emissions from the Project are generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment. As noted in Table 3.4.3-3, the Project's operational impacts annual operational

emissions will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore, operational emissions associated with the Project are considered less than significant.

The screening-level analysis for the Project shows that TACs are not a concern based on the recommendations provided in Table 3.4.3-4. An evaluation of nearby land uses considering California Air Resources Board's (CARB) Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 3.4.3-4 shows that the Project is located more than 3,000 feet away from SR 198. Therefore, TACs from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TACs that would have a significant impact on the environment or adjacent sensitive receptors. Therefore, no mitigation measures are required, and impacts are less than significant.

Table 3.4.3-4
Recommendations on Siting New Sensitive Land Uses Such As Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities*

Source Category	Advisory Recommendations
Freeways and High-Traffic Roads	Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Gasoline Dispensing Facilities	Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities.

*Notes
- These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality-of-life issues.
- Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
- A summary of the basis for the distance recommendations can be found in the ARB Handbook: Air Quality and Land Use Handbook: A Community Health Perspective.

(VRPA Technologies, Inc, 2021a)

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.3d – Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- Generators – projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate.
- Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influence odor emissions' potential significance. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 3.4.3-5, along with a reasonable distance from the source within which the degree of odors could possibly be significant. None of the facilities shown in Table 3.4.3-5 are located within the vicinity of the Project. Therefore, no mitigation is needed.

Table 3.4.3-5
Screening Levels for Potential Odor Sources

Type of Facility	Distance
Wastewater Treatment Facility	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Composting Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g., auto body shops)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Table 3.4.3-3 shows that operational emissions will be less than the SJVAPCD level of significant thresholds. The Project is not within SJVACPD potential odor sources shown in Table 3.4.3-5. Long-term potential odors in the area would be limited to vehicular and lawn equipment emissions once the Project site is operational. Therefore the Project will have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact.*

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

3.4.4 - BIOLOGICAL RESOURCES

Would the Project:

a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c.	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion

The impact analysis in this section is based on a Biological Analysis Report that was prepared for the Project (QK, 2021), included as Appendix C.

Impact #3.4.4a – Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Project activities have the potential to affect biological resources. A reconnaissance survey of the Project and a 250-foot buffer (Biological Survey Area, or BSA), where feasible, was conducted on May 22, 2020. The survey consisted of walking meandering pedestrian transects throughout the BSA. A portion of the buffer was inaccessible because it overlapped with private residential and industrial properties. Those areas were surveyed visually with binoculars to gather a representative inventory of the plant and wildlife species present.

Reviews of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (California Department of Fish and Wildlife, 2021), the California Native Plant Society's Rare Plant Program Inventory (California Native Plant Society, 2021), and the United States Fish and Wildlife Service's Information for Planning and Consultation online tool (US Fish and Wildlife Service, 2021) were conducted to identify special-status plant and wildlife species with the potential to occur within the Project and in the vicinity of the Project (the Visalia 7.5" USGS quadrangle, within which the Project is situated, and the surrounding eight quadrangles). Information regarding the presence of Critical Habitat in the Project vicinity was obtained from the United States Fish and Wildlife Service's Critical Habitat Mapper database (USFWS, 2021b). The results of the database inquiries were reviewed to evaluate the potential for the occurrence of special-status species and other sensitive biological resources known to occur on or near the Project site prior to conducting the biological reconnaissance survey.

An assessment of the potential for federal- and State-listed and special-status plant and wildlife species to occur on and near the Project site and an assessment for migratory birds and raptors to nest on and near the Project site was conducted. No special-status species or signs of them were observed during the survey. There were no special-status plant species identified within the Project site or survey buffer, and based on historical disturbance and current conditions, none are expected to occur. However, three special-status animal species were determined to have the potential to occur onsite and potentially be affected by the Project. The literature review identified 32 special-status animal species known or with the potential to occur in the vicinity of the Project. Of those, three were determined to have the potential to occur onsite.

Burrowing Owl

There is no evidence that the burrowing owl is present within the BSA. California ground squirrel burrows were observed along the western boundary of the BSA, which could be used by a burrowing owl. The agricultural and urban habitat types provide some foraging habitat, but there is no evidence that those areas are used for foraging. This species is known to be present in the region year-round, and it is possible for a transient burrowing owl to occur onsite at any time. Direct impacts to burrowing owl could occur if there is an active burrow or transient individual within the BSA during the period of construction activities.

Construction activities could result in crushing or destroying a burrow with a burrowing owl inside. Noise and vibration from the Project construction activities could alter the daily behaviors of individual owls and affect foraging activities or the rearing of young. Implementation of Measures BIO-1 through BIO-3 and BIO-7, listed below, would reduce any impacts to the species to less-than-significant levels.

Swainson's Hawk

Swainson's hawks were observed foraging within and near the BSA during the survey. The Project site does not contain suitable nesting habitat for Swainson's hawk, but the site may be used by Swainson's hawks for foraging. The St. Johns River and the adjacent cropland, located to the north, east, and west, provide suitable nesting and foraging habitat. Two unoccupied stick nests were observed in oak trees adjacent to the BSA.

The Project site lies within an expansive area of agricultural habitat, similar to what occurs on the site. The loss of a small area such as this, with a very low prey base and low potential to provide substantial foraging opportunities, does not warrant the acquisition or preservation of compensatory habitat. Direct impacts to nesting and foraging habitat for the species are reduced to below significant levels.

Impacts to nesting Swainson's hawks could occur during construction due to noise, vibration, and the presence of construction workers, which may alter normal behaviors and possibly lead to nest failure. Implementation of Mitigation Measures (MM) BIO-4, MM BIO-5, and MM BIO-7 would reduce any impacts to the species to below significant levels.

American Badger

There is no positive evidence that the American badger is present within the BSA, but potential denning and foraging habitat exists to the north of the Project boundary. Because this species is highly mobile, this species may be present on the site as a transient forager. Direct impacts could include injury or death of individuals and entrapment in trenches or pipes. Noise, vibration, and the presence of construction workers could alter normal behaviors if badgers are present, which could affect reproductive success. Increased human presence at the new residential homes following Project activities could indirectly impact American badgers by deterring them from denning or foraging in the vicinity of the Project. Implementation of Measures BIO-1 through BIO-3, and BIO-7, listed below, would reduce any impacts to the species to a less-than-significant level.

San Joaquin Kit Fox

There is no evidence that the San Joaquin kit fox is present within the BSA. The BSA and surrounding land are highly developed and provide minimal denning and foraging habitat, but the species inhabit the region and adapt to urban environments. Because this species is highly mobile, it may be present from time to time on the BSA as a transient forager or part-time resident. Direct impacts resulting in injury, death, or entrapment in trenches or pipes could occur if a fox travels into the construction area. Construction activities could result in

crushing or destroying a den with a kit fox inside. Noise, vibration, and the presence of construction workers may alter normal behaviors, which could affect reproductive success. Implementation of MM BIO-1 through MM BIO-3 and MM BIO-7 would reduce impacts to the species to a less-than-significant level.

Nesting Birds

The BSA contains suitable habitat for a wide variety of nesting bird species. The St. Johns River corridor and annual grassland would support birds that nest in trees, shrubs, grasses, and man-made structures within the BSA urban habitat. In active cultivation, dryland grain crops and irrigated grain crops would support birds that use these agriculture fields for foraging. One unoccupied stick nest was observed in the abandoned barn located on the southern edge of the Project site, and two unoccupied stick nests were observed in the oak trees located outside of the northern boundary of the BSA. If birds were to nest on or near the Project site, construction-related vibration, noise, dust production, and human presence could alter the normal behaviors of nesting birds in the vicinity of the Project and lead to nest failure. Implementation of MM BIO-1, MM BIO-6, and MM BIO-7 would reduce impacts to these species to below significant levels.

MITIGATION MEASURE(S)

MM BIO-1: Within 14 days of the start of Project activities, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of these species. The pre-activity survey shall include walking transects to identify the presence of burrowing owls and their burrows and American badgers, and San Joaquin kit foxes and their dens. The transects shall be spaced at no greater than 30-foot intervals in order to obtain 100 percent coverage of the Project site and a 250-foot buffer. Areas devoid of habitat incapable of supporting these species would not require surveys. If no evidence of these special-status species is detected, no further action is required.

MM BIO-2: If dens or burrows that could support these species are discovered during the pre-activity survey conducted under Measure BIO-1, avoidance buffers outlined below shall be established. No work shall occur within these buffers unless a qualified biologist approves and monitors the activity.

Burrowing Owl (active burrows)

- Non-breeding season: September 1 – January 31 – 160 feet
- Breeding season: February 1 – August 31 – 250 feet

American Badger and San Joaquin Kit Fox

- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal or pupping den – Contact agencies for further guidance

Any Ecological Sensitive Area (ESA) buffer established shall remain in place until the species has left on its own. Once the species has left, the burrow may be monitored using trail cameras or a tracking medium such as diatomaceous earth once the species has left. If no species are detected for a minimum of three consecutive days/nights, the burrow may be hand excavated under the direct supervision of a qualified biologist. All burrow tunnels must be hand excavated to their terminus or examined before backfilling to ensure no burrowing owls, kit foxes, or other animals are hiding.

Alternatively, burrowing owls can be passively excluded from a non-nest burrow through the installation of one-way doors. Prior to engaging in such passive exclusion activities, an Exclusion Plan shall be prepared following the guidance outlined in the CDFW's Staff Report on Burrowing Owl Mitigation (QK, 2021). The Exclusion Plan shall be submitted to the CDFW for review and approval prior to implementation. Once approved, one-way doors may be installed at non-nest burrows. The doors shall be monitored for a minimum of three days to ensure burrowing owls have left the burrow. The burrow may then be excavated as described above. If at any time during excavation a burrowing owl is detected within the burrow, excavation activities shall immediately cease, and the one-way door reinstalled and monitored until the owl has left the burrow. Hand excavation may then resume. Exclusion efforts shall be documented.

MM BIO-3: The following avoidance and minimization measures shall be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (QK, 2021).

- Project-related vehicles shall observe a daytime speed limit of 20 mph throughout the site in all Project areas, except on County roads and State and federal highways.
- All Project activities shall occur during daylight hours, but if work must be conducted at night, then a night-time construction speed limit of 10 mph shall be established.
- Off-road traffic outside of designated Project areas shall be prohibited.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed.
- Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW shall be contacted before proceeding with the work.
- In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW shall be contacted for guidance.
- All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes and burrowing owls before the pipe is

subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity until the fox has escaped.

- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from a construction or Project site.
- No pets, such as dogs or cats, shall be permitted on the Project site.
- Project-related use of rodenticides and herbicides shall be restricted.
- A representative shall be appointed by the Project proponent, who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative shall be identified during the employee education program, and their name and telephone numbers shall be provided to the USFWS and CDFW.
- Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) shall be recontoured if necessary and revegetated to promote restoration of the area to pre-Project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the Project, but after Project completion, will not be subject to further disturbance and has the potential to be revegetated.
- Any Project personnel who are responsible for inadvertently killing or injuring one of these species shall immediately report the incident to their representative. This representative shall contact the CDFW (and USFWS in the case of San Joaquin kit fox) immediately in the case of a dead, injured, or entrapped San Joaquin kit fox, American badger, or burrowing owl.
- The Sacramento Fish and Wildlife office and CDFW Region 4 office shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project-related activities. The CDFW shall be notified in the case of accidental death to an American badger or western burrowing owl. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.
- New sightings of San Joaquin kit fox, American badger, or burrowing owl shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where a San Joaquin kit fox was observed shall also be provided to the USFWS.

MM BIO-4: If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys shall be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk Technical Advisory Committee (QK, 2021). The surveys shall be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys shall be conducted during at least two survey periods.

If no Swainson's hawk nests are found, no further action is required.

MM BIO-5: If an active Swainson's hawk nest is discovered at any time within 0.5 miles of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to the construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Construction activities shall not occur within 500 feet of an active nest but depending upon conditions at the site, this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist.

MM BIO-6: If Project activities must occur during the nesting season (February 1 to September 15), pre-activity nesting bird surveys shall be conducted within seven days prior to the start of construction at the construction site, plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). If no active nests are found, no further action is required. However, existing nests may become active, and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. If active nests are found during the survey or at any time during the construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer shall remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.

MM BIO-7: Prior to the initiation of construction activities, all personnel shall attend a Worker Environmental Awareness Training program developed by a qualified biologist. The program shall include information on the life histories of special-status species with the potential to occur on the Project, their legal status, the course of action shall these species be encountered onsite, and avoidance and minimization measures to protect these species.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

Impact #3.4.4b – Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Sensitive natural communities are designated by various resource agencies, including the CDFW, USFWS, Bureau of Land Management, U.S. Forest Service, or are designated by local agencies through policies, ordinances, and regulations.

There is no riparian habitat or sensitive natural communities within the Project boundaries, and no protected species were observed during the survey. The St. Johns River and a parkway are directly north of the Project. However, this area will not be impacted by the implementation of the Project. Therefore, the Project's impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.4c – Would the Project have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The United States Army Corps of Engineers (USACE) has regulatory authority over the Clean Water Act (CWA), as provided for by the EPA. The USACE has established specific criteria for the determination of wetlands based on the presence of wetland hydrology, hydric soils, and hydrophilic vegetation. There are no federally protected wetlands or vernal pools that occur within the Project.

Wetlands, streams, reservoirs, sloughs, and ponds typically meet the criteria for federal jurisdiction under Section 404 of the CWA and State jurisdiction under the Porter-Cologne Water Quality Control Act. Streams and ponds typically meet the criteria for State jurisdiction under Section 1602 of the California Fish and Game Code. There are no known or observed water features on the Project site.

A review of the National Hydrography Dataset (NHD) and National Wetlands Inventory (NWI) identified water or wetland features in the vicinity of the Project site; however, none were observed within the Project site. An irrigation canal located along the southeastern boundary of the Project site is a branching man-made irrigation canal and will not be impacted by the Project. The St. Johns River is located directly north of the Project site, and a small portion of the floodplain is within the BSA. However, the Project footprint is outside of the St. Johns River floodplain, and the Project would not impact this feature. There are no

other identified water features, federal waters, or wetlands located on or near the Project. Therefore, the Project's impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.4d – Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Wildlife movement corridors also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. Wildlife movement corridors can be large tracts of land that connect regionally important habitats that support wildlife in general, such as stop-over habitat that supports migrating birds or large contiguous natural habitats that support animals with very large home ranges (e.g., coyotes, mule deer). They can also be small-scale movement corridors, such as riparian zones, that provide connectivity and cover to support the movement at a local scale.

The Project is not located within any identified wildlife movement corridors identified by the California Essential Habitat Connectivity Project. The nearest wildlife movement corridor is located approximately 5.5 miles northwest of the BSA. The St. Johns River and adjoining native habitat area are likely to be used as a local travel corridor for many species of wildlife. However, the Project does not encroach into that corridor, and significant impacts to that corridor are not anticipated. Therefore, the Project's impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.4e – Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The City of Visalia General Plan contains policies aimed at the preservation of biological resources and promotes coordination with federal and State resource agencies. These policies are listed in Appendix A of the BAR prepared for the Project (QK, 2021). The General Plan outlines a work plan with implementation measures to uphold these policies, including

biological resource review for proposed projects and the development of mitigation measures for these projects. The City of Visalia Valley Oak Ordinance establishes policies for the care, trimming, and removal of Valley Oaks. However, there are no Valley Oaks on the Project site, and no trees will be removed. The Project is consistent with the City of Visalia General Plan, the Valley Oak Tree Ordinance, or any other local ordinances related to biological resources. Therefore, there are no impacts with respect to local policies and ordinances, and no measures are warranted.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

Impact #3.4.4f – Would the Project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan?

The Project is located within an area covered by the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (HCP). That HCP only applies to the maintenance and operations of PG&E facilities and does not apply to this Project. There are no other pertinent HCP or NCCP within the Project area. The Project would have no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

3.4.5 - CULTURAL RESOURCES

Would the Project:

a.	Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?	☐	☒	☐	☐
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	☐	☒	☐	☐
c.	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

The discussion below is based on the Cultural Resources Technical Memo completed for the Project, attached as Appendix D (QK, 2020).

Discussion

Impact #3.4.5a – Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

The City maintains a Local Register of Historic Structures within its General Plan, which features approximately 340 buildings, including residential, commercial, civic, and religious structures. These are classified into three categories: exceptional, focus, and background structures. Exceptional structures or sites are those having preeminent historical, cultural, architectural, archaeological, or aesthetic significance, considered candidates for nomination to the National Register of Historic Places. Currently, four of these buildings have national and State historic designations: the Bank of Italy Building on East Main Street; the U.S. Post Office on West Acequia Avenue; Hyde House on South Court Street; and the Pioneer statue in Mooney Grove Park. None of these are located near the Project, and therefore, there would be no impact.

A cultural resources records search (RS #20-211) was conducted at the Southern San Joaquin Valley Information Center, CSU Bakersfield, to determine whether the proposed Project would impact cultural resources. The records search covered an area within one-half mile of the Project and included a review of the National Register of Historic Places, California Points of Historical Interest, California Registry of Historic Resources, California Historical Landmarks, California State Historic Resources Inventory, and a review of cultural resource reports on file.

A Sacred Lands File request was also submitted to the Native American Heritage Commission. A response dated May 26, 2020, indicates negative results.

Based on the results of cultural records search findings and the lack of historical or archaeological resources previously identified within a half-mile radius of the proposed Project, the potential to encounter subsurface cultural, historical, or archaeological resources is minimal.

Although there is no obvious evidence of historical or archaeological resources on the Project site, there is the potential during construction for the discovery of cultural resources. Grading and trenching and other ground-disturbing actions have the potential to damage or destroy these previously unidentified and potentially significant cultural resources within the Project area, including historical resources. Although unlikely, the disturbance of any deposits that can provide significant cultural data would be considered a significant impact under CEQA. However, the implementation of MM CUL-1 and MM CUL-2 would reduce potential impacts to cultural resources to less-than-significant levels.

MITIGATION MEASURE(S)

MM CUL-1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified archaeologist can evaluate the find and make recommendations. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, fire-affected rock, and historic resources such as glass, metal, wood, brick, or structural remnants. Implementation of the mitigation measure below would ensure that the proposed Project would not cause a substantial adverse change in the significance of a historical resource.

MM CUL-2: Prior to any ground disturbance, if the City of Visalia receives a request from a Native American tribal group, a surface inspection of the site shall be conducted by a tribal monitor. The tribal staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, including information on potential cultural material, finds, and any excavation contractor, which will include information on potential cultural material finds, and the procedures to be enacted if resources are found. The tribal cultural staff shall monitor the site during grading activities.

Prior to any ground disturbance, the applicant shall offer the tribe the opportunity to provide a Native American Monitor during ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

Impact #3.4.5b – Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

See Impact #3.4.5a above. Based on the results of cultural records search findings and the lack of historical or archaeological resources previously identified within a half-mile radius of the proposed Project, the potential to encounter subsurface cultural resources is minimal. However, there is still a possibility that historical or archaeological materials may be exposed during construction. Grading and trenching and other ground-disturbing actions have the potential to damage or destroy these previously unidentified and potentially significant cultural resources within the Project area, including historical or archaeological resources. To reduce the Project's potential impacts on cultural resources, implementation of CUL-1 and CUL-2 would reduce impacts to less-than-significant levels.

MITIGATION MEASURE(S)

Implementation of Mitigation Measure MM CUL-1 and MM CUL-2.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

Impact #3.4.5c – Would the Project disturb any human remains, including those interred outside of formal cemeteries?

There are no known cemeteries or burials on or near the Project. Although unlikely, subsurface construction activities, such as trenching and grading, associated with the proposed Project could potentially disturb previously undiscovered human burial sites. Accordingly, this is a potentially significant impact. However, considered unlikely subsurface construction activities could cause a potentially significant impact to previously undiscovered human burial sites. The cultural resources and Sacred Lands File records searches did not indicate the presence of human remains, burials, or cemeteries within or in the vicinity of the Project site. No human remains have been discovered at the Project site, and no burials or cemeteries are known to occur within the area of the site. However, construction would involve earth-disturbing activities, and it is still possible that human remains may be discovered, possibly in association with archaeological sites. Implementation of the below mitigation measure would ensure that the proposed Project would not directly or indirectly destroy previously unknown human remains. It is unlikely that the proposed Project would disturb any known human remains, including those interred outside of formal cemeteries. However, with the implementation of MM CUL-3, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

MM CUL-3: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of

communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of the discovery of human remains, at the direction of the county coroner.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

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

Discussion

The analysis is based on data from the Air Quality & Greenhouse Gas Impact Assessment prepared for the Project (VRPA Technologies, Inc, 2021a), which is found in Appendix B.

Impact #3.4.6a – Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation?

CEQA Guidelines require consideration of the potentially significant energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient, and unnecessary" energy usage (Public Resources Code Section 21100, subdivision [b][3]). The means to conserve energy include decreasing overall energy consumption, decreasing reliance on natural gas and oil, and increasing reliance on renewable energy sources.

Construction

ON-ROAD VEHICLES (CONSTRUCTION)

Due to the nature of the Project, construction of the Project would be limited to the Project site and would only generate onsite (off-road) construction trips and would not contribute to on-road vehicle trips during Project construction (from construction workers and vendors).

OFF-ROAD VEHICLES (CONSTRUCTION)

Off-road construction vehicles would use diesel fuel during the proposed Project's construction phase. Based on the total amount of CO_2 emissions expected to be generated by the proposed Project (as provided by the CalEEMod output) and a CO_2 to diesel fuel conversion factor (provided by the U.S. Environmental Protection Agency), the proposed

Project would use a total of approximately 22,981 gallons of diesel fuel for off-road construction vehicles for the entirety of the Project's construction. A non-exhaustive list of constructive off-road vehicles expected to be used during the proposed Project's construction phase includes cranes, forklifts, generator sets, tractors, excavators, and dozers.

Short-term energy use during the construction phase would be in the form of fuel consumption (e.g., gasoline and diesel fuel) to operate heavy equipment, light-duty vehicles, and machinery. Energy demand during the construction phase would be the result of transportation of materials, construction equipment, and construction worker vehicle trips. Compliance with local and regional regulations during construction would minimize fuel consumption. Energy-saving strategies will be implemented where possible to further reduce the Project's energy consumption during the construction phase. Strategies being implemented include those recommended by the CARB that may reduce the Project's energy consumption, including diesel anti-idling measures, light-duty vehicle technology, alternative fuels such as biodiesel blends and ethanol, and heavy-duty vehicle design measures to reduce energy consumption.

Operations

According to Appendix A: Calculation Details for CalEEMod, CalEEMod uses the California Commercial End-Use Survey (CEUS) database to develop energy intensity values for non-residential buildings. The energy use from residential land uses is calculated based on the Residential Appliance Saturation Survey (RASS). Similar to CEUS, this is a comprehensive energy use assessment that includes the end-use for various climate zones in California. As shown in Table 3.4.6-1, the Project would use approximately 1.78186e+007 kBTU (17,818,600) of natural gas per year and approximately 5,226,520 kWh of electricity per year.

Table 3.4.6-1
Project Operational Natural Gas and Electricity Usage

Emissions[a]	Natural Gas (kBTU/year)	Electricity (kWh/year)
Single-Family Housing	17,818,600	5,226,520

Source: CalEEMod (V.2016.3.1).

The long-term operation of the proposed includes electricity and natural gas service to power internal and exterior building lighting and heating and cooling systems.

ELECTRICITY AND NATURAL GAS

Electricity and natural gas used by the proposed Project would be used primarily to power each residential dwelling unit. Total annual electricity (kWh) and natural gas (kBTU) usage associated with the operation of the proposed Project are shown in Table 3.4.6-1 (as provided by CalEEMod).

The Project would be required to comply with California's Title 24 energy efficiency requirements and other applicable City development standards. That would include the installation of solar panels on each home's rooftop, which would provide energy from a renewable power source to offset energy generated by fossil fuel-run. The Project will be required to comply with all applicable standards and building codes included in the 2019 California Green Building Standards Code regarding the use of energy-efficient appliances and lighting, low-flow toilets and faucets, drip irrigation, etc. Therefore, the Project will have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.6b – Would the Project Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

See Impact #3.4.6a above. The construction and operation of the Project would comply with State and local plans and regulations. The proposed Project would be in compliance with all applicable federal, State, and local regulations regulating energy usage. The Project will comply with Title 24 Energy Efficiency Standards and CalGreen Code requirements for solar-ready roofs, electric vehicle charging, and water conservation. Energy would also be indirectly conserved through water-efficient landscaping requirements consistent with the City Landscaping Ordinance.

Stringent solid waste recycling requirements applicable to Project construction and operation would reduce energy consumed in solid waste disposal. In summary, the Project will implement all mandatory federal, State, and local conservation measures, project design features, and voluntary energy conservation measures to reduce energy demands further. Therefore, the Project will not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Project-related impacts are less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
3.4.7 - GEOLOGY AND SOILS				
Would the Project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
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 offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

The discussion below is based on the Geotechnical Engineering Investigation (Consolidated Testing Laboratories, Inc, 2020) completed for the Project, which is also attached as Appendix E.

Discussion

Impact #3.4.7a(i) – Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

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

There are no designated Alquist-Priolo zones in the City of Visalia, according to the General Plan Safety Element (City of Visalia, 2014a).

All new structures are required to conform to current seismic protection standards in the California Building Code. By adhering to the 2019 California Building Code and City development standards, the Project will have a less-than-significant impact of endangering people and structures associated with earthquakes.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact***.

Impact #3.4.7a(ii) – Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic groundshaking?

See discussion of Impact #3.4.7a(i) above.

Secondary hazards from earthquakes include ground shaking/rupture. Since there are no known faults within the immediate area, ground shaking/rupture from surface faulting, seiches, and landslides would not be hazards in the area. While such seismic shaking would

be less severe from an earthquake that originates at a greater distance from the Project site, the side effects could potentially be damaging to residential buildings and supporting infrastructure. The Project is required to design residential buildings and associated infrastructure to withstand substantial ground shaking in accordance with all applicable State law and applicable codes included in the California Building Code (CBC) Title 24 for earthquake construction standards and building standards code including those relating to soil characteristics (California Building Standards Commission, 2019). The Project will adhere to all applicable local and State regulations to reduce any potentially significant impacts to structures resulting from strong seismic ground shaking at the Project site. Therefore, Project impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.7a(iii) – Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

According to the General Plan, no specific liquefaction hazard areas have been identified in the City; however, the potential for liquefaction is recognized through the San Joaquin Valley in locations where the water table is high. Ground shaking is considered the greatest seismic hazard in the City. Low levels of shaking, with less frequency, would be expected to damage weaker masonry buildings, and very infrequent, large earthquakes could cause strong shaking. Given the distance to major faults, the region is considered to have a relatively low ground shaking hazard.

Adherence to existing regulations, in addition to the General Plan and Building Code policies, would reduce this potential impact to less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.7a(iv) – Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides.

The Project site has very little elevation change; therefore, the risk of landslides is minimal (Consolidated Testing Laboratories, Inc, 2020).

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.7b – Would the Project result in substantial soil erosion or the loss of topsoil?

The subsurface soils encountered onsite generally consist of sandy silt, clayey sand, sandy clay, and sand. The upper surface is generally loose to medium-dense sandy silt, clayey sand, and sandy clay to four feet below grade (BG), underlain by medium-dense silty sand to eight feet BG. The silty sand is underlain by sand to 16.5 feet BG, the maximum depth explored (Consolidated Testing Laboratories, Inc, 2020).

Expansive was encountered within the near-surface soils at the site. The expansion index test results ranged from 12 to 13 or very low; therefore, special mitigation is not required. The result of additional laboratory tests indicated that the near-surface soils are collapse-prone. The soils obtained from the boring had a volume reduction range of 2.3 to 6.4 percent when the soils were saturated. Therefore, there is a moderate potential for settlement from soil collapse. The subject site is not near any active known fault, and surface rupture does not apply. The site does not have any significant slope. The potential for slope instability is low.

Construction activities associated with the proposed Project will disturb surface vegetation and soils and expose these disturbed areas to erosion by wind and water. To reduce the potential for soil erosion and loss of topsoil during construction, the Project would comply with the National Pollutant Discharge Elimination System (NPDES) General Construction Permit from the State of California Central Valley Regional Water Quality Control Board (RWQCB) during construction. Under the NPDES, the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) are required for construction activities that would disturb an area of one acre or more. An SWPPP must identify potential sources of erosion or sedimentation and identify and implement best management practices (BMPs) that ensure reduced erosion. If an SWPPP was not required, the Project would implement the standard BMPs. Typical BMPs intended to control erosion include sandbags, silt fencing, street sweeping, etc. Mitigation Measure GEO-1 requires the approval of an SWPPP to comply

with the NPDES General Construction Permit, if appropriate. Compliance with local grading and erosion control ordinances would also help minimize adverse effects associated with erosion and sedimentation. Any stockpiled soils would be watered and/or covered to prevent loss due to wind erosion as part of the SWPPP during construction.

The Project will comply with all the City's grading requirements outlined in Title 24 and Appendix J of the California Building Code. The Project is not expected to result in substantial soil erosion or the loss of topsoil with the incorporation of Mitigation Measure MM GEO-1.

Once constructed, the Project will have both impermeable surfaces and permeable surfaces. Impermeable surfaces would include existing roadways, driveways, and structures. Permeable surfaces would include open areas of the site and any landscaped areas. Overall, the development of the Project would not result in conditions where substantial surface soils would be exposed to wind and water erosion.

MITIGATION MEASURE(S)

MM GEO-1: Prior to issuing of grading or building permits, if required, the Project applicant shall submit to the Lead Agency (1) the approved Storm Water Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board. The requirements of the SWPPP and NPDES shall be incorporated into design specifications and construction contracts. Recommended best management practices for the construction phase may include the following:

- Stockpiling and disposing of demolition debris, concrete, and soil properly.
- Protecting existing storm drain inlets and stabilizing disturbed areas.
- Implementing erosion controls.
- Properly managing construction materials.
- Managing waste, aggressively controlling litter, and implementing sediment controls.

Evidence of the approved SWPPP shall be submitted to the Lead Agency.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

Impact #3.4.7c – Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?

See discussion in Impact #3.4.7a(iii) and 3.4.7a(iv) above.

There are no slopes on or near the property, and the Project would not expose the people or structures to significant risks from landslides.

The proposed Project will comply with all City and State regulations pertaining to construction, including the Visalia Municipal Code. In addition, the California Geologic Society, in implementing the CA Seismic Hazards Mapping Program, has not identified any seismically induced landslide hazard zones in Visalia(City of Visalia, 2014a). Therefore, complying with the existing regulatory framework would be adequate to reduce any potential impacts to less-than-significant levels.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.7d – Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

See discussion in Impact #3.4.7a(iii) and 3.4.7a(iv) above.

There are no slopes on or near the property, and the Project would not expose the people or structures to significant risks from landslides.

The Project will comply with all City and State regulations pertaining to construction, including the Visalia Municipal Code. In addition, the California Geologic Society, in implementing the CA Seismic Hazards Mapping Program, has not identified any seismically induced landslide hazard zones in Visalia. Therefore, complying with the existing regulatory framework would be adequate to reduce any potential impacts to less-than-significant levels.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.7e – Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

The proposed Project would not include septic tanks or alternative wastewater disposal systems. The dwelling units will be required to connect to the existing City sewer system. Therefore, there would be no impact related to the use of septic systems.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have *no impact*.

Impact #3.4.7f – Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological resources are the mineralized (fossilized) remains of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and leaves are found in geologic deposits (rock formations) where they were originally buried. Fossil remains are considered to be important as they provide indicators of the earth's chronology and history. These resources are afforded protection under CEQA and are considered to be limited and nonrenewable, and they provide invaluable scientific and educational data.

The Project site does not have any known paleontological resources or unique geologic features. There is no evidence that any type of paleontological or unique geologic features exists on the Project site. Nevertheless, MM GEO-2 will be imposed as there is some possibility that a buried feature may exist in the area and be obscured by vegetation, fill, or other activities, leaving no surface evidence. Implementation of MM GEO-2 will reduce impacts to paleontological resources to less than significant levels.

MITIGATION MEASURE(S)

MM GEO-2: Prior to any ground-disturbing activities, the Project owner shall develop and implement a Paleontological Worker Education and Awareness Program. If paleontological resources are discovered during ground-disturbing activities (e.g., during Project construction or decommissioning), all earthwork or other types of ground disturbance within 50 feet of the find shall stop immediately until a qualified professional paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) can assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue or recommend salvage and recovery of the fossil. The paleontologist may also propose modifications to the stop-work radius based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage are required, recommendations will be consistent with the Society of Vertebrate Paleontology standards that are current as of the discovery and with currently accepted scientific practice.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact with mitigation incorporated*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

3.4.8 - GREENHOUSE GAS EMISSIONS

Would the Project:

a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b.	Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The impact analyses in this section are based on an Air Quality & Greenhouse Impact Assessment (VRPA Technologies, Inc, 2021a), which is attached as Appendix B.

Discussion

Impact #3.4.8a – Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The SJVAPCD acknowledges the current absence of numerical thresholds and recommends a tiered approach to establish the significance of the GHG impacts on the environment.

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less-than-significant individual and cumulative impact for GHG emissions.

ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, it would be required to implement Best Performance Standards (BPS).

iii. If a project is not implementing BPS, it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

The South Coast Air Quality Management District (SCAQMD) guidance identifies a threshold of 10,000 $MTCO_2eq.$/year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Although the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table 3.4.8-1 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is less than the threshold identified by the SCAQMD.

Table 3.4.8-1
Project Operational Greenhouse Gas Emissions

Summary Report	CO_2e
Project operation Emissions Per Year	9,910 MT/yr

The data also indicates that the resulting permanent greenhouse gas increases related to Project operations would be within the greenhouse gas increases analyzed in the City of Visalia General Plan EIR (City of Visalia, 2014b), so there would be no increase in severity to the previously identified greenhouse gas impacts. Implementation of the Project will not result in Project-specific or site-specific significant adverse impacts from greenhouse gas emissions within the Project study area. Therefore, no mitigation is required, and impacts are less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.8b – Would the Project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011, to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

Senate Bill (SB) 375 aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. CARB has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region 2020 and 2035.

TCAG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Tulare County region would achieve the prescribed emissions targets. For the TCAG region, CARB set targets at a 13 percent per capita decrease in 2020 and a 16 percent per capita decrease in 2035 from the base year of 2005.

The Project is consistent with the adopted 2030 General Plan and the adopted 2018 RTP/SCS. Therefore, it is consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in

the applicable AQP. The yearly GHG emissions generated by the Project (Table 3.4.8-1) are less than the threshold identified by the SCAQMD (see the discussion for Impact #3.4.3b above).

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit. Below is a list of applicable strategies in the Scoping Plan and the Project's consistency with those strategies.

- California Light-Duty Vehicle GHG Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicles, alternative and renewable fuel, and vehicle technology programs for long-term climate change goals.

- The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to light-duty vehicles that would access the residential development. The Project would not conflict with or obstruct this reduction measure.

- Energy Efficiency – Pursuit of a comparable investment in energy efficiency from all retail providers of electricity in California. Maximize energy efficiency building and appliance standards.

- The Project is consistent with this reduction measure. Though this measure applies to the State to increase its energy standards, the Project would comply with this measure through existing regulation. The Project would not conflict with or obstruct this reduction measure.

- Low Carbon Fuel – Development and adoption of the low carbon fuel standard.

- The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to the fuel used by vehicles that would access the residential development. The Project would not conflict with or obstruct this reduction measure.

The Project furthers the achievement of the County's greenhouse gas reduction goals. Based on the assessment above, the Project will not conflict with an applicable plan, policy, or regulation adopted to reduce the emissions of greenhouse gases. Therefore, any impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact***.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

3.4.9 - HAZARDS AND HAZARDOUS MATERIALS

Would the Project:

a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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 involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e.	For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?	☐	☐	☐	☒
f.	Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g.	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

The discussion below is based on available public databases and a Phase I Environmental Site Assessment completed for the Project and is attached as Appendix F (Wasatch Environmental, Inc., 2021).

Discussion

Impact #3.4.9a – Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Project Construction

Project construction-related activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction-related activities. These materials could expose human health or the environment to undue risks associated with their use, and no significant impacts will occur during construction activities.

Transportation, storage, use, and disposal of hazardous materials during construction activities will be required to comply with applicable federal, State, and local statutes and regulations. U.S. Department of Transportation and Caltrans regulate the transportation of hazardous materials. Additionally, the City's routes that have been designated for hazardous materials transport would be used. Any hazardous waste or debris that is generated during the construction of the proposed Project would be collected and transported away from the site and disposed of at an approved offsite landfill or other such facilities. In addition, sanitary waste generated during construction would be managed through portable toilets located at reasonably accessible onsite locations.

Hazardous materials such as paint, bleach, water treatment chemicals, gasoline, oil, etc., may be used during construction. These materials are stored in appropriate storage locations and containers in the manner specified by the manufacturer and disposed of in accordance with local, federal, and State regulations. Residential construction generally uses fewer hazardous chemicals or chemicals in relatively small quantities and concentrations compared to commercial or industrial uses. No significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous waste during the construction or operation of the new residential development would occur.

Project Operation

Once constructed, the use of such materials as paint, bleach, etc., is considered common for residential developments. It would be unlikely for such materials to be stored or used in such quantities that would be considered a significant hazard. The Project will not generate or use hazardous materials outside health department requirements. Operation activities will comply with the California Building Code, local building codes, and applicable safety measures.

Based on the analysis above, Project construction and operation are not anticipated to result in significant impacts due to the transportation, use, or disposal of hazardous materials. Therefore, impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.9b – Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As noted in Impact #3.4.7b, hazardous materials handling on the Project site over the short-term construction of the Project may result in soil and groundwater contamination from accidental spills. Prior to the start of construction, the Project would prepare and implement an SWPPP, under the NPDES general permit for construction sites over one acre, as required by MM GEO-1. The SWPPP identifies potential sources of pollution from the Project that may affect the stormwater discharge quality and requires that BMPs be implemented to prevent contamination at the source. Implementing BMPs during construction would contain accidental spills of hazardous materials, and soil and groundwater contamination would be minimized or prevented.

The Project site was historically used for agricultural purposes. A soils assessment found no evidence of a significant release of arsenic or organo-chlorine pesticides that might expose workers during construction (Wasatch Environmental, Inc., 2021). The concentration is considered a *de minimis* condition and would be less than significant. As noted in Section 3.4.3 - Air Quality, the Project would comply with the SJVAPCD's Regulation VIII (Fugitive PM10 Prohibitions). The site is relatively flat, and grading of the site will be minimal. With the appropriate application of water or other dust suppression during construction, impacts from potential pesticides in the soil during construction will be minimal. Once the homes are constructed, there will be little to no areas of exposed dirt that might be dispersed into the air and create a health concern.

There is also a known underground storage tank onsite, which was used to store gasoline (Wasatch Environmental, Inc., 2021). This tank will be removed in accordance with the removal standards of the Tulare County Department of Public Health. Dust control measures will be employed during UST excavation activities in order to mitigate inhalation hazards and offsite migration of fugitive dust.

There are two residential structures on the Project, and these will be demolished. Given the ages of these structures, it is assumed that asbestos or lead paint would have been used. Before demolition, the structures will be analyzed for the presence/absence of toxic materials, and a demolition permit will be obtained from the SJVAPCD. Removal of any identified toxic materials will comply with local, State, and federal codes and regulations.

As noted in Impact #3.4.9a above, if there is a use of hazardous materials during the Project's construction phase, the safe handling and storage of hazardous materials consistent with applicable local and State regulations will be required.

The proposed Project is not anticipated to create a significant hazard to the public or the environment; as mentioned previously, the residential Project would not routinely transport, use, dispose of, or discharge hazardous materials into the environment. With the implementation of MM GEO-1 during construction, impacts would be less than significant.

MITIGATION MEASURE(S)

Implementation of MM GEO-1.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant with mitigation incorporated*.

Impact #3.4.9c – Would the Project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The Shannon Ranch Elementary School is approximately 550 feet southwest, and Riverway Elementary School is approximately 2,500 feet southeast of the Project site. Construction activities for residential development could result in the temporary use of hazardous materials and or substances, such as lubricant and diesel fuel during construction. Exhaust from construction and related activities is expected to be minimal and not significant. All future construction-related activities resulting from the proposed Project would be subject to local, State, and federal laws related to hazardous materials and substances emissions. However, construction of the Project would require the use of minimal hazardous materials and require implementation of BMPs when handling any hazardous materials, substances, or waste. As noted in Impact #3.4.3a, emissions from construction-related activities are expected to be minimal and not significant. Once constructed, residential development is not expected to result in hazardous emissions; therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.9d – Would the Project be located on a site that 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?

According to ENVIROSTOR, the closest active cleanup program is approximately 2,500 feet northwest of the Project site (Case#: 60002181) (California Water Resources Control Board, 2022).

The property is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and the Department of Toxic Substances Control (DTSC) (Wasatch Environmental, Inc., 2021). The Project itself will not generate or use hazardous materials outside health department requirements.

Therefore, because the Project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, it can be seen there is a less-than-significant impact of hazards to the public or environment.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.9e – Would the Project for a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?

The Project site is located approximately five miles east of Visalia Municipal Airport, included in the adopted Tulare Comprehensive Airport Land Use Compatibility Plan. The Project is not within a Safety Compatibility Zone area (County of Tulare, 2012). The construction and operation of the Project would not result in the generation of noise levels beyond those that exist in the surrounding area. The construction and operation of the Project would not result in the generation of noise levels beyond those that exist in the surrounding area.

The Project site is not located within two miles of a public airport/airstrip; therefore, it has no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have *no impact*.

Impact #3.4.9f – Would the Project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

The City of Visalia utilized Tulare County's Emergency Operations Plan, which includes planning and response scenarios for seismic hazards, extreme weather conditions, landslides, dam failure, other flooding, wildland fires, hazardous materials incidents, transportation emergencies, civil disturbance, and terrorist attacks. In addition, the Project would also comply with the appropriate local and State requirements regarding emergency response plans and access(City of Visalia, 2014a). The Project would also comply with the appropriate local and State requirements regarding emergency response plans and access. The proposed Project would not inhibit the ability of local roadways to continue to accommodate emergency response and evacuation activities.

The Traffic Study prepared for the proposed Project did not identify any traffic hazards that impede emergency response or evacuation plans (VRPA Technologies, Inc, 2021b). The Project site and surrounding area are relatively flat, with little to no topography that might obscure visibility to motorists. Additionally, roadway improvements have been proposed to maintain traffic safety with the anticipated increase in vehicle trips. Therefore, impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.9g – Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The City of Visalia is located within a zone considered by CAL FIRE to have low to no potential for wildland fires. The proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or residences are intermixed with wildlands.

The Project site is 1.5 miles northwest of the Visalia Fire Department Station 54, the closest station in the Local Responsibility Area. The Project will comply with all applicable State and local building standards as required by local fire codes and impact fees to support additional fire protection services. The Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Given that the Project is not surrounded by wildland areas and is in proximity to existing fire services, the Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. There would be no impact related to wildfires.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
3.4.10 - HYDROLOGY AND WATER QUALITY				
Would the Project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
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 offsite;	☐	☒	☐	☐
ii. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or offsite;	☐	☒	☐	☐
iii. Create or contribute runoff water that 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?	☐	☐	☒	☐

The analysis presented here is based in part on data presented in a Water Supply Assessment prepared for the Project (QK, 2022), which is included as Appendix G.

Discussion

Impact #3.4.10a – Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

See Impact #3.4.7b. During construction, potential impacts on water quality arising from erosion and sedimentation are expected to be temporary conditions during the construction of the new development. The new development must develop and comply with an SWPPP that specifies BMPs to prevent construction pollutants from contacting stormwater to keep all erosion products from moving offsite and into receiving waters. The intention is to eliminate or reduce non-stormwater discharge to storm sewer systems and other waters of the United States.

To reduce potential impacts to water quality during construction activities, Mitigation Measure MM GEO-1 requires the Project proponent to prepare an SWPPP. The Project SWPPP would include BMPs to minimize and control the construction and post-construction runoff and erosion to the maximum extent practicable.

The SWPPP is required to be approved by the RWQCB prior to construction. Furthermore, the proposed Project has been designed to control stormwater runoff and erosion, both during and after construction. Project-specific drainage improvements would reduce the proposed Project's potential to violate water quality standards during construction to a less-than-significant impact with mitigation incorporated.

MITIGATION MEASURE(S)

Implement Mitigation Measure MM GEO-1.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact with mitigation incorporated*.

Impact #3.4.10b – Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

The Visalia area is located within the Kaweah Groundwater Subbasin of the San Joaquin Valley Groundwater Basin. The Subbasin's 696 square miles generally comprises lands in the Kaweah Delta Water Conservation District (KDWCD) and include the Kaweah and St. Johns Rivers. The former is the primary source of groundwater recharge. The alluvial fans of waterways provide highly permeable areas in which groundwater is readily replenished. Annual rainfall in Visalia usually ranges from eight to 12 inches; however, there is no estimate of what percentage of rainfall reaches the groundwater supply. Groundwater flow

is generally southwestward. Based on groundwater elevation maps, horizontal groundwater barriers do not appear to exist in the subbasin.

The Project site is located within the City of Visalia's 2030 General Plan Planning Area, which is located in the Kaweah River's delta system. Surface runoff generally flows from east to west and terminates in the Tulare Lake Basin. Major surface water resources in the area include St. Johns River, Mill Creek, Packwood Creek, Cameron Creek, Deep Creek, Evans Creek, Modoc Ditch, Mill Creek Ditch, Persian Ditch, Tulare Irrigation District (TID) Canal, and some other local ditches.

Throughout the City of Visalia, water is primarily distributed by the California Water Service Company (Cal Water); at least one mutual water district is located within city limits. Cal Water's 75 active supply wells in the Visalia District extract groundwater from the Kaweah Groundwater Subbasin and distribute it over approximately 519 miles of pipeline. The Cal Water system includes two elevated 300,000-gallon storage tanks, an ion exchange treatment plant, four granular activated carbon filter plants, and one nitrate blending facility. These facilities are in place to provide Cal Water's customers with safe drinking water of quality and quantity to meet State and federal drinking water standards (California Water Service, 2022).

Surface Water

According to the City's General Plan, the water quality of the Kaweah River Delta system is considered to be excellent, with no known water quality impairments in the area. The City complies with the terms of its permits for stormwater discharges from small municipal separate storm sewer systems. In November 2005, the City adopted a Storm Water Management Plan that includes a detailed analysis of plans to handle stormwater runoff from increased amounts of impervious surface. These plans include retention/detention facilities, street sweeping, the establishment of a water quality hotline, and an illicit discharge protection system that will allow the City to determine if there is a serious water quality problem from illegal discharges.

Groundwater

The Visalia General Plan Planning Area is within the Kaweah Groundwater Subbasin of the San Joaquin Valley Groundwater Basin. The Subbasin's 696 square miles generally comprises lands in the Kaweah Delta Water Conservation District (KDWCD) and include the Kaweah and St. Johns Rivers. The former is the primary source of groundwater recharge. The alluvial fans of waterways provide highly permeable areas in which groundwater is readily replenished. Annual rainfall in Visalia usually ranges from eight to 12 inches; however, there is no estimate of what percentage of rainfall reaches the groundwater supply. Groundwater flow is generally southwestward. Based on groundwater elevation maps, horizontal groundwater barriers do not appear to exist in the subbasin.

Construction is estimated to take approximately 24 months. Construction water demands are estimated to be approximately 38 acre-feet, which is equivalent to approximately

12,380,000 gallons. Bottled drinking water will be provided for crews during construction activities.

Initial construction water usage will be in support of site preparation and grading activities. During earthwork for grading of access road foundations, building foundations and project components, the principal use of water would be for compaction and dust control. Smaller quantities would be required for the preparation of the concrete required for foundations and other minor uses. After the earthwork activities, water usage will be used for dust suppression and normal construction water requirements that are associated with the construction of the buildings, internal access roads, and revegetation.

The long-term average day operational water demand will be for the residential users and is anticipated to be approximately 118.917 million gallons per year or 364.94 acre-feet per year for the total build-out of the Project. This is based on residential users having an average daily water demand of 150 gallons per day/bedroom across the entire estimated bedroom count of 2,172 for the buildout of the site. The District has a projected 14,969 million gallons of available water when looking at the fifth dry year based on 2045 projections (Table 3.4.10-3). The Project's long-term operational water demand is 0.7944 percent (118.917 MG/14,969 MG) of the available water supply in the District (QK, 2022).

The City has adopted policies to reduce water demand through conservation and other means and to increase surface water imports to the City and surrounding areas. These include the Groundwater Recharge Fee, Groundwater Impact Fee, Groundwater Mitigation Fee, and the Water Conservation Ordinance.

The developer will be responsible for paying the City of Visalia's Groundwater Overdraft Mitigation Fee, and therefore the Project will result in a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a less-than-significant impact.

Impact #3.4.10c(i) – Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion or siltation on or offsite?

As noted previously the Project site is relatively flat, and grading would be minimal. The topography of the site would not appreciably change because of grading activities. The site does not contain any blue-line water features, including streams or rivers. The Project has a proposed storm basin that will collect stormwater runoff on the site. The Project would develop areas of impervious surfaces that would reduce the rate of percolation at the site, but areas of open space would allow for the percolation of stormwater to recharge the

aquifer, or the water would be directed into the City's existing stormwater sewer system. The Project would comply with applicable City development standards and codes. Therefore, the Project would have a less-than-significant impact on drainage patterns or cause substantial erosion or siltation on or off the site.

As discussed in Impact #3.4.10a above, potential impacts on water quality from erosion and sedimentation are expected to be localized and temporary during construction. Construction-related erosion and sedimentation impacts due to soil disturbance would be less than significant after implementing an SWPPP and BMPs as required by MM GEO-1. No drainages or other water bodies are present on the Project site, and therefore, the proposed Project would not change the course of any such drainages.

The existing drainage pattern of the site and area would be affected by Project development because of the increase in impervious surfaces at the site. The Project design includes natural features such as landscaping and vegetation that would allow for the percolation of stormwater. However, there will be an addition in impervious surfaces that could increase the potential for stormwater runoff and soil erosion. The Project would connect to existing City stormwater sewer infrastructure. The Project will comply with all applicable local building codes and regulations to minimize impacts during construction and post-construction. With the implementation of MM GEO-1, impacts that would result in substantial erosion or siltation on or offsite are less than significant.

MITIGATION MEASURE(S)

Implementation of MM GEO-1.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact with mitigation incorporated*.

Impact #3.4.10c(ii) – Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite?

No drainages or other water bodies are present on the Project site. Therefore, the development of the site would not change the course of any such drainages that may potentially result in on or offsite flooding. Water would be used during the temporary construction phase of the Project (e.g., for dust suppression). However, any water used for dust control would be mechanically and precisely applied and would generally infiltrate or evaporate prior to running off.

The Project site is flat, and the proposed grading would not substantially alter the overall topography of the Project site. Although the amount of surface runoff on the Project site would not substantially increase with the construction of the Project, runoff patterns and concentrations could be altered by grading activities associated with the Project. Improper

design of the access road or building pads could alter drainage patterns that would cause flooding on or offsite. The potential for the construction of the proposed Project to alter existing drainage patterns would be minimized through compliance with the preparation of an SWPPP as required by MM GEO-1. With the implementation of such measures, the Project would not substantially increase the amount of runoff to result in flooding on or offsite. Impacts would be reduced to less-than-significant levels.

Additionally, with the approval of grading plans and site development requirements by the City Building Division that incorporates BMPs and design standards, the new development operations would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or offsite. Impacts would be less than significant with the implementation of MM GEO-1.

MITIGATION MEASURE(S)

Implement Mitigation Measure MM GEO-1.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

Impact #3.4.10c(iii) – Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would 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?

Water would be used during the temporary construction phase of the proposed Project (e.g., for dust suppression). However, any water used for dust control would be mechanically and precisely applied and would generally infiltrate or evaporate prior to running off.

The Project would comply with all applicable State and City codes and regulations. The Project will construct a stormwater retention basin onsite to capture stormwater, and engineering calculations will support the storm drainage plan to ensure that the Project does not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, the Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact***.

Impact #3.4.10c(iv) – Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

Please see response #3.4.10a through c(iii), above. The Project would comply with all applicable State and City codes and regulations. The Project will construct a stormwater retention basin onsite to capture stormwater. Engineering calculations will support the storm drainage plan to ensure that the Project does not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, the Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.10d – Would the Project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?

The Project site is not located by the ocean or lake large enough to produce seiches. Therefore, there is no risk that the new development would be inundated by tsunamis or seiches. The Project area is flat and does not contain slopes steep enough to cause a mudflow, avalanche, or significant ground-related risks. As noted above, the Project site is not located within the 100-year floodplain, and there do not appear to be any significant levees that could potentially affect people or structures if they were to fail.

There is no potential for the inundation of the Project site by seiche. Therefore, the Project would not contribute to inundation by seiche, tsunami, or mudflow. There would be no impact from the Project.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have *no impact*.

Impact #3.4.10e – Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

See also Impact #3.4.10b, above. The City of Visalia obtains the majority of its domestic water from the California Water Service (California Water Service, 2022). Implementation of the City of Visalia General Plan policies, California Water Service's 2015 Urban Water Management Plan, the Kaweah Delta Water Conservation District (KDWCD) 2010 Groundwater Management Plan, and the City's involvement with the KDWCD Integrated Regional Water Management Planning (IRWM) program, in addition to the City's Stormwater Master Plan and Management Program and the Waterways and Trails Master Plan, will address the issues of providing an adequate, reliable, and sustainable water supply for the Project's future urban domestic and public safety consumptive purposes.

The sufficiency of the Project water supply is analyzed on two bases: the physical availability of the District to provide water in the amounts required for Project construction and operation; and the estimates (in the 2020 Visalia Water District, Urban Water Management Plan) of normal water years, single dry water year and multiple dry water years, water supply and demand-related water availability with respect to projected water demand during a 20-year projection.

The following tables show the supply and demand comparisons for a normal year, a single dry year, and five consecutive dry years (QK, 2022).

Table 3.4.10-1
Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply totals	10,597	11,495	12,483	13,444	14,510
Demand totals	10,597	11,495	12,483	13,444	14,510
Difference	0	0	0	0	0

As shown in Table 3.4.10-1, future water supplies are anticipated to be met. Projected supplies were compared to the increased demands for a single dry year and are presented in Table 3.4.10-2 below.

Table 3.4.10-2
Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply totals	10,803	11,718	12,726	13,706	14,823
Demand totals	10,803	11,718	12,726	13,706	14,823
Difference	0	0	0	0	0

As shown in Table 3.4.10-2, anticipated groundwater supplies are sufficient to meet all demands through the year 2045, even under single-year drought conditions.

Projected supplies were compared to the increased demands for five consecutive dry-year scenarios and are presented in Table 3.4.10-3.

Table 3.4.10-3
Five Consecutive Dry Year Supply and Demand Comparison

		2025	2030	2035	2040	2045
First Year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0
Second Year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0
Third Year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0
Fourth Year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0
Fifth Year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0

As shown in Table 3.4.10-3, anticipated groundwater supplies are sufficient to meet all demands through the year 2045, even under multiple dry-year drought conditions.

The City of Visalia Public Works Department will review any future development as a result of the Project approval and associated water demand analysis to determine if water service will be available through the City of Visalia. The future development will be required to show water infrastructure connections to the nearest water main, and water mains would be extended within the proposed lot to provide service to each unit created, subject to payment of applicable water charges.

Additionally, the City of Visalia has implemented a Groundwater Overdraft Mitigation Ordinance, which imposes a groundwater mitigation fee on new development and a groundwater impact fee on all residential, commercial, and industrial water suppliers. These

fees are used by the City to construct and improve groundwater recharge facilities and to purchase water for groundwater recharge.

Therefore, compliance with payment of the City's Groundwater Overdraft Mitigation Fee would reduce Project impacts to less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

3.4.11 - LAND USE AND PLANNING

Would the Project:

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

Impact #3.4.11a – Would the Project physically divide an established community?

The Project is surrounded by undeveloped property to the east, west, and north. There is existing residential development to the south.

The Project would increase an established community within the area and promote orderly land use development by providing the ability to develop the 95 acres, which is a supported goal under the General Plan, and, therefore, would have no impact. The Project proposes connecting to existing roadways, providing future connectivity access, and not dividing an established or future community. Future development would not be built in a pre-existing community area and would not create any physical barrier between an established community.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

Impact #3.4.11b – Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The Project is located in unincorporated Tulare County with a current zone classification AE – 40 and AE – 20 (Exclusive Agriculture). The Project site/subject properties are within the City's Sphere of Influence and are currently designated by the General Plan for Residential Very Low Density (VLDR), Low Density (LDR), Medium Density (MDR), and Parks/Recreation planned land uses. The Project will require approval of an annexation and pre-zoning to designate the site with consistent zoning districts. Once annexed into the City, the Project would be consistent with land use planning.

As proposed as part of the Specific Plan, which covers the entire Project site, there are three proposed land use designations and zone districts (Figures 3-2 through 3-4). The aforementioned land use designations require that certain developments abide by the density requirements outlined by the General Plan. As proposed, the Specific Plan is consistent with the General Plan; it only differs from the City's Municipal Code-specific sections regarding development standards. The City's General Plan and Project's Specific Plan require that Low Density Residential allows for densities between 2 to 10 units per gross acre, intended for single-family dwelling housing developments. Additionally, Medium Density Residential allows for densities between 10 to 15 units per gross acre and is intended for small lot subdivisions and multi-family housing developments. The Project as a whole will include 274 single-family units on approximately 51 acres of undeveloped land for a density of approximately 5.35 dwelling units per gross acre. In addition, the Project also includes 270 small-lot single-family units on approximately 26 acres of undeveloped land for a density of approximately 10 units per gross acre.

The City of Visalia 2030 General Plan has designated the Project area within the proposed city limits as developable under the Tier 2 and Tier 3 Urban Development Boundaries. Tier 2 supports a target buildout population of approximately 178,000 by 2030. Tier 3 comprises the full buildout of the General Plan. The expansion criteria for land in Tier 3 is that land would become available for development after 12,800 building permits for housing units have been issued in Tier 1 and Tier 2 areas.

The Specific Plan is consistent with the General Plan, which allows City Council approval of Master Plans, following Planning Commission review and recommendation, for sites under single ownership or unified control, including developable land within both development tiers. Additionally, the policy allows for the pre-zoning of this master-planned land, subject to execution of a development agreement between the City and the landowner conforming to the requirements of Government Code Section 65864, with the Project allowed to annex and develop while the City is still limiting development approvals to land within the Tier 1 or Tier 2 designation.

The proposed residential uses (single-family and small-lot detached single-family) will be considered a permitted use with the approval of the Pratt Family Ranch Specific Plan. As proposed, the Project includes a General Plan Amendment, Pre-zone, and a Specific Plan. The

General Plan Amendment removes the existing VLDR land use and spreads that area among LDR and MDR land uses, thus increasing the estimated amount of dwelling units for the 95-acre site. The subsequent Pre-zone will be consistent with the proposed amendment. Section 3.4.10a depicts that the proposed Project meets the density requirements per the proposed land use designations as required by the Visalia General Plan. The Specific Plan also outlines policies and development standards that alter some existing development standards of the City's Municipal Code.

The Project will be consistent with the following General Plan goals, objectives, and policies:

- OSC-0-7: Preserve and enhance qualities that make Visalia an ideal place to do business and promote a positive image of Visalia as a desirable place to live, visit, and do business.
- LU-P-19: Ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy.
- LUP-P-20: Allow annexation and development of residential, commercial, regional retail, and industrial land to occur within the Urban Development Boundary (Tier 2) and the Urban Growth Boundary (Tier 3) consistent with the City's Land Use Diagram, according to the following phasing thresholds:
    - "Tier 2": Tier 2 supports a target buildout population of approximately 178,000. The expansion criteria for land in Tier 2 is that land would only become available for development when building permits have been issued in Tier 1 at the following levels, starting from April 1, 2010: Residential: after permits for 5,850 housing units have been issued; Residential: after permits for 5,850 housing units have been issued.
    - "Tier 3": Tier 3 comprises full buildout of the General Plan. The expansion criteria for land in Tier 3 is that land would only become available for development when building permits have been issued in Tier 1 and Tier 2 at the following levels, starting from April 1, 2010; Residential: after permits for 12,800 housing units have been issued.
- LU-P-22: Allow for City Council approval of Master Plans, following Planning Commission review and recommendation, for sites under single ownership or unified control, which may include developable land within both multiple development tiers. Allow for pre-zoning of this master-planned land, subject to execution of a development agreement between the City and the landowner conforming to the requirements of Government Code Section 65864 et seq., with the Project allowed to annex and develop while the City is still limiting development approvals to land within the Tier 1 or Tier 2 designation.
- LU-O-19: Ensure the adequate land area is available for future housing needs, enabling an average citywide gross density of 5.3 dwelling units per acre of new residential development.
- LU-O-22: Create inclusive, compact neighborhoods with well-integrated single-family and multi-family residential development and activity nodes featuring schools, neighborhood parks, and neighborhood commercial areas.

- HE-5: Provide a range of housing types and prices within new neighborhoods to meet the needs of all segments of the community.
- LU-O-25: Create an open space system that links neighborhoods, complements adjacent land uses, and serves multiple needs.

These objectives and policies contribute to an overall homogenous citywide land use planning strategy to meet the City's economic goals and policies. The proposed small-lot detached single-family residential units will be considered a permitted use within the R-M-2 zone district as depicted within the Specific Plan. The single-family uses proposed in the R-1-5 zone district are considered permitted use. As mentioned in Impact #3.4.11a, the overall Project does not exceed the maximum density for both proposed residential land uses. It is determined that the Project is consistent with respective General Plan objectives and policies and will not significantly conflict with applicable land use plans, policies, or regulations of the City of Visalia. Therefore, the Project impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

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

Discussion

Impact #3.4.12a – Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

According to the Department of Conservation Division of Mine Reclamation SMARA mapping tool, the nearest open mine (Kaweah South 91-54-0036) to the Project site is approximately 13 miles to the northeast (Department of Conservation, 2022). Additionally, the Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) well finder tool does not designate an active oil or gas well in proximity to the Project site (Department of Conservation, 2022).

The Project site is not designated as a valuable mineral resources preservation or recovery area. The Project will not 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. The Project will have no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

Impact #3.4.12b – Would the Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

The most economically significant mineral resources in Tulare County are sand, gravel, and crushed stone, used as sources for aggregate (road materials and other construction). In

Tulare County, the major sources of aggregate are alluvial deposits and hard rock quarries. Subsequently, most Tulare County mines are all located along rivers at the base of the Sierra Foothills (City of Visalia, 2014a).

The Project site is not delineated on a local general plan, specific plan, or other land use plan as a locally-important mineral resource recovery site; therefore, it will not result in the loss of availability of a locally-important mineral resource. Therefore, the Project would have no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have ***no impact***.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
3.4.13 - NOISE					
Would the Project result in:					
a.	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b.	Generation of excessive groundborne 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 a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☒	☐

Discussion

Impact #3.4.13a – Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Sound is a process that consists of three components: the sound source, the sound path, and the sound receiver. All three components must be present for sound to exist. Without a source to produce sound or a medium to transmit sound-pressure waves, there is no sound. Sound also must be received; a hearing organ, sensor, or object must be present to perceive, register, or be affected by sound and noise. There are many different sound sources, paths, and receivers in most situations, not only one of each. Noise is defined as loud, unpleasant, unexpected, or undesired sounds (City of Visalia, 2014b).

Land uses deemed sensitive receptors include schools, hospitals, rest homes, and long-term care and mental care facilities, which are considered to be more sensitive to ambient noise levels than others. The nearest sensitive land uses include residential homes bordering the site to the south and the west.

Stationary noise sources can also influence the population, and unlike mobile, transportation-related noise sources, these sources generally have a more permanent and

consistent impact on people. These stationary noise sources involve a wide spectrum of uses and activities, including various industrial uses, commercial operations, agricultural production, school playgrounds, high school football games, HVAC units, generators, lawn maintenance equipment, and swimming pool pumps.

As noted previously, the Shannon Ranch Elementary School is approximately 550 feet southwest, and Riverway Elementary School is approximately 2,500 feet southeast of the Project site. The nearest hospital, Kaweah Health Medical Center, is approximately 2.6 miles southeast of the Project site. The nearest nursing home, Quail Park at Shannon Ranch, is approximately 3,000 feet southwest of the Project site. There are two at-home daycares within 3,000 feet of the Project site.

During the construction phase of the project, noise-generating activities will be present. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours. The Project must comply with Chapter 8.36 – Noise of City of Visalia Municipal Code. Specifically, Section 8.36.050 requires construction equipment such as jackhammers, portable generators, pneumatic equipment, trenchers, or other such equipment that can only be operated between the weekday hours of 6:00 a.m. and 7:00 p.m. and weekend hours of 9:00 a.m. to 7:00 p.m. The Project does not anticipate the use of jackhammers or piledriving equipment. However, with the implementation of Mitigation Measure NSE-1, which requires locating stationary construction equipment as far away from sensitive receptors, using mufflers or other noise baffling, and working during daylight hours as is feasible, temporary noise impacts from construction-related activities will be reduced to levels that are less than significant.

The Project proposes single-family and small-lot detached single-family units within the Low Density and Multi-Family Residential land uses. The primary noise generated by the Project will be attributable to traffic noise. Once constructed, the Project would not significantly increase traffic on local roadways. Residential activities could also result in an increase in ambient noise levels in the immediate Project vicinity. Activities that could be expected to generate noise include cars entering and exiting the development and mechanical systems related to heating, ventilation, and air conditioning systems located in residential buildings. This noise would be similar to those generated by the nearby existing residential development and would not be of a level that exceeds thresholds.

MITIGATION MEASURE(S)

MM NSE-1: During construction, the contractor shall implement the following measures:

a. All stationary construction equipment on the Project site shall be located so that noise-emitting objects or equipment face away from any potential sensitive receptors.
b. The construction contractor shall ensure that all construction equipment is equipped with manufacturer-approved mufflers and baffles. During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.

c. Construction activities shall take place during daylight hours, when feasible.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

Impact #3.4.13b – Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

The operation of heavy construction equipment, particularly pile driving and other impact devices such as pavement breakers, create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from the operation of this equipment can result in effects ranging from the annoyance of people to damage to structures. Varying geology and distance will result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes will decrease with increasing distance (City of Visalia, 2014b). The construction phase is the only phase where vibration generated from the construction activities could pose an impact. Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. In Table 3.4.13-1, The City's General Plan EIR outlines common construction equipment and their peak particle velocity (PPV). The table does not include an exhaustive list of construction equipment but common equipment with an estimated PPV of 25 feet.

Table 3.4.13-4
Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet
Vibratory Roller	0.210
Hoe Ram	0.089
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Small bulldozer	0.003

Source: (City of Visalia, 2014b)

Vibration generated from construction activities is considered a temporary source. Most of the Project site is not adjacent to developed areas, except for the southern Project boundary. However, the Project will be required to abide by the City's Municipal Code. Therefore, all construction activities will be prohibited during twilight and early morning hours to reduce the potential impacts to nearby sensitive receptors. The operation of the Project site will produce identical amounts of traffic in comparison to the neighboring developments. The Project's impacts will be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.13c – Would the Project result in for a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

The Project is located approximately five miles northeast of the Visalia Municipal Airport. The noise levels that the Airport generates will not adversely affect the Project nor expose people residing or working in the Project area to excessive levels. The impacts will be less than significant. The Project is not located within a safety zone identified in the ALUCP (County of Tulare, 2012).

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less- than Significant Impact	No Impact

3.4.14 - POPULATION AND HOUSING

Would the Project:

a.	Induce substantial population unplanned growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b.	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

Impact #3.4.14a – Would the Project induce substantial population unplanned growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

According to the 2020 Decennial Census conducted by the United States Census Bureau, the total population of the City of Visalia is 141,384 people, and the average household size is 3.02 (United States Census Bureau, 2022). The Project's density is 5.72 units per gross acre (on a 95-acre site), which would result in the construction of 544 residential units with approximately 1,642 residents. The General Plan assumes an average annual growth rate of 2.6 percent, with an average residential density going forward of 5.3 units per gross acre.

The Project would generate approximately 1.1 percent growth within Visalia. However, that percentage applies to the construction of the entire Project, which will not be developed all at once, but in two phases consisting of 247 units for Phase 1 and 297 units for Phase 2. Phase 2 is within the General Plan's Tier 3. The development of Tier 3 land designated for residential uses will be permitted (opened) after the City has issued building permits for 12,8000 housing units, resulting in a target population of 178,000. Using 2.6 percent annual growth, it is estimated that the City of Visalia will reach the Tier 3 development threshold of 178,000 residents in 2029. Thus, the Project is limited in the number of units constructed and will not induce substantial unplanned population growth.

In addition, it is likely some portion of the 1,642 people may already reside in Visalia or the surrounding communities, thereby reducing the overall impact on the population the Project may generate. The Project would not include upsizing of offsite infrastructure or roadways. This is a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.14b – Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The surrounding parcels are mostly undeveloped with residential uses south and the St. Johns River to the north of the Project. The properties to the east and west are undeveloped agricultural land. The General Plan's existing land use designations for the Project site are Residential – Very Low, Low, and Medium Density and Parks/Recreation. The proposed General Plan Amendment eliminates the Residential Very Low Density designation and increases the acreage of the Low and Medium designations.

Construction of the Project would likely be completed by construction workers residing in the City or the surrounding area; they would not require new housing. The Project will not result in the displacement of any persons as there are no residential units on the Project site. As such, no impact associated with the displacement of housing or people would occur. In conclusion, with the implementation of the Project, the Project will not result in any population and housing impacts.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have *no impact*.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact

3.4.15 - PUBLIC SERVICES

Would the Project:

a.	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or to other performance objectives for any of the public services:				
	i. Fire protection?	☐	☐	☒	☐
	ii. Police protection?	☐	☐	☒	☐
	iii. Schools?	☐	☐	☒	☐
	iv. Parks?	☐	☐	☒	☐
	v. Other public facilities?	☐	☐	☒	☐

Discussion

Impact #3.4.15a(i) – Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or to other performance objectives for any of the public services - Fire Protection?

The nearest City of Visalia Fire Department is located two miles southeast of the Project site.

Prior to the recordation of the proposed subdivision maps, the developer will be required to pay development impact fees. A portion of those funds will be specifically earmarked for the use of the Fire Department to maintain an adequate level of service within its service boundary. The entire Project, whether submitted in phases or not, will be subject to review by the City of Visalia Engineering, Public Works, and Fire Department in order to determine whether the Projects infrastructure design is in compliance with City policies for development. The Project's water system will be reviewed to verify that the system can supply the required fire flow for fire protection purposes. The establishment of gallons-per-

minute requirements for fire flow shall be based on the review of the City of Visalia Fire Department.

Development of the Project will increase the need for fire protection services and expand the service area and response times of the local City Fire Department. As previously mentioned, the Project will be required to adhere to any conditions/policies pertaining to the construction of infrastructure needed for the Visalia Fire Department to provide an adequate level of fire protection service.

According to the General Plan and the standard review procedures for development projects within the City of Visalia, the Project's plans and permits will be reviewed for input from the Fire Department. The Project's proposed construction would be located adjacent to existing residential areas, which the City Fire Department already serves. The developer will be required to pay development impact fees to offset the growth in population in the area that would impact fire protection. Impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.15a(ii) – Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or to other performance objectives for any of the public services – Police Protection?

The Visalia Police Department (VPD) provides police protection in the City of Visalia and collaborates with other law enforcement agencies and the District Attorney's office on crime prevention. The City has approximately 143 sworn officers working out of two districts. The Project site is located approximately two miles northwest of the nearest City of Visalia Police Station - District 1. This station serves northern Visalia. The Project is proposing development in an area that is adjacent to residential development and undeveloped agricultural land. The Project proposes additional residential development in a previously undeveloped location, which will increase the need for police services. However, the Project will pay appropriate development fees based on the adopted fee calculations and is responsible for constructing any infrastructure needed to serve the Project. Impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.15a(iii) – Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or to other performance objectives for any of the public services – Schools?

The Visalia Unified School District provides education services from kindergarten through 12th grade in the Planning Area. The nearest school is the Shannon Ranch Elementary School, approximately 500 feet southeast of the Project site. The increased population generated by the Project will increase the potential number of students attending schools within the jurisdiction of the Visalia Unified School District.

The increased population generated by the proposed Project would increase the number of students attending local schools and could result in significant impacts to these facilities by requiring new facilities. The developer will be required to pay the appropriate school impact fees in order to receive building permits. According to Government Code Section 65996, the development fees authorized by SB 50 are deemed "full and complete school facilities mitigation." School districts would utilize the General Plan and codes to establish new school sites and make decisions on school amenities and facility size. The development will be subject to school impact fees to mitigate any increased impacts on school facilities.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.15a(iv) – Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or to other performance objectives for any of the public services – Parks?

The City maintains several types of parks and facilities. Almost all parkland described here is owned by the City or another public body and used for public recreational purposes, though some small parks are maintained by local landscaping and lighting districts.

Visalia classifies parks and public open space into five general categories. Facilities at each park type vary according to size. Park sizes within the City of Visalia include Pocket Park, Neighborhood Park, Community Park, Large City Park, and Natural Corridors and Greenways. As mentioned in previous sections, the Project is proposing a centralized public

park, private green space, and a public dog park in the southeast portion of the Project site, all connected through a trail and landscape system. The approximate one-acre public park has been designed to serve the immediate community. The dog park will serve a larger area due to the lack of availability of dog parks within the northern portion of the City.

A park's development impact fee must be satisfied in order to issue building permits. Each developer will be required to either pay this fee and/or development or dedicate parkland as a part of their proposed project. The developer of the Pratt Family Ranch Project will be subject to dedicating the park and/or paying the park impact fee. The final determination will be made by the City of Visalia.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.15a(v) – Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or to other performance objectives for any of the public services – Other Public Facilities?

Community facilities are the network of public and private institutions that support the civic and social needs of the population. They offer a variety of recreational, artistic, and educational programs and special events. The City also provides animal control services, refuse pick-up (via an agreement with Tulare County Resource Management Agency and Consolidated Waste Management Authority), and drainage management (City of Visalia, 2014b). These services receive funds allocated through the General Fund, usage fees, penalties, or impact fees.

The City collects planning and building fees and impact fees for new development. Since the demand for other public facilities is driven by population/development, the Project would be required to pay fees to offset the demand for that service to ensure an adequate level of service. Therefore, the impact will be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less–than-Significant Impact	No Impact

3.4.16 - RECREATION

Would the Project:

a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

Impact #3.4.16a – 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?

See Impact #3.4.15a(iv) above.

Visalia classifies parks and public open space into five general categories. Facilities at each park type vary according to size. Park sizes within the City of Visalia include Pocket Park, Neighborhood Park, Community Park, Large City Park, and Natural Corridors and Greenways. Pocket parks and neighborhood parks are dispersed throughout City neighborhoods. The Riverway Sports Park is approximately 0.6 miles southeast of the Project site, and there are trails and open space running along the St. Johns River directly north of the Project.

The Project is proposing the development of a centralized pocket park and a dog park that will be available for the community/public. The City's General Plan defines an overall parkland standard of 7.6 acres per 1,000 residents; however, this total consists of separate standards for city parks, school sites, and private open space. The City has a ratio of five acres of parkland per 1,000 residents. However, pocket parks have not counted as meeting this ratio (City of Visalia, 2014b). The parkland being proposed as part of this Project is equal to the area designated by the City's General Plan; therefore, it is greater than the park dedication requirement outlined in the City's Municipal Code. Furthermore, with the dedication and development of park facilities within the Project site, the developer will be required to pay park development impact fees for the development and acquisition of parkland, community centers, recreational facilities, park amenities, and impact fee nexus studies.

Although the Project may impact City park facilities, the Project also proposes to develop park amenities that are greater than what is required by the City's development standards. In addition, the Project developer will pay the required park impact fees. Therefore, the Projects impacts to the neighborhood and regional parks or other recreational facilities would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.16b – Would the Project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

The Project proposes to construct and dedicate an approximate one-acre park and a dog park to be utilized by the immediate community and public. The Project does not propose the construction or expansion of any recreational facilities. There will be no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have *no impact*.

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

Discussion

This discussion is based on the Traffic Impact Study prepared for the Project (VRPA Technologies, Inc, 2021b), which is attached as Appendix H.

Impact #3.4.17a – Would the Project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Transit Services

Visalia Transit (VT) is the transit operator in the City of Visalia. The closest is VT Route 16, which runs east/west along Riggin Avenue, then south of Demaree Street, located approximately 0.5 miles south of the Project site. VT operates several fixed routes that serve City residents, with some routes serving the outlying cities and communities. VT operates fixed route service seven days a week with operational hours Monday through Friday between 6:00 a.m. and 9:30 p.m., 9:00 a.m., and 6:30 p.m. on Saturdays, and between 8:00 a.m. and 6:30 p.m. on Sundays (City of Visalia, 2014a).

The Project is not expected to disrupt or impede existing transit facilities and therefore has a less-than-significant impact.

Bicycle and Pedestrian Facilities

Visalia's flat topography and dry, moderate climate make choosing to walk or bicycle an attractive transportation option during much of the year. The City of Visalia Active Transportation Plan was adopted in March 2017 and is intended to guide bikeway policies, programs, and facility improvements to improve safety, comfort, and convenience for all bicyclists in the City of Visalia (City of Visalia, 2017).

Currently, no bike lanes exist in the vicinity of the Project site. However, the Project will propose a trail system interconnecting to the edges of the Project boundary to the interior park and dog park and any future bike paths located along Mooney Boulevard. The Project is not expected to disrupt or impede existing or planned bicycle facilities and will add to the citywide bike path network. Therefore, the Project will have a less-than-significant impact.

Pedestrian

Currently, walkways do not exist in the vicinity of the Project site along Pratt Road (future collector) that runs through the Project boundary. As a part of the intent of the Project, Pratt Road, Mooney Boulevard, Avenue 320 will be developed in order to provide pedestrian connectivity landscape easements, and sidewalks will encompass the Project and feed into the interior of the community, as well as connect to the nearby dog park. The Project proponent will be responsible for implementing all applicable requirements for updating sidewalks and other related infrastructure as directed by the City of Visalia. The Project will not generate any impacts.

Roadways

Vehicular access to the site would be provided from Pratt Road, Mooney Boulevard, and Avenue 320. The segment of Mooney Boulevard between Riverway Drive and Avenue 320 is identified as an 84-foot collector per current City standards. The Project proposes to build Mooney Boulevard to this standard and realign the roadway slightly to the east. In addition, the Project proposes to build a roundabout at the Mooney Boulevard/Riverway Drive intersection, which would be dedicated as a public right of way and would be constructed to Caltrans or City-approved standards.

Private gated driveways are proposed as a part of this Project and will require access from Pratt Road, Mooney Boulevard, and Avenue 320. To function properly, gated driveways need to have sufficient storage space to minimize queuing of vehicles that would extend into the roadway system. It was determined the implementation of gated driveways would not significantly impact the surrounding roadways due to the allocated space for queued vehicles, estimated processing time, and the design standard of the gated drive approaches (VRPA Technologies, Inc, 2021b).

The list below is a collection of street and highway intersections and segments that may be impacted by the Project and were analyzed.

- Avenue 320/Demaree Street

- Pratt Road/Demaree Street
- Riggin Avenue-Avenue 312/Demaree Street
- Riggin Avenue/County Center Drive
- Pratt Road/Mooney Boulevard
- Riverway Drive/Mooney Boulevard
- Shannon Parkway/Mooney Boulevard
- Riggin Avenue/Mooney Boulevard
- Shannon Parkway/Giddings Street
- Riggin Avenue/Giddings Street
- Riggin Avenue/Dinuba Boulevard-State Route (SR) 63
- Shannon Parkway/Demaree Avenue
- Riverway Drive/Demaree Avenue
- County Center Drive/Pratt Road
- County Center Drive/Shannon Parkway
- Ferguson Street/Mooney Boulevard
- Avenue 320/Mooney Boulevard
- County Center Drive/Avenue 320

The Project trip generation and design hour volumes shown in Table 3.4.17-1 were estimated using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.

Table 3.4.17-1
Project Estimated Trips

Land Use	Quantity	Daily Trip Ends (ADT)		Weekday AM Peak Hour					Weekday PM Peak Hour				
		Rate	Volume	Rate	In:Out Split	In	Volume Out	Total	Rate	In:Out Split	In	Volume Out	Total
Single Family Residential (210)	555 D.U.	9.44	5,239	0.74	25.75	103	308	411	0.99	63.37	345	203	549
Total Trip Generation			**5,239**			**103**	**308**	**411**			**346**	**203**	**549**

. Trip ends are one-way traffic movements, entering or leaving. The numbers in parenthesis are ITE land use codes.

The City adopted a threshold of LOS D for street segments and intersections. Table 3.4.17-2 illustrates the intersections within the scope of the study and indicates the anticipated Level of Service (LOS) prior to and with the addition of Project traffic. In addition to the analysis of the Project, there are several other development projects within the Project's vicinity that will add additional trips to the study intersections and segments. The majority of these projects are southeast of the Project site, between Mooney Boulevard and Dinuba Boulevard, and south of Riverway Drive, some of which are adjacent to the impacted intersections.

Table 3.4.17-2
Intersection Operations

Intersection	Target LOS	Peak Hour	Opening Year Without Project		Opening Year Plus Project		5-Year Horizon Without Project		5-Year Horizon Plus Project		10-Year Horizon Without Project		10-Year Horizon Plus Project		20-Year Horizon Without Project		20-Year Horizon Plus Project	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1.Avenue 320/Demaree Street	D	AM	11.4	B	11.5	B	11.9	B	12.0	B	17.0	C	17.0	C				
		PM	13.7	B	13.9	B	15.0	C	15.2	C	23.1	C	24.7	C				
2. Avenue 320/County Center Street (Future)	D	AM									8.6	A	8.8	A				
		PM									8.6	A	8.7	A				
3. Avenue 320/Mooney Boulevard (Future)	D	AM									0.0	A	0.0	A				
		PM									0.0	A	0.0	A				
4. Pratt Road/Demaree Street	D	AM	14.8	B	15.0	C	16.1	C	16.4	C	17.2	C	17.3	C				
		PM	14.9	B	15.4	C	16.1	C	16.7	C	17.1	C	17.3	C				
5. Pratt Road/County Center Street	D	AM	9.4	A	11.1	B	9.5	A	11.2	B	10.7	B	12.8	B				
		PM	9.9	A	11.3	B	10.0	B	11.5	B	11.1	B	13.7	B				
6. Pratt Road/Mooney Boulevard	D	AM	0.0	A	10.3	B	0.0	A	10.4	B	0.0	A	10.0	B				
		PM	0.0	A	11.0	B	0.0	A	11.2	B	0.0	A	10.7	B				
7. Riverway Drive/Demaree Street	D	AM	11.1	B	11.2	B	11.5	B	11.6	B	11.6	B	11.7	B				
		PM	11.0	B	11.4	B	11.5	B	11.9	B	11.6	B	12.0	B				
8. Riverway Drive/Mooney Boulevard	D	AM	7.5	A	4.2	A	7.5	A	4.3	A	7.5	A	4.2	A				
		PM	7.6	A	4.5	A	7.7	A	4.5	A	7.8	A	4.6	A				
9. Riggin Avenue/Dinuba Boulevard	D	AM	28.1	C	28.6	C	29.1	C	29.7	C	30.4	C	31.1	C	34.1	C	34.7	C
		PM	41.5	D	45.1	D	45.3	D	49.8	C	51.4	D	54.8	D	**81.3**	**F**	**84.6**	**F**
10. Shannon Parkway/Demaree Street	D	AM	17.9	C	17.9	C	20.8	C	20.8	C	24.1	C	24.1	C				
		PM	17.0	C	17.0	C	19.3	C	19.3	C	19.7	C	19.7	C				
11. Shannon Parkway/County Center Street	D	AM	5.2	A	5.7	A	5.5	A	6.0	A	4.8	A	5.1	A				
		PM	3.5	A	4.0	A	3.7	A	4.1	A	3.8	A	4.2	A				
12. Shannon Parkway/Mooney Boulevard	D	AM	3.6	A	4.7	A	3.7	A	4.8	A	3.7	A	4.9	A				
		PM	4.3	A	6.2	A	4.5	A	6.5	A	4.5	A	6.3	A				
13. Shannon Parkway/Gidding Street	D	AM	6.9	A	6.9	A	7.6	A	7.7	A	6.7	A	6.8	A				
		PM	4.2	A	4.3	A	4.4	A	4.4	A	4.4	A	4.4	A				
14. Riggin Avenue /Demaree Street	D	AM	34.8	C	36.6	D	36.3	D	38.3	D	36.8	D	38.8	D				
		PM	36.9	D	40.7	D	39.9	D	44.4	D	36.8	D	48.9	D				
15. Riggin Avenue/County Center Street	D	AM	**68.4**	**F++**	**92.0**	**F++**	**91.4**	**F++**	**121.3**	**F++**	**127.4**	**F++**	**158.7**	**F++**				
		PM	**101.3**	**F++**	**138.0**	**F++**	**138.4**	**F++**	**174.3**	**F++**	**155.6**	**F++**	**194.0**	**F++**				
16. Riggin Avenue/Mooney Boulevard	D	AM	32.6	C	35.3	D	32.9	C	35.9	D	33.4	C	36.5	D				
		PM	40.2	D	45.2	D	42.2	C	47.3	D	49.0	D	53.5	D				
17. Riggin Avenue/Gidding Street	D	AM	242.1	F++	289.9	F++	287.0	F++	336.9	F++	301.2	F++	348.4	F++				
		PM	**166.6**	**F++**	**212.9**	**F++**	**205.2**	**F++**	**253.2**	**F++**	**249.4**	**F++**	**299.7**	**F++**				
18. Ferguson Avenue/Mooney Boulevard	D	AM	13.8	B	16.1	C	15.1	C	17.9	C	15.5	C	18.2	C				
		PM	**80.2**	**F++**	**127.7**	**F++**	**109.7**	**F++**	**158.9**	**F++**	**146.7**	**F++**	**201.2**	**F++**				

As shown above, three of the study intersections (Riggin Avenue at County Center Street, Riggin Avenue at Giddings Street, and Ferguson Avenue at Mooney Boulevard) were found to exceed the City LOS threshold at the 10-year horizon, and one intersection (Riggin Avenue at Dinuba Boulevard (SR 63) will exceed LOS D at the 20-year horizon.

The Project will generate approximately 5,239 ADT and will cause, in addition to other nearby developments, significant LOS impacts relating to the generation of unacceptable LOS at three intersections. Mitigation will be required to alleviate the LOS impacts caused by the Project and other proposed development in the area. Mitigation Measure MM TRA-1 requires the Project developer to pay their pro-rata portion of the cost to signalize three intersections. Mitigation Measure MM TRA-2 requires payment of their pro-rata portion of the cost to add additional turn lanes to alleviate congestion at Riggin Avenue and Dinuba Boulevard. With the implementation of the MM TRA-1 and MM TRA-2, the impacts will be less than significant.

MITIGATION MEASURE(S)

MM TRA-1: Prior to the issuance of building permits, the developer shall pay its pro-rata share for signalization of the following intersections:

a. Riggin Avenue at County Center Street
b. Riggin Avenue at Giddings Street
c. Ferguson Avenue at Mooney Boulevard

MM TRA-2: Prior to the issuance of building permits, the developer shall pay its pro-rata share to widen the eastbound approach to two left-turn lanes, two through-lanes, and one right-turn lane at the intersection of Riggin Avenue at Dinuba Boulevard (SR 63).

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

Impact #3.4.17b – Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

Under SB 743, vehicle miles traveled (VMT) is a key measure used for gauging the environmental impacts of projects under CEQA.

An assessment of potential VMT impacts associated with the Project was analyzed in the TIS to address changes in CEQA requirements. The VMT analysis compared the Project's expected VMT/capita to regional averages. The Project's VMT impacts will be considered less than significant if the VMT per capita is 16 percent below regional averages (or lower). The Tulare Council of Governments (TCAG) regional travel demand model was used in this calculation. The results are as follows:

- Project VMT/capita: 8.4
- Regional VMT/capita: 11.7

The Project's VMT/capita is 28.2 percent less than the regional average. Therefore, the Project's VMT impacts are less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.17c – Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Project will be designed to meet current standards and safety regulations. All intersections will be constructed to comply with the City and Caltrans regulations, and design and safety standards of Chapter 33 of the California Building Codes (CBC) and the guidelines of Title 24 to create safe and accessible roadways.

Vehicles exiting the subdivision will be provided with a clear view of the roadway without obstructions. Landscaping associated with the entry driveways could impede such views if improperly installed. Specific circulation patterns and roadway designs will incorporate all applicable safety measures to ensure that hazardous design features or inadequate emergency access to the site or other areas surrounding the Project area would not occur.

Therefore, the Project will have a less-than-significant impact with the incorporated design features and all applicable rules and regulations.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.17d – Would the Project result in inadequate emergency access?

See the discussion in Impact #3.4.9f.

State and City Fire Codes establish standards by which emergency access may be determined. The proposed Project would have to provide adequate unobstructed space for fire trucks to turn around. The proposed Project site would have adequate internal circulation capacity, including entrance and exit routes to provide adequate unobstructed space for fire trucks and other emergency vehicles to gain access and to turn around. The proposed Project would not inhibit the ability of local roadways to continue to accommodate

emergency response and evacuation activities. Therefore, the Project would result in a less-than-significant impact associated with emergency access.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less–than-Significant Impact	No Impact

3.4.18 - TRIBAL CULTURAL RESOURCES

Would the Project:

a. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☒	☐	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion

Impact #3.4.18a(i) – 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 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)?

See also Section 3.4.5, *Cultural Resources*.

Native American Tribal Consultation was completed for the Project in compliance with Assembly Bill 52 (AB 52) and Senate Bill 18 (SB 18), CEQA, and the Public Resources Code.

A Sacred Land Files search was requested from the Native American Heritage Commission (NAHC) to identify previously recorded sacred sites or cultural resources of special importance to tribes and provide contact information for local Native American representatives who may have information about the Project area. A response was received on May 26, 2020, indicating negative results that did not indicate the presence of any cultural places within the Project site and within a half-mile buffer around the Project site. The City of Visalia, as Lead Agency, sent consultation request letters pursuant to SB 18 and AB 52 to the tribal groups on the NAHC list.

The Lead Agency has not received information from a local tribal group indicating that the Project would impact tribal cultural resources. With the implementation of Mitigation Measures MM CUL-1 through MM CUL-3, ground disturbance generated during the construction of the Project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historic resources.

MITIGATION MEASURE(S)

Implementation of MM CUL-1 through MM CUL-3.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact with mitigation incorporated*.

Impact #3.4.18a(ii) – 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 resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

See discussion in Section 3.4.5, *Cultural Resources* and Impact #3.41.18(i) above.

With the implementation of Mitigation Measures MM CUL-1 through MM CUL-3, the Project would not cause a substantial adverse change in the significance of a tribal cultural resource that is 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

MITIGATION MEASURE(S)

Implementation of MM CUL-1 through MM CUL-3.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact with mitigation incorporated***.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
3.4.19 - UTILITIES AND SERVICE SYSTEMS				
Would the Project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would 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 that 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

Impact #3.4.19a – Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects?

The Project proposes to construct new wet and dry utility infrastructure to connect to the existing City and private service provider infrastructure. Services that will be installed during the construction of the Project include water, wastewater, storm drain drainage connections, natural gas, electric power, and telecommunications facilities. The proper sizing and placement of the utilities will be designed per the City and other utility

development design standards. All proposed wet infrastructure will be connected to existing infrastructure already located within Mooney Boulevard right of way.

As noted in Impacts #3.4.10b and #3.4.10e, based on data regarding the availability of water at and near to the Project site, it was determined that the groundwater aquifer pumping history are sufficient for both Project construction and Project operation and that there will be sufficient water to serve project needs for 20 years under the water scenarios including multiple-dry year drought conditions (QK, 2022).

See Impact #3.4.10 for the discussion of wastewater disposal. The Project will not require the construction of new water or wastewater treatment facilities. Water usage for dust control during construction-related activities will be minimal due to the small footprint and short duration of construction-related activities of the proposed Project.

The proposed Project would be subject to the payment of any applicable connection charges and/or fees and extension of services in a manner that is compliant with the Visalia standards, specifications, and policies. All applicable local, State, and federal requirements and best management practices will be incorporated into the construction and operation of the Project.

As stated in previous sections, the Project will occur in Tier 2 and Tier 3 of the City's urban development boundaries and are allowed to develop consistent with the General Plan and policies allowing development within their particular tiers. The Project's impacts will be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.19b – Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?

See Impacts #3.4.10b and #3.4.10e.

The groundwater supply is distributed by the California Water Service Company (Cal Water). Cal Water Visalia District supply wells extract groundwater from the Kaweah Groundwater Subbasin. The Cal Water system includes 75 operational groundwater wells, about one-third of which have auxiliary power for backup. There are 519 miles of main pipelined in the system, ranging from two inches in diameter to 12 inches in diameter. The Cal Water system includes two elevated 300,000-gallon storage tanks, an ion exchange treatment plant, four granular activated carbon filter plants, and one nitrate blending facility. In addition to the system serving the City of Visalia, Cal Water also operates three other small systems in the

Visalia area, defined as Oak Ranch (wells with distribution pipeline), Post Mitts (two wells with distribution pipeline), and Fairway (well with distribution pipeline). These systems are within Cal Water's Visalia District system but outside Visalia city limits (City of Visalia, 2014b).

The system serves an estimated population of 138,404, which could grow to 204,896 by 2030, according to the adopted 2015 UWMP. Cal Water estimated that it was serving 39,205 residential, commercial, and industrial customers in 2010, with expected growth to 61,956 customers (households and businesses) by 2030.

The California Water Resources has defined the Kaweah Subbasin as "critically overdrafted." Overdraft occurs when the average annual amount of groundwater extraction exceeds the long-term average annual supply of water to the basin. Native yield is defined as the groundwater supply, which is based on the natural, normal, unavoidable recharge that occurs within the basin. The KRGSA GSP estimates the native yield of the subbasin at 0.15 acre-ft/acre, which equates to approximately 4.32 acre-feet/year. This results in a shortfall of approximately 16.65 acre-feet/year for the proposed development, i.e. 20.97 acre-feet/year minus 4.32 acre-feet/year. However, the KRGSA is currently in balance and has not yet implemented any pumping restrictions.

It has been determined that the Project water supply is in accordance with SB 610's normal year/dry year/multiple dry year requirements. There is sufficient water available to support the Project, and impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.19c – Would the Project result in a determination by the wastewater treatment provider that 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?

The existing Waste Discharge Requirements placed on the City Water Conservation Plant (WCP) limit discharge to an average flow of 20 mgd and require that the ammonia concentration in the discharge be reduced to 0.025 mg/l by 2011. The certified EIR for the WCP analyzed impacts for average flow volumes of 22 mgd and 26 mgd (City of Visalia, 2014b).

With the proposed upgrades to the plant processing capabilities and the rerouting of the discharge stream away from Mill Creek, the WCP has sufficient capacity to process the expected flows from land use classifications noted in the proposed General Plan for the near future and would expand its treatment capacity as the need dictates. The projected sanitary sewer flows entering the WCP at the proposed General Plan buildout (25,034,050 gpd in

2030) is expected to be less than the volume previously anticipated for the SWMP (25,949,996 gpd in 2030), meaning further expansions could be delayed. In 2014, the WCP was upgraded to provide the ability to increase capacity to 26 mgd as demand increases. Additionally, mandated water conservation measures will likely cause reductions in average daily flows to the WCP. This will also help delay the need for future expansions of the Water Conservation Plant and give the City more flexibility in determining the types of development that are appropriate.

Expansion at the outer rings of the development boundaries will not cause significant impacts to the sewer system since the majority of the area was included in the WCP Solid Waste Master Plan. Thus, the inclusion of the Project's requirement to account for its impacts on the City's wastewater system and development impact fees will reduce the overall impact the Project may cause. The impact will be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.19d – Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

The Tulare County Resource Management Agency manages solid waste disposal in accordance with the Tulare County Integrated Waste Management Plan. The County landfills accumulate approximately 300,000 tons of waste per year, which is equivalent to about five pounds per person per day or one ton per County resident per year. The County operates three disposal sites: the Visalia Disposal Site, northwest of Visalia; the Woodville Disposal Site, southeast of Tulare; and the Teapot Dome Disposal Site, southwest of Porterville (City of Visalia, 2014b). The City operates its own solid waste disposal fleet.

The California Department of Resources Recycling and Recovery's Solid Waste Information System (SWIS) manages information regarding the operations and disposal of all solid waste sites throughout California. According to the SWIS database, the Teapot and Visalia Landfills are operationally active. However, the Woodville landfill is operationally inactive (California Department of Resources Recycling and Recovery, 2022). The City will require the appropriate solid waste receptacles (compliance with the California Solid Waste Reuse and Recycling Access Act of 1991) to be provided to the Project. In addition, the Project will be required to pay solid waste development impact fees, thus reducing the perceived impact the Project may generate. The impact will be less than significant.

The Project does not and would not conflict with federal, State, or local regulations related to solid waste. The proposed Project would be served by a landfill with sufficient permitted

capacity to accommodate the Project's solid waste disposal needs in compliance with federal, State, and local statutes and regulations related to solid waste. Therefore, the Project would have a less-than-significant impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact***.

Impact #3.4.19e – Would the Project comply with federal, state, and local statutes and regulations related to solid waste?

See Impact #3.4.19d.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a ***less-than-significant impact***.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
3.4.20 - WILDFIRE				
Would the Project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Discussion

Impact #3.4.20a – Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

See Impact #3.4.9f regarding emergency response.

The Project is located on the edge of an urbanized area to the south, and rural agriculture to the east, west and north. Access for emergency vehicles to the site would be maintained throughout the construction period. The Project would not interfere with any local or regional emergency response or evacuation plans and would not result in a substantial alteration to the adjacent and area circulation system. The City has established emergency response and evacuation plans based on the Visalia Emergency Operations Plan. Impacts related to fire hazards and emergency response plans would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.20b – Would the Project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

The potential for fire hazard is largely dependent on the extent and type of vegetation, known as surface fuels, that exists within the region. Fire hazard probability is typically highest in undeveloped, heavily wooded areas, as trees are a greater source of fuel rather than low-lying brush or grassland (City of Visalia, 2014b).

The City General Plan indicates that a few very small portions of the City are classified by the California Department of Forestry and Fire Protection (CDF) as having moderate fire hazards. In general, the threat of wildland fires in Visalia is minimal because of the area's flat topography and the relative absence of forests, grassland, and brush. In addition, the CDF designates the Project site as non-wildland/non-urban and adjacent to the urban unzoned area.

In addition, the City requires that any construction comply with the Uniform Fire Code provisions and is subject to review and approval by the City's Fire Department. Therefore, the impacts related to the Project are considered less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.20c – Would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

See discussion in Impact #3.4.20a-b.

The Project proposes to construct 544 single-family residences and includes the development of infrastructure (water, sewer, electrical power lines, and storm drainage) required to support the proposed residential uses. The Project site is surrounded by existing and future urban development.

The Project would require installing or maintaining additional electrical distribution lines and natural gas lines to connect the residences to the existing utility grid. However, the Project would be constructed in accordance with all local, State, and federal regulations

regarding power lines and other related infrastructure, as well as fire suppression requirements. The design of all proposed utilities will be subject to the review and approval of the City. This will ensure the viability of the utility infrastructure's ability for fire protection and suppression activities. Therefore, impacts for the Project would be considered as less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

Impact #3.4.20d – Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The General Plan characterizes the City as being relatively flat with little topographic variation. The Project is in close proximity to the St. Johns River, north of the Project site. The surrounding land adjacent to the Project site is similarly flat, undeveloped agricultural land with the exception of the developed subdivision to the south.

Portions of the Project site are located in both the A Hazard Zone (100-year flood zone) and X Flood Hazard Zone (500-year flood zone) as determined by the Federal Emergency Management Agency (FEMA) and are further surrounded by properties that are identified as an Area of Minimal Flood Hazard. The Project will be required to provide additional fill to the site to raise the elevation to construct residences that will not be affected by the potential 1 percent or 0.2 percent Annual Chance of Flood. Coordination and approval of a Letter of Map Revision (LOMR-F) through FEMA are required as a part of this Project (Federal Emergency Management Agency, 2022). Subject to the approval from FEMA, this Project's impacts will be considered less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

The Project would have a *less-than-significant impact*.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3.4.21 - MANDATORY FINDINGS OF SIGNIFICANCE					
a.	Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b.	Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are significant 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 that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

Impact #3.4.21a – Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

As evaluated in this IS/MND, the Project would not substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory including paleontological resources. Mitigation measures have been

included to reduce the significance of potential impacts. Similar mitigation measures would be expected of other projects in the surrounding area, most of which share similar cultural, paleontological, and biological resources. Consequently, after mitigation, the incremental effects of the proposed Project would not contribute to a cumulative adverse impact on these resources. Therefore, the Project would have a less-than-significant impact with mitigation incorporated.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures BIO-1 through BIO-7, CUL-1, through CUL-3.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.21b - Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are significant when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects.)?

As described in the impact analyses in sections of this IS/MND, any potentially significant impacts of the Project would be reduced to a less-than-significant level following incorporation of the mitigation measures listed in Appendix A – Mitigation Monitoring and Reporting Program. All planned projects in the vicinity of the Project would be subject to review in separate environmental documents and required to conform to the 2030 City of Visalia General Plan and the Visalia Municipal Code. The Project would also be required to mitigate for Project-specific impacts and provide appropriate engineering to ensure the Project meets all applicable federal, State, and local regulations and codes. As currently designed and with compliance with the recommended mitigation measures, the proposed Project would not be cumulative. Thus, the cumulative impacts of past, present, and reasonably foreseeable future projects would be less than cumulatively considerable.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures AG-1 BIO-1 through BIO-7, CUL-1 through CUL-3, GEO-1, GEO-2, NSE-1, TRA-1, and TRA-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.4.21c - Does the Project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

The ways in which people can be subject to substantial adverse effects from projects include potential exposure to significant levels of local air pollutants; potential exposure to seismic and flooding hazards; potential exposure to hazardous materials; potential exposure to

contamination from hazardous materials; potential exposure to traffic hazards; and potential exposure to excessive noise levels. The risks from these potential hazards would be avoided or reduced to less-than-significant levels through compliance with existing laws, regulations, or requirements. All of the Project's impacts, both direct and indirect that are attributable to the Project were identified and mitigated to a less-than-significant level. As shown in the *Mitigation Monitoring and Reporting Program*, the Project proponent has agreed to implement mitigation substantially reducing or eliminating impacts of the Project.

Therefore, the Project would not either directly or indirectly cause substantial adverse effects on human beings because all potentially adverse direct impacts of the proposed Project are identified as having no impact, less-than-significant impact, or less-than-significant impact with mitigation incorporated.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures AG-1, BIO-1 through BIO-7, CUL-1 through CUL-3, GEO-1, GEO-2, NSE-1, TRA-1, and TRA-2.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant with mitigation incorporated.***

SECTION 4 - LIST OF PREPARERS

4.1 - Lead Agency

- Paul Bernal – Community Development Director

4.2 - QK Inc.

- Jaymie Brauer – Principal Planner
- Ethan Davis – Associate Planner
- Trevor Stearns – Associate Planner

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APPENDIX A

MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
AG - 1: Prior to the issuance of grading or building permits, the Project proponent shall mitigate impacts for loss of Prime Farmland and Farmland of Statewide Importance on the Project site at a 1:1 ratio. The Project proponent shall implement one or more of the following measures to mitigate the loss: Payment of In-Lieu Fees, Mitigation Banks, Fee Title Acquisition, Conservation Easements, and/or Land Use Regulation on land(s)within the Southern San Joaquin Valley of California, specifically within Kern County, Tulare County, Kings County, Fresno County, or Madera County. The City shall require, at a minimum: evidence that the preserved land has adequate water supply, agricultural zoning, evidence of land encumbrance documentation, documentation that the easement/regulations are permanent and monitored, and documentation that the mitigation strategy is appropriately endowed. This mitigation shall be verified by the City prior to issuance of grading or building permits. Should the City of Visalia develop an Agricultural Mitigation Program before future construction within the Project begins, the Project proponent shall mitigate for the loss of agricultural land pursuant to the Program that is adopted by the City.	Prior to grading or building permits	**Lead Agency**		
MM BIO-1: Within 14 days of the start of Project activities, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of these species. The pre-activity survey shall include walking transects to identify the presence of burrowing owls and their burrows and American	Prior to construction	**Lead Agency**		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
badgers, and San Joaquin kit foxes and their dens. The transects shall be spaced at no greater than 30-foot intervals in order to obtain 100 percent coverage of the Project site and a 250-foot buffer. Areas devoid of habitat incapable of supporting these species would not require surveys. If no evidence of these special-status species is detected, no further action is required.				
MM BIO-2: If dens or burrows that could support these species are discovered during the pre-activity survey conducted under Measure BIO-1, avoidance buffers outlined below shall be established. No work shall occur within these buffers unless a qualified biologist approves and monitors the activity. Burrowing Owl (active burrows) • Non-breeding season: September 1 – January 31 – 160 feet • Breeding season: February 1 – August 31 – 250 feet American Badger and San Joaquin Kit Fox • Potential or Atypical den – 50 feet • Known den – 100 feet • Natal or pupping den – Contact agencies for further guidance Any Ecological Sensitive Area (ESA) buffer established shall remain in place until the species has left on its own. Once the species has left, the burrow may be monitored using trail cameras	Prior to construction	**Lead Agency**		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
or a tracking medium such as diatomaceous earth once the species has left. If no species are detected for a minimum of three consecutive days/nights, the burrow may be hand excavated under the direct supervision of a qualified biologist. All burrow tunnels must be hand excavated to their terminus or examined before backfilling to ensure no burrowing owls, kit foxes, or other animals are hiding. Alternatively, burrowing owls can be passively excluded from a non-nest burrow through the installation of one-way doors. Prior to engaging in such passive exclusion activities, an Exclusion Plan shall be prepared following the guidance outlined in the CDFW's Staff Report on Burrowing Owl Mitigation (QK, 2021). The Exclusion Plan shall be submitted to the CDFW for review and approval prior to implementation. Once approved, one-way doors may be installed at non-nest burrows. The doors shall be monitored for a minimum of three days to ensure burrowing owls have left the burrow. The burrow may then be excavated as described above. If at any time during excavation a burrowing owl is detected within the burrow, excavation activities shall immediately cease, and the one-way door reinstalled and monitored until the owl has left the burrow. Hand excavation may then resume. Exclusion efforts shall be documented.				
MM BIO-3: The following avoidance and minimization measures shall be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the U.S. Fish and Wildlife Service Standardized Recommendations	Prior to construction	**Lead Agency**		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (QK, 2021). • Project-related vehicles shall observe a daytime speed limit of 20 mph throughout the site in all Project areas, except on County roads and State and federal highways. • All Project activities shall occur during daylight hours, but if work must be conducted at night, then a night-time construction speed limit of 10 mph shall be established. • Off-road traffic outside of designated Project areas shall be prohibited. • To prevent inadvertent entrapment of kit foxes or other animals during the construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. • Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW shall be contacted before proceeding with the work. • In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW shall be contacted for guidance. • All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes and burrowing owls				

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity until the fox has escaped. • All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from a construction or Project site. • No pets, such as dogs or cats, shall be permitted on the Project site. • Project-related use of rodenticides and herbicides shall be restricted. • A representative shall be appointed by the Project proponent, who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The representative shall be identified during the employee education program, and their name and telephone numbers shall be provided to the USFWS and CDFW. • Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) shall be recontoured if necessary and revegetated to promote restoration of the area to pre-Project conditions. An area subject to "temporary" disturbance means any				

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
area that is disturbed during the Project, but after Project completion, will not be subject to further disturbance and has the potential to be revegetated. • Any Project personnel who are responsible for inadvertently killing or injuring one of these species shall immediately report the incident to their representative. This representative shall contact the CDFW (and USFWS in the case of San Joaquin kit fox) immediately in the case of a dead, injured, or entrapped San Joaquin kit fox, American badger, or burrowing owl. • The Sacramento Fish and Wildlife office and CDFW Region 4 office shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project-related activities. The CDFW shall be notified in the case of accidental death to an American badger or western burrowing owl. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. • New sightings of San Joaquin kit fox, American badger, or burrowing owl shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where a San Joaquin kit fox was observed shall also be provided to the USFWS.				
MM BIO-4: If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys shall be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk	Prior to construction	**Lead Agency**		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
Technical Advisory Committee (QK, 2021). The surveys shall be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys shall be conducted during at least two survey periods. If no Swainson's hawk nests are found, no further action is required.				
MM BIO-5: If an active Swainson's hawk nest is discovered at any time within 0.5 miles of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to the construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Construction activities shall not occur within 500 feet of an active nest but depending upon conditions at the site, this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist.	Prior to construction	**Lead Agency**		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
MM BIO-6: If Project activities must occur during the nesting season (February 1 to September 15), pre-activity nesting bird surveys shall be conducted within seven days prior to the start of construction at the construction site, plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). If no active nests are found, no further action is required. However, existing nests may become active, and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. If active nests are found during the survey or at any time during the construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer shall remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.	Prior to construction	**Lead Agency**		
MM BIO-7: Prior to the initiation of construction activities, all personnel shall attend a Worker Environmental Awareness Training program developed by a qualified biologist. The program shall include information on the life histories of special-status species with the potential to occur on the Project, their legal status, the course of action shall these species be encountered onsite, and avoidance and minimization measures to protect these species.	Prior to construction	**Lead Agency**		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
MM CUL-1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified archaeologist can evaluate the find and make recommendations. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, fire-affected rock, and historic resources such as glass, metal, wood, brick, or structural remnants. Implementation of the mitigation measure below would ensure that the proposed Project would not cause a substantial adverse change in the significance of a historical resource.	During construction	**Lead Agency**		
MM CUL-2: Prior to any ground disturbance, if the City of Visalia receives a request from a Native American tribal group, a surface inspection of the site shall be conducted by a tribal monitor. The tribal staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, including information on potential cultural material, finds, and any excavation contractor, which will include information on potential cultural material finds, and the procedures to be enacted if resources are found. The tribal cultural staff shall monitor the site during grading activities. Prior to any ground disturbance, the applicant shall offer the tribe the opportunity to provide a Native American Monitor during	Prior to construction	Lead Agency		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe.				
MM CUL-3: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of the discovery of human remains, at the direction of the county coroner.	During construction			
MM GEO-1: Prior to issuing of grading or building permits, if required, the Project applicant shall submit to the Lead Agency (1) the approved Storm Water Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board. The requirements of the SWPPP and NPDES shall be incorporated into design specifications and construction contracts. Recommended best management practices for the construction phase may include the following: • Stockpiling and disposing of demolition debris, concrete, and soil properly.	Prior to construction	Lead Agency		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
• Protecting existing storm drain inlets and stabilizing disturbed areas. • Implementing erosion controls. • Properly managing construction materials. • Managing waste, aggressively controlling litter, and implementing sediment controls. Evidence of the approved SWPPP shall be submitted to the Lead Agency.				
MM GEO-2: Prior to any ground-disturbing activities, the Project owner shall develop and implement a Paleontological Worker Education and Awareness Program. If paleontological resources are discovered during ground-disturbing activities (e.g., during Project construction or decommissioning), all earthwork or other types of ground disturbance within 50 feet of the find shall stop immediately until a qualified professional paleontologist (meeting the standards of the Society of Vertebrate Paleontology [SVP]) can assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue or recommend salvage and recovery of the fossil. The paleontologist may also propose modifications to the stop-work radius based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage are required, recommendations will be consistent with the Society of Vertebrate Paleontology standards that are current as of the discovery and with currently accepted scientific practice.	Prior to construction	**Lead Agency**		

Mitigation Measure	Timeframe	Responsible Monitoring Agency	Date	Initial
MM NSE-1: During construction, the contractor shall implement the following measures: a. All stationary construction equipment on the Project site shall be located so that noise-emitting objects or equipment face away from any potential sensitive receptors. b. The construction contractor shall ensure that all construction equipment is equipped with manufacturer-approved mufflers and baffles. During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers. c. Construction activities shall take place during daylight hours, when feasible.	During Construction	Lead Agency		
MM TRA-1: Prior to the issuance of building permits, the developer shall pay its pro-rata share for signalization of the following intersections: a. Riggin Avenue at County Center Street b. Riggin Avenue at Giddings Street c. Ferguson Avenue at Mooney Boulevard	Prior to Building Permits	Lead Agency		
MM TRA-2: Prior to the issuance of building permits, the developer shall pay its pro-rata share to widen the eastbound approach to two left-turn lanes, two through-lanes, and one right-turn lane at the intersection of Riggin Avenue at Dinuba Boulevard (SR 63).	Prior to Building Permits	Lead Agency		

Gunning Development

Air Quality & Greenhouse Gas Impact Assessment
February 2021

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Gunning Development
Air Quality & Greenhouse Gas Impact Assessment

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Executive Summary

This Air Quality and Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts related to the Gunning Development (Project). The Project site is generally located at the Northwest quadrant of the Riverway Drive and Mooney Boulevard intersection. Regional access to the site is provided by State Route (SR) 198 and SR 63. The Project seeks to develop approximately 555 single family dwelling units. Figure 1 shows the site's regional context. Figure 2 shows the Project location within the City of Visalia. Figure 3 shows the tentative layout of the proposed Project.

The City of Visalia/Tulare County is located in the San Joaquin Valley Air Basin (SJVAB). The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Visalia is classified as Mediterranean, with moist cool winters and dry warm summers.

Air quality within the Project area is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs.

IMPACTS

Short-Term (Construction) Emissions

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust generated by equipment and vehicles. Table E-1 shows the estimated construction emissions that would be generated from the Project. Results of the analysis show that emissions generated from the construction phase of the Project will not exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) emission thresholds.

Table E-1
Project Construction Emissions

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Total Project Construction Emissions (tons)	10.18	11.36	10.62	0.02	2.87	1.44	2037.37
Project Emissions tons per year (Phased over 3.5 years)	**2.91**	**3.25**	**3.03**	**0.005**	**0.82**	**0.41**	**582.11**
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod

Long-Term Emissions

Long-Term emissions from the Project would be generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment.

1. Localized Mobile Source Emissions – Ozone/Particulate Matter

Operational emissions associated with the Project are shown in Table E-2. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants considering adherence to all applicable SJVAPCD Rules. Compliance with Rule 9510 will reduce Project Operational NOx Emissions by 33.3% and PM10 emissions by 50% according to the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015.

Table E-2
Project Operational Emissions (tons/year)

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Opeational Emissions	19.09	8.10	6.41	0.08	2.83	1.63	9842.41
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod

2. Toxic Air Contaminants (TAC)

An evaluation of nearby land uses shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors.

3. Odors

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are not located within the vicinity of the Project, and therefore these existing odor sources will not affect the Project or its future users.

4. Naturally Occurring Asbestos (NOA)

Asbestos is a term used for several types of naturally occurring fibrous minerals found in many

parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Construction of the Project may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021. Compliance with Rule 8021 would limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities associated with the Project.

5. Greenhouse Gas Emissions

The California Air Resources Board (CARB), in consultation with Metropolitan Planning Organization (MPOs), has provided each affected region with reduction targets for Greenhouse Gas (GHGs) emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Tulare County Association of Government (TCAG) region, CARB set targets at thirteen (13) percent per capita decrease in 2020 and a sixteen (16) percent per capita decrease in 2035 from a base year of 2005. TCAG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Tulare County region would achieve the prescribed emissions targets.

In 2009, the SJVAPCD adopted the following guidance documents applicable to projects within the San Joaquin Valley:

- ✓ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009), and
- ✓ District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009).

This guidance and policy are the reference documents referenced in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD (2015) acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

In December 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board

adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table E-3 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is less than the threshold identified by the SCAQMD.

Table E-3
Project Operational Greenhouse Gas Emissions

Summary Report	CO_2e
Project Operational Emissions Per Year	9910 MT/yr

Source: CalEEMod

CEQA ENVIRONMENTAL CHECKLIST

In accordance with the California Environmental Quality Act (CEQA), the effects of the Project were evaluated to determine if they will result in Project-Specific significant adverse impacts on the environment that are peculiar to the Project or its site that differ from those impacts already analyzed and disclosed in the City's General Plan EIR. The criteria used to determine the significance of an impact with respect to air quality and greenhouse gas emissions are summarized below.

1. Air Quality

The criteria used to determine the significance of an air quality impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines. Accordingly, air quality impacts resulting from the Project are considered significant if the Project would:

- ✓ Conflict with or obstruct implementation of the applicable air quality plan?

The primary way of determining consistency with the air quality plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. TCAG uses the

growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the City of Visalia General Plan, which was adopted in 2014. The Project would be consistent with the General Plan upon preparation and approval of a master plan in accordance with General Plan Policy LU-P-22, which addresses annexation and development of project sites that are located outside of the current Urban Development Boundary. Therefore, the Project would be consistent with the population growth and VMT applied in the plan and the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any air quality plans. Therefore, no mitigation is needed.

- ✓ 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?

The Tulare County area is nonattainment for Federal and State air quality standards for ozone, in attainment of Federal standards and nonattainment for State standards for PM10, and nonattainment for Federal and State standards for PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Inconsistency with any of the plans would be considered a cumulatively adverse air quality impact. As discussed in Section 4.1.1, the Project is consistent with the currently adopted General Plan for the City of Visalia and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or state ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below thresholds of significance. As discussed in Section 3.1, the SJVAPCD has established thresholds of significance for determining environmental significance which are provided in Table 6.

As discussed above in Section 3.2 and 3.3, results of the analysis show that emissions generated from construction and operation of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, no mitigation is needed.

✓ Expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the proposed Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided in Table 4. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 4 indicates that new sensitive land uses should not be sited within 500 feet of a freeway/urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. The Project is located more than 14,000 feet from the SR 198 freeway. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors. Therefore, no mitigation is needed.

Short-Term Impacts

The annual emissions from the construction phase of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, construction emissions associated with the Project are considered less than significant.

Long-Term Impacts

Long-Term emissions from the Project are generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment. Emissions from long-term operations generally represent a project's most substantial air quality impact. Table E-2 summarizes the Project's operational impacts by pollutant. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore, operational emissions associated with the Project are considered less than significant.

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

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. None of the facilities shown in Table 5 are located within the vicinity of the Project. Therefore, no mitigation is needed.

2. *Greenhouse Gas Emissions*

The criteria used to determine the significance of a greenhouse gas impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines. Accordingly, greenhouse gas impacts resulting from the Project are considered significant if the Project would:

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

The SJVAPCD acknowledges the current absence of numerical thresholds and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table E-3 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is less than the threshold identified by the SCAQMD.

The resulting permanent greenhouse gas increases related to Project operations would be within the greenhouse gas increases analyzed in the General Plan EIR, so there would be no increase in severity to the previously-identified greenhouse gas impacts, and implementation of the Project

will not result in Project-specific or site-specific significant adverse impacts from greenhouse gas emissions within the Project study area. Therefore, no mitigation measures are needed.

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

California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

SB 375 requires MPOs to adopt a SCS or APS that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the TCAG region, CARB set targets at thirteen (13) percent per capita decrease in 2020 and a sixteen (16) percent per capita decrease in 2035 from a base year of 2005.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. TCAG uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the project is the City of Visalia General Plan, which was adopted in 2014.

The Project is consistent with the currently adopted General Plan for the City of Visalia and the adopted 2018 RTP/SCS and is therefore consistent with the population growth and VMT applied in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project (Table E-3) are less than the threshold identified by the SCAQMD (see the discussion above).

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the

initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit. Below is a list of applicable strategies in the Scoping Plan and the Project's consistency with those strategies.

- California Light-Duty Vehicle GHG Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs for long-term climate change goals.

    - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to light-duty vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

- Energy Efficiency – Pursuit of comparable investment in energy efficiency from all retail providers of electricity in California. Maximize energy efficiency building and appliance standards.

    - The Project is consistent with this reduction measure. Though this measure applies to the State to increase its energy standards, the Project would comply with this measure through existing regulation. The Project would not conflict or obstruct this reduction measure.

- Low Carbon Fuel – Development and adoption of the low carbon fuel standard.

    - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to the fuel used by vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project furthers the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

1.0 Introduction

1.1 Description of the Region/Project

This Air Quality and Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts related to the Gunning Development (Project). The Project site is generally located at the Northwest quadrant of the Riverway Drive and Mooney Boulevard intersection. Regional access to the site is provided by State Route (SR) 198 and SR 63. The Project seeks to develop approximately 555 single family dwelling units. Figure 1 shows the site's regional context. Figure 2 shows the Project location within the City of Visalia. Figure 3 shows the tentative layout of the proposed Project.

The City of Visalia/Tulare County is located in the San Joaquin Valley Air Basin (SJVAB). The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Visalia is classified as Mediterranean, with moist cool winters and dry warm summers.

1.2 Regulatory

Air quality within the Project area is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within the City of Visalia/Tulare County are discussed below along with their individual responsibilities.

1.2.1 *Federal Agencies*

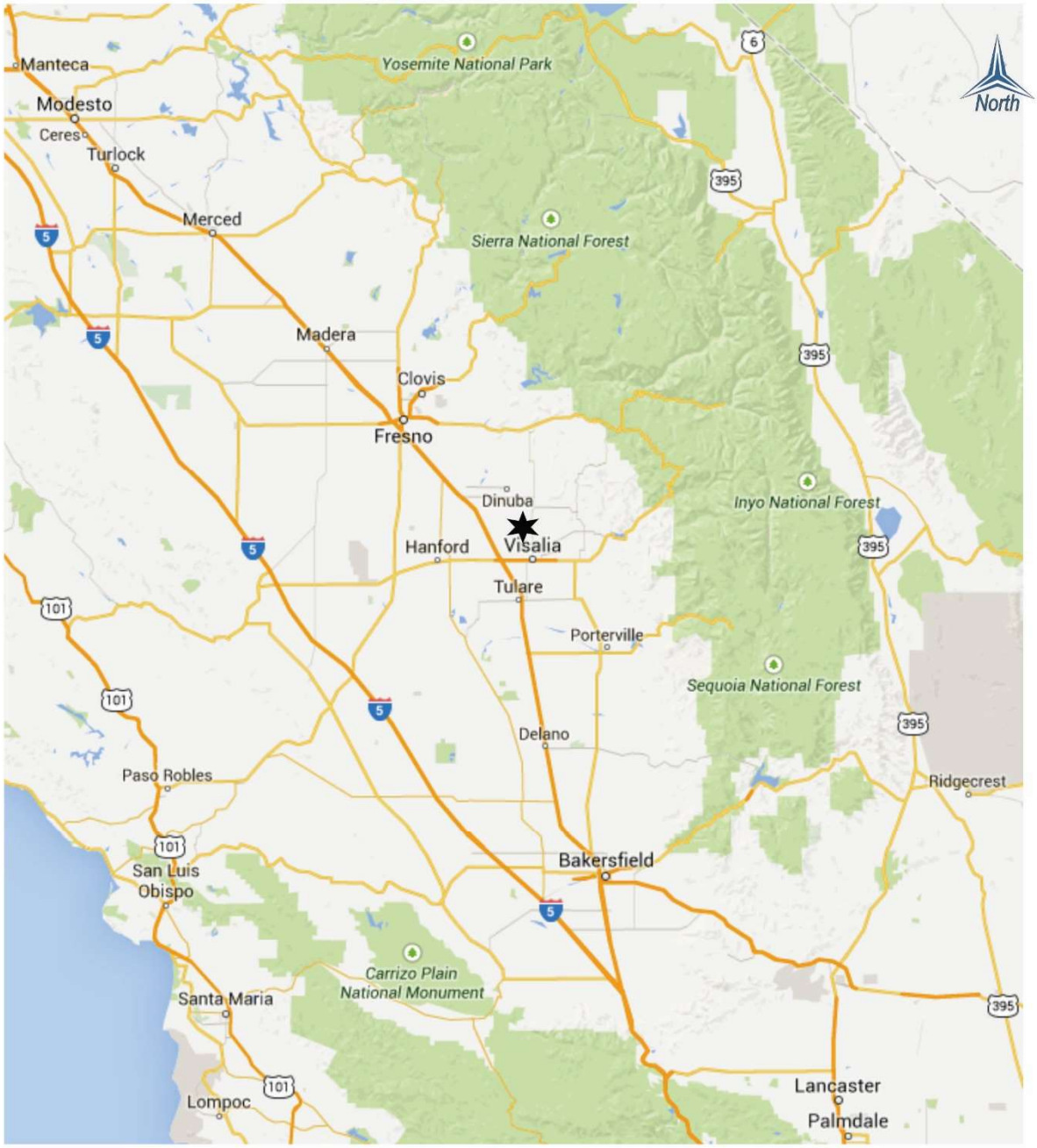
- ✓ **U.S. Environmental Protection Agency (EPA)**

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

  The CAA and the national ambient air quality standards identify levels of air quality for six "criteria" pollutants, which are considered the maximum levels of ambient air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone, carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, particulate matter, and lead.

Gunning Development
Regional Location

Figure 1



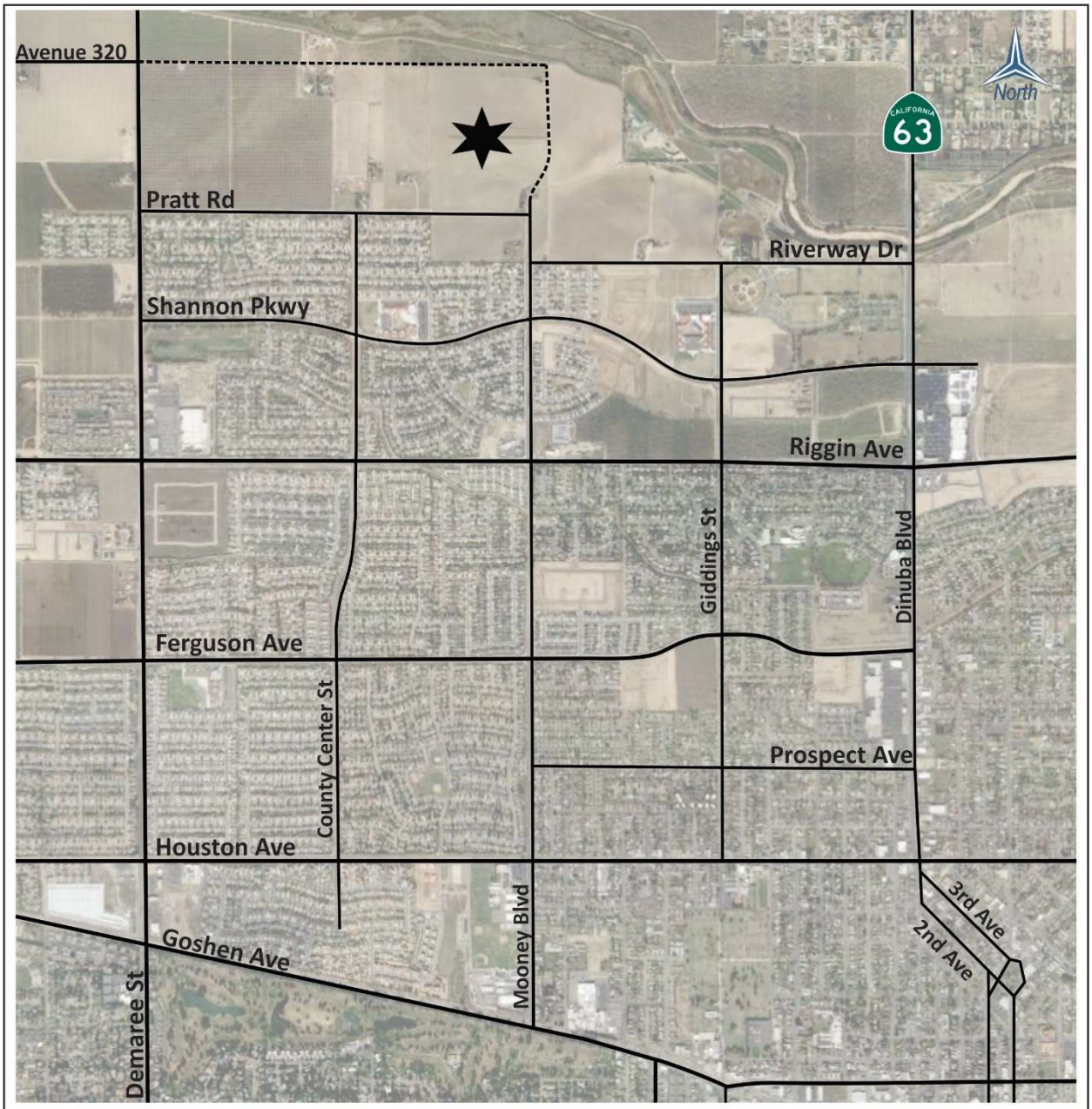
LEGEND

★ Project Location

VRPA TECHNOLOGIES, INC.

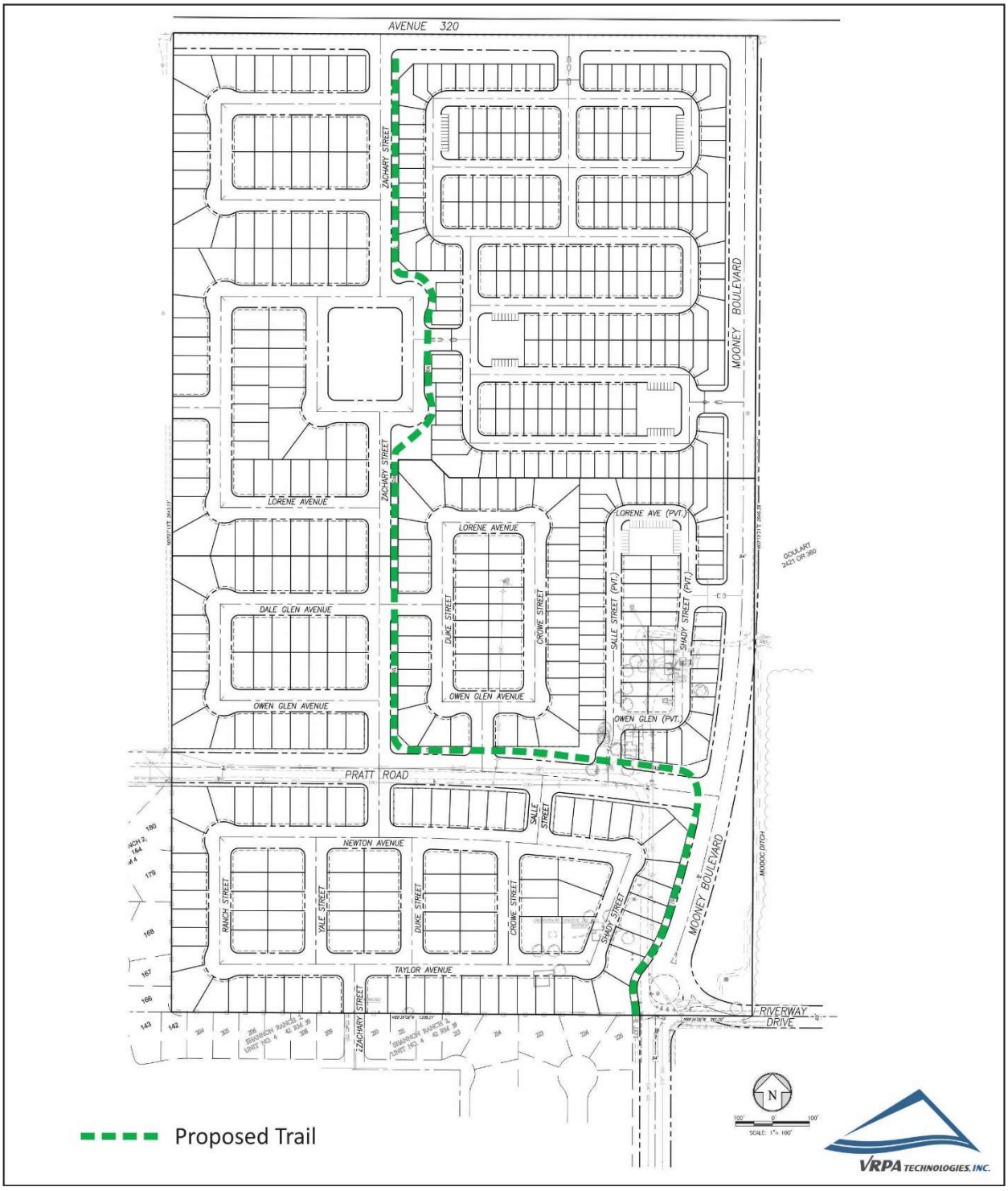
Gunning Development
Project Location

Figure 2



Gunning Development
Project Site Plan

Figure 3



CAA Section 176(c) (42 U.S.C. 7506(c)) and EPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and Transportation Improvement Program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the Metropolitan planning organization (MPO) or accepted by the U.S. Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). However, because the State Implementation Plan (SIP) for particulate matter 10 microns or less in diameter (PM10), particulate matter 2.5 microns or less in diameter (PM2.5), and Ozone address attainment of both the State and federal standards, for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the State standards. Compliance with the State air quality standards is provided on the pages following this federal conformity discussion.

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

1.2.2 *Federal Regulations*

✓ **State Implementation Plan (SIP)/ Air Quality Management Plans (AQMPs)**

To ensure compliance with the NAAQS, EPA requires states to adopt SIP aimed at improving air quality in areas of nonattainment or a Maintenance Plan aimed at maintaining air quality in areas that have attained a given standard. New and previously submitted plans, programs, district rules, state regulations, and federal controls are included in the SIPs. Amendments made in 1990 to the federal CAA established deadlines for attainment based on an area's current air pollution levels. States must enact additional regulatory programs for nonattainment's areas in order to adhere with the CAA Section 172. In California, the SIPs must adhere to both the NAAQS and the California Ambient Air Quality Standards (CAAQS).

To ensure that State and Federal air quality regulations are being met, Air Quality Management Plans (AQMPs) are required. AQMPs present scientific information and use analytical tools to identify a pathway towards attainment of NAAQS and CAAQS. The San Joaquin Valley Air Pollution Control District (SJVAPCD) develops the AQMPs for the region where the Tulare County Association of Governments (TCAG) operates. The regional air districts begin the SIP process by submitting their AQMPs to the California Air Resources Board (CARB). CARB is responsible for revising the SIP and submitting it to EPA for approval. EPA then acts on the SIP in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations Title 40, Chapter 1, Part 52, Subpart 7, Section

52.220.

✓ **Transportation Control Measures**

One particular aspect of the SIP development process is the assessment of available transportation control measures (TCMs) as a part of making progress towards clean air goals. TCMs are defined in Section 108(f)(1) of the CAA and are strategies designed to reduce vehicle miles traveled, vehicle idling, and associated air pollution. These goals are generally achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

✓ **Energy Policy Act of 1992 (EPAct)**

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of alternative fueled vehicles (AFVs). States are also required by the act to consider a variety of incentive programs to help promote AFVs.

1.2.3 *State Agencies*

✓ **California Air Resources Board (CARB)**

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

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

States may establish their own standards, provided the State standards are at least as stringent as the NAAQS. California has established California Ambient Air Quality Standards (CAAQS) pursuant to California Health and Safety Code (CH&SC) [§39606(b)] and its

predecessor statutes.

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

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

Tulare County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Figure 4. In addition to Tulare County, the SJVAB includes Fresno, Kern, Kings, Tulare, Merced, San Joaquin, and Stanislaus Counties. Federal and State standards for criteria pollutants are provided in Table 1.

1.2.4 *State Regulations*

✓ **CARB Mobile-Source Regulation**

The State of California is responsible for controlling emissions from the operation of motor vehicles in the State. Rather than mandating the use of specific technology or the reliance on a specific fuel, CARB's motor vehicle standards specify the allowable grams of pollutant per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved.

✓ **California Clean Air Act**

The CCAA was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CCAA establishes more stringent ambient air quality standards than those included in the Federal CAA. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the CH&SC [§39606(b)], which are similar to the federal standards. The SJVAPCD is one of 35 AQMDs that have prepared air quality management plans to accomplish a five percent (5%) annual reduction in emissions documenting progress toward the State ambient air quality standards.

Gunning Development
San Joaquin Valley Air Basin

Figure 4

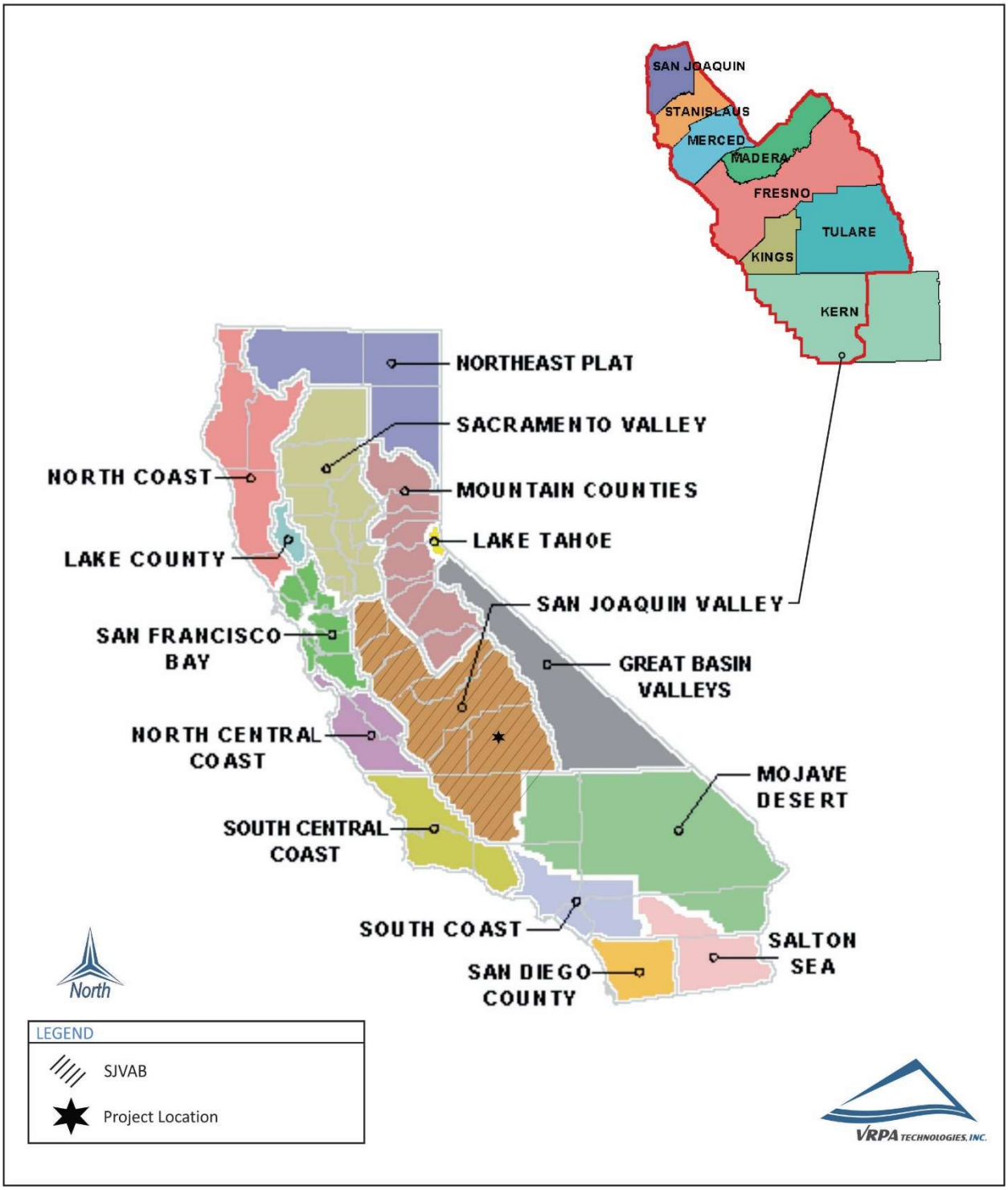


Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3) [8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM10) [9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		--		
Fine Particulate Matter (PM2.5) [9]	24 Hour	--	--	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 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)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 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) [10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	--	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2) [11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for cetain areas) [11]	--	
	Annual Arithmetic Mean	--		0.030 ppm (for cetain areas) [11]	--	
Lead [12,13]	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 [14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride [12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

See footnotes on next page ...

Footnotes:

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 8-hour 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. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. 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 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. 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 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.
12. 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.
13. 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.
14. 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.

✓ **Tanner Air Toxics Act**

California regulates Toxic Air Contaminants (TACs) primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted EPA's list of Hazardous Air Pollutants (HAPs) as TACs. Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

These rules and standards provide for:

- More stringent emission standards for some new urban bus engines, beginning with 2002 model year engines.
- Zero-emission bus demonstration and purchase requirements applicable to transit agencies
- Reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule.

✓ **AB 1493 (Pavley)**

AB 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicles by an estimated 18 percent in 2020 and by 27 percent in 2030 [Association of Environmental Professionals (AEP) 2007)]. In 2005, the CARB requested a waiver from U.S. EPA to enforce the regulation, as required under the CAA. Despite the fact that no waiver had ever been denied over a 40-year period, the then Administrator of the EPA sent Governor Schwarzenegger a letter in December 2007, indicating he had denied the waiver. On March 6, 2008, the waiver denial was formally issued in the Federal Register. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider denial of the waiver. EPA scheduled a re-hearing on March 5, 2009. On June 30,

2009, EPA granted a waiver of CAA preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year.

- ✓ **Assembly Bill 32 (California Global Warming Solutions Act of 2006)**

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. December 31, 2020 is the deadline for achieving the 2020 GHG emissions cap. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions enough to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions.

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan adopted in December of 2008. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit.

- ✓ **Senate Bill 375**

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the

targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets.

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

✓ **Executive Order B-30-15**

Executive Order B-30-15, which was signed by Governor Brown in 2016, establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

✓ **California Global Warming Solutions Act of 2006: emissions limit, or SB 32**

SB 32 is a California Senate bill expanding upon AB 32 to reduce greenhouse gas (GHG) emissions. The lead author is Senator Fran Pavley and the principal co-author is Assembly member Eduardo Garcia. SB 32 was signed into law on September 8, 2016, by Governor Brown. SB 32 sets into law the mandated reduction target in GHG emissions as written into Executive Order B-30-15. SB 32 requires that there be a reduction in GHG emissions to 40% below the 1990 levels by 2030. Greenhouse gas emissions include carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The California Air Resources Board (CARB) is responsible for ensuring that California meets this goal. The provisions of SB 32 were added to Section 38566 of the Health and Safety Code subsequent to the bill's approval. The bill went into effect January 1, 2017. SB 32 builds onto Assembly Bill (AB) 32 written by Senator Fran Pavley and Assembly Speaker Fabian Nunez passed into law on September 27, 2006. AB 32 required California to reduce greenhouse gas emissions to 1990 levels by 2020 and SB 32 continues that timeline to reach the targets set in Executive Order B-30-15. SB 32 provides another intermediate target between the 2020 and 2050 targets set in Executive Order S-3-05.

1.2.5 *Regional Agencies*

✓ **San Joaquin Valley Air Pollution Control District**

The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Tulare County and throughout the SJVAB. The District also has responsibility for monitoring air quality and setting and enforcing limits

for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under State law.

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

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

The SJVAPCD has prepared the following State Implementation Plans to address ozone, PM-10 and PM2.5 that currently apply to the Visalia non-attainment area:

- The 2016 Ozone Plan (2008 standard) was adopted by SJVAPCD on June 16, 2016 and subsequently adopted by ARB on July 21, 2016.
- The 2013 1-Hour Ozone Plan (revoked 1997 standard) was adopted by the SJVAPCD on September 19, 2013. EPA withdrew its approval of the plan due to litigation. The District plans to submit a "redesignation substitute" to EPA to maintain its attainment status for this revoked ozone standard.
- The 2007 PM-10 Maintenance Plan (as revised in 2015) was approved by EPA on July 8, 2016 (effective September 30, 2016).
- The 2012 PM2.5 Plan (as revised in 2015) was approved by EPA on August 16, 2016 (effective September 30, 2016).

The SJVAPCD Plans identified above represent SJVAPCD's plan to achieve both state and federal air quality standards. The regulations and incentives contained in these documents must be legally enforceable and permanent. These plans break emissions reductions and compliance into different emissions source categories.

The SJVAPCD also prepared the *Guide for Assessing and Mitigation Air Quality Impacts* (GAMAQI), dated March 19, 2015. The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project

emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

1.2.6 *Regional Regulations*

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. Following, are significant rules that will apply to the Project.

✓ **Regulation VIII – Fugitive PM10 Prohibitions**

Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce PM_{10} 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, landfill operations, etc. The proposed Project will be required to comply with this regulation. Regulation VIII control measures are provided below:

1. *All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.*
2. *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.*
3. *All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.*
4. *When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.*
5. *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.*
6. *Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.*
7. *Within urban areas, track out shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.*

✓ **Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities**

District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The

proposed Project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

✓ **Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations**

If asphalt paving will be used, then paving operations of the proposed Project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

✓ **Rule 9510 – Indirect Source Review (ISR)**

The purpose of this rule is to fulfill the District's emission reduction commitments in the PM10 and Ozone Attainment Plans, achieve emission reductions from construction activities, and to provide a mechanism for reducing emissions from the construction of and use of development projects through off-site measures. The rule is expected to reduce nitrogen oxides and particulates throughout the San Joaquin Valley by more than 10 tons per day. Rule 9510 requires single-family development projects larger than 50 residential units to reduce smog-forming and particulate emissions generated by their projects. The Project includes the development of 555 single family dwelling units and will be required to comply with this rule.

1.2.7 *Local Plans*

✓ **City of Visalia General Plan**

California State Law requires every city and county to adopt a comprehensive General Plan to guide its future development. The General Plan essentially serves as a "constitution for development"— the document that serves as the foundation for all land use decisions. The City of Visalia General Plan includes various elements, including air quality and greenhouse gases, that address local concerns and provides goals and policies to achieve its development goals.

✓ **City of Visalia Climate Action Plan**[1]

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

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

1 City of Visalia Climate Action Plan, December 2013

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

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

The City of Visalia has instituted various actions in an effort to meet the year 2020 and 2030 mitigation targets. The measures identified to achieve mitigation targets are organized into five categories: Energy Systems, Transportation, Water and Resource Conservation, Transportation / Land Use, and Waste and Resource Conservation. Included in the Transportation category is a measure regarding the expansion of bicycle paths. The Project includes the development of multi-use trails, as depicted in Figure 3, which coincides with the goals of the CAP.

2.0 Environmental Setting

This section describes existing air quality within the San Joaquin Valley Air Basin and in Tulare County, including the identification of air pollutant standards, meteorological and topological conditions affecting air quality, and current air quality conditions. Air quality is described in relation to ambient air quality standards for criteria pollutants such as, ozone, carbon monoxide, and particulate matter. Air quality can be directly affected by the type and density of land use change and population growth in urban and rural areas.

2.1 Geographical Location

The SJVAB is comprised of eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Encompassing 24,840 square miles, the San Joaquin Valley is the second largest air basin in California. Cumulatively, counties within the Air Basin represent approximately 16 percent of the State's geographic area. The Air Basin is bordered by the Sierra Nevada Mountains on the east (8,000 to 14,492 feet in elevation), the Coastal Range on the west (4,500 feet in elevation), and the Tehachapi Mountains on the south (9,000 feet elevation). The San Joaquin Valley is open to the north extending to the Sacramento Valley Air Basin.

2.2 Topographic Conditions

Tulare County is located within the San Joaquin Valley Air Basin [as determined by the California Air Resources Board (CARB)]. Air basins are geographic areas sharing a common "air shed." A description of the Air Basin in the County, as designated by CARB, is provided in paragraph below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the SJVAB result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access into the Valley from the west, the Tehachapi's prevent southerly passage of airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These topographic features result in weak airflow that becomes restricted vertically by high barometric pressure over the Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

2.3 Climate Conditions

Tulare County is located in one of the most polluted air basins in the country. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Tulare County is classified as Mediterranean, with moist cool winters and dry warm summers.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, carbon monoxide (CO), for example, may form high concentrations when wind speed is low. During the winter, Tulare County experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Precipitation and fog tend to reduce or limit some pollutant concentrations. Ozone needs sunlight for its formation, and clouds and fog block the required radiation. CO is slightly water-soluble so precipitation and fog tends to "reduce" CO concentrations in the atmosphere. PM10 is somewhat "washed" from the atmosphere with precipitation. Precipitation in the San Joaquin Valley is strongly influenced by the position of the semi-permanent subtropical high-pressure belt located off the Pacific coast. In the winter, this high- pressure system moves southward, allowing Pacific storms to move through the San Joaquin Valley. These storms bring in moist, maritime air that produces considerable precipitation on the western, upslope side of the Coast Ranges. Significant precipitation also occurs on the western side of the Sierra Nevada. On the valley floor, however, there is some down slope flow from the Coast Ranges and the resultant evaporation of moisture from associated warming results in a minimum of precipitation. Nevertheless, the majority of the precipitation falling in the San Joaquin Valley is produced by those storms during the winter. Precipitation during the summer months is in the form of convective rain showers and is rare. It is usually associated with an influx of moisture into the San Joaquin Valley through the San Francisco area during an anomalous flow pattern in the lower layers of the atmosphere. Although the hourly rates of precipitation from these storms may be high, their rarity keeps monthly totals low.

Precipitation on the San Joaquin Valley floor and in the Sierra Nevada decreases from north to south. Stockton in the north receives about 20 inches of precipitation per year, Fresno in the center, receives about 10 inches per year, and Bakersfield at the southern end of the valley receives less than 6 inches per year. This is primarily because the Pacific storm track often passes through the northern part of the state while the southern part of the state remains protected by the Pacific High. Precipitation in the San Joaquin Valley Air Basin (SJVAB) is confined primarily to the winter months with some also occurring in late summer and fall. Average annual rainfall for the entire San Joaquin Valley is approximately 5 to 16 inches. Snowstorms, hailstorms, and ice storms occur infrequently in the San Joaquin Valley and severe occurrences of any of these are very rare.

The winds and unstable air conditions experienced during the passage of storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure

and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong low-level temperature inversions and very stable air conditions. This situation leads to the San Joaquin Valley's famous Tule Fogs. The formation of natural fog is caused by local cooling of the atmosphere until it is saturated (dew point temperature). This type of fog, known as radiation fog, is more likely to occur inland. Cooling may also be accomplished by heat radiation losses or by horizontal movement of a mass of air over a colder surface. This second type of fog, known as advection fog, generally occurs along the coast.

Conditions favorable to fog formation are also conditions favorable to high concentrations of CO and PM10. Ozone levels are low during these periods because of the lack of sunlight to drive the photochemical reaction. Maximum CO concentrations tend to occur on clear, cold nights when a strong surface inversion is present and large numbers of fireplaces are in use. A secondary peak in CO concentrations occurs during morning commute hours when a large number of motorists are on the road and the surface inversion has not yet broken.

The water droplets in fog, however, can act as a sink for CO and nitrogen oxides (NOx), lowering pollutant concentrations. At the same time, fog could help in the formation of secondary particulates such as ammonium sulfate. These secondary particulates are believed to be a significant contributor of winter season violations of the PM10 and PM2.5 standards.

2.4 Anthropogenic (Man-made) Sources

In addition to climatic conditions (wind, lack of rain, etc.), air pollution can be caused by anthropogenic or man-made sources. Air pollution in the SJVAB can be directly attributed to human activities, which cause air pollutant emissions. Human causes of air pollution in the Valley consist of population growth, urbanization (gas-fired appliances, residential wood heaters, etc.), mobile sources (i.e., cars, trucks, airplanes, trains, etc.), oil production, agriculture, and other socioeconomic activities. The most significant factors, which are accelerating the decline of air quality in the SJVAB, are the Valley's rapid population growth and its associated increases in traffic, urbanization, and industrial activity.

Carbon monoxide emissions overwhelmingly come from mobile sources in the San Joaquin Valley; on-road vehicles contributed 34 percent, while other mobile vehicles, such as trains, planes, and off-road vehicles, contribute another 20 percent in 2012 according to emission projections from the CARB. Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.).

Ozone is the result of a photochemical reaction between Oxides of nitrogen (NOx) and Reactive Organic Gases (ROG). Mobile sources contribute 84 percent of all NOx emitted from anthropogenic sources based on data provided in Appendix B of the Air District's 2016 Ozone

Plan. In addition, mobile sources contribute 26 percent of all the ROG emitted from sources within the San Joaquin Valley.

The principal factors that affect air quality in and around Tulare County are:

1. The sink effect, climatic subsidence and temperature inversions and low wind speeds
2. Automobile and truck travel
3. Increases in mobile and stationary pollutants generated by local urban growth

Automobiles, trucks, buses and other vehicles using hydrocarbon (HC) fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters; animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Tulare County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities. Finally, industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Tulare County consist of agricultural production and processing operations, wine production, and marketing operations.

The primary contributors of PM10 emissions in the San Joaquin Valley are farming activities (22%) and road dust, both paved and unpaved (35%) in 2020 according to emission projections from the CARB. Fugitive windblown dust from “open” fields contributed 14 percent of the PM10.

The four major sources of air pollutant emissions in the SJVAB include industrial plants, motor vehicles, construction activities, and agricultural activities. Industrial plants account for significant portions of regional gaseous and particulate emissions. Motor vehicles, including those from large employers, generate substantial regional gaseous and particulate emissions. Finally, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). In addition to these primary sources of air pollution, urban areas upwind from Tulare County, including areas north and west of the San Joaquin Valley, can cause or generate emissions that are transported into Tulare County. All four of the major pollutant sources affect ambient air quality throughout the Air Basin.

2.4.1 *Motor Vehicles*

Automobiles, trucks, buses and other vehicles using hydrocarbon fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

2.4.2 *Agricultural and Other Miscellaneous Activities*

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters, animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Tulare County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities.

2.4.3 *Industrial Plants*

Industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Tulare County consist of agricultural production and processing operations, wine production, and marketing operations.

2.5 San Joaquin Valley Air Basin Monitoring

SJVAPCD and the CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, PM2.5, and PM10. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. The closest monitoring station to the Project is located at Visalia's N Church Street Monitoring Station. The station monitors particulates, ozone, carbon monoxide, and nitrogen dioxide. Monitoring data for the past three years is summarized in Table 2.

Table 3 identifies the Tulare County's attainment status. As indicated, the SJVAB is nonattainment for Ozone (1 hour and 8 hour) and PM. In accordance with the FCAA, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. The FCAA contains provisions for changing the classifications using factors such as clean air progress rates and requests from States to move areas to a higher classification.

On April 16, 2004 EPA issued a final rule classifying the SJVAB as extreme nonattainment for Ozone, effective May 17, 2004 (69 FR 20550). The (federal) 1-hour ozone standard was revoked on June 6, 2005. However, many of the requirements in the 1-hour attainment plan (SIP) continue to apply to the SJVAB. The current ozone plan is the (federal) 8-hour ozone plan adopted in 2007. The SJVAB was reclassified from a "serious" nonattainment area for the 8-hour ozone standard to "extreme" effective June 4, 2010.

Table 2
Maximum Pollutant Levels at Visalia's N Church Street Monitoring Station

Pollutant	Time Averaging	2017 Maximums	2018 Maximums	2019 Maximums	Standards	
					National	State
Ozone (O_3)	1 hour	0.109 ppm	0.112 ppm	0.093 ppm	-	0.09 ppm
Ozone (O_3)	8 hour	0.091 ppm	0.094 ppm	0.082 ppm	0.070 ppm	0.070 ppm
Nitrogen Dioxide (NO_2)	1 hour	58.1 ppb	69.2 ppb	70.7 ppb	100 ppb	0.18 ppm
Nitrogen Dioxide (NO_2)	Annual Average	10.0 ppb	10.0 ppb	9.0 ppb	0.053 ppm	0.030 ppm
Particulates (PM_{10})	24 hour	145.7 µg/m^3	159.9 µg/m^3	418.5 µg/m3	150 µg/m^3	50 µg/m^3
Particulates (PM_{10})	Federal Annual Arithmetic Mean	46.9 µg/m^3	52.0 µg/m^3	46.3 µg/m^3	-	20 µg/m^3
Particulates ($PM_{2.5}$)	24 hour	86.1 µg/m^3	86.8 µg/m^3	47.2 µg/m^3	35 µg/m^3	-
Particulates ($PM_{2.5}$)	Federal Annual Arithmetic Mean	16.2 µg/m^3	17.3 µg/m^3	12.9 µg/m^3	12 µg/m^3	12 µg/m^3

Source: California Air Resources Board (ADAM) Air Pollution Summaries, 1/29/2021

Table 3
Tulare County Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone - 1 Hour	Revoked in 2005	Nonattainment/Severe
Ozone - 8 Hour	Nonattainment/Extreme [a]	No State Standard
PM10	Attainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
Carbon Monoxide	Unclassified/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Lead (Particulate)	Unclassified/Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: ARB Website, 1/29/2021

a. Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

Notes:

National Designation Categories

Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

2.6 Air Quality Standards

The FCAA, first adopted in 1963, and periodically amended since then, established National Ambient Air Quality Standards (NAAQS). A set of 1977 amendments determined a deadline for the attainment of these standards. That deadline has since passed. Other CAA amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the CCAA (State 1988 Statutes, Chapter 568), which set forth a program for achieving more stringent California Ambient Air Quality Standards. The CARB implements State ambient air quality standards, as required in the CCAA, and cooperates with the federal government in implementing pertinent sections of the FCAA Amendments (FCAAA). Further, CARB regulates vehicular emissions throughout the State. The SJVAPCD regulates stationary sources, as well as some mobile sources. Attainment of the more stringent State PM10 Air Quality Standards is not currently required.

The EPA uses six "criteria pollutants" as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called the NAAQS.

The SJVAPCD operates regional air quality monitoring networks that provide information on average concentrations of pollutants for which State or federal agencies have established ambient air quality standards. Descriptions of nine pollutants of importance in Tulare County follow.

2.6.1 *Ozone (1-hour and 8-hour)*

The most severe air quality problem in the Air Basin is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), NOx, and sunlight. ROG and NOx are emitted from various sources throughout Tulare County. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically NOx and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

✓ ***Health Effects***

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children

inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

The CARB found ozone standards in Tulare County nonattainment of Federal and State standards.

2.6.2 *Suspended PM (PM10 and PM2.5)*

Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM10 refers to particles less than or equal to 10 microns in aerodynamic diameter. PM2.5 refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM10. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States, there are sources of PM10 in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of PM10 and PM2.5 can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM10 and PM2.5. In addition to those listed previously, secondary particles can also be formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO2) and NOx in the atmosphere to create sulfates (SO4) and nitrates (NO3). Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

The District's 2008 PM2.5 Plan built upon the aggressive emission reduction strategy adopted in

the 2007 Ozone Plan and strives to bring the valley into attainment status for the 1997 NAAQS for PM2.5. The District's 2012 PM2.5 Plan provides multiple control strategies to reduce emissions of PM2.5 and other pollutants that form PM2.5. The plan's comprehensive control strategy includes regulatory actions, incentive programs, technology advancement, policy and legislative positions, public outreach, participation and communication, and additional strategies.

✓ ***Health Effects***

PM10 and PM2.5 particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings. PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM10 and PM2.5 can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM10. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM10 exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM10 can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

The CARB found PM10 standards in Tulare County in attainment of Federal standards and nonattainment for State standards. The CARB found PM2.5 standards in Tulare County nonattainment of Federal and State standards.

2.6.3 *Carbon Monoxide (CO)*

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, contributes more than two thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall

downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

✓ ***Health Effects***

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

The CARB found CO standards in Tulare County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.4 *Nitrogen Dioxide (NO2)*

Nitrogen oxides (NOx) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NOx is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NOx is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates. EPA regulates only nitrogen dioxide (NO2) as a surrogate for this family of compounds because it is the most prevalent form of NOx in the atmosphere that is generated by anthropogenic (human) activities.[2]

✓ ***Health Effects***

NOx is an ozone precursor that combines with Reactive Organic Gases (ROG) to form ozone.

2 United States Environmental Protection Agency (EPA), Nitrogen Oxides (NOx). Why and How They Are Controlled, 456/F-99-006R, November 2019

See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of NOx can also cause a wide range of health effects. NOx can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NOx are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NOx can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NOx can also impair visibility. NOx is a major component of acid deposition in California. NOx may affect both terrestrial and aquatic ecosystems. NOx in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO2 is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to NOx increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NOx contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

The CARB found NO2 standards in Tulare County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.5 *Sulfur Dioxide (SO2)*

The major source of sulfur dioxide (SO2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. High concentrations of SO2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO2 also is a major precursor to PM2.5, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

The CARB found SO2 standards in the Tulare County as unclassified/attainment for Federal standards and attainment for State standards.

2.6.6 *Lead (Pb)*

Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred the ambient concentrations of lead have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

The CARB found Lead standards in Tulare County as unclassified/attainment of Federal standards and attainment for State standards.

2.6.7 *Toxic Air Contaminants (TAC)*

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are another group of pollutants of concern. TAC are injurious in small quantities and are regulated despite

the absence of criteria documents. The identification, regulation and monitoring of TAC is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TAC are regulated on the basis of risk rather than specification of safe levels of contamination. The ten TAC are acetaldehyde, benzene, 1,3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (diesel PM). Caltrans' guidance for transportation studies references the Federal Highway Administration (FHWA) memorandum titled "Interim Guidance on Air Toxic Analysis in NEPA Documents" which discusses emissions quantification of six "priority" compounds of 21 Mobile Source Air Toxics (MSAT) identified by the United States Environmental Protection Agency (USEPA). The six "priority" compounds are diesel exhaust (particulate matter and organic gases), benzene, 1,3-butadiene, acetaldehyde, formaldehyde, and acrolein.

Some studies indicate that diesel PM poses the greatest health risk among the TAC listed above. A 10-year research program (California Air Resources Board 1998) demonstrated that diesel PM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to diesel PM poses a chronic health risk. In addition to increasing the risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

Diesel PM differs from other TAC in that it is not a single substance but a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TAC, however, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. The CARB has made preliminary concentration estimates based on a diesel PM exposure method. This method uses the CARB emissions inventory's PM10 database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of diesel PM. Table 4 depicts the CARB Handbook's recommended buffer distances associated with various types of common sources.

Existing air quality concerns within Tulare County and the entire SJVAB are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

TABLE 4

Recommendations on Siting New Sensitive Land Uses Such As Residences, Schools, Daycare Centers, Playgrounds, or Medical Facilities*

SOURCE CATEGORY	ADVISORY RECOMMENDATIONS
Freeways and High-Traffic Roads [1]	- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.
Distribution Centers	- Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). - Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.
Rail Yards	- Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. - Within one mile of a rail yard, consider possible siting limitations and mitigation approaches.
Ports	- Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks.
Refineries	- Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation.
Chrome Platers	- Avoid siting new sensitive land uses within 1,000 feet of a chrome plater.
Dry Cleaners Using Perchloroethylene	- Avoid siting new sensitive land uses within 300 feet of any dry cleaning operation. For operations with two or more machines, provide 500 feet. For operations with 3 or more machines, consult with the local air district. - Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations.
Gasoline Dispensing Facilities	- Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50 foot separation is recommended for typical gas dispensing facilities.

1: The recommendation to avoid siting new sensitive land uses within 500 feet of a freeway was identified in CARB's Air Quality and Land Use Handbook published in 2005. CARB recently published a technical advisory to the Air Quality and Land Use Handbook indicating that new research has demonstrated promising strategies to reduce pollution exposure along transportation corridors.

*Notes:
• These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.
• Recommendations are based primarily on data showing that the air pollution exposures addressed here (i.e., localized) can be reduced as much as 80% with the recommended separation.
• The relative risk for these categories varies greatly (see Table 1-2). To determine the actual risk near a particular facility, a site-specific analysis would be required. Risk from diesel PM will decrease over time as cleaner technology phases in.
• These recommendations are designed to fill a gap where information about existing facilities may not be readily available and are not designed to substitute for more specific information if it exists. The recommended distances take into account other factors in addition to available health risk data (see individual category descriptions).
• Site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses.
• This table does not imply that mixed residential and commercial development in general is incompatible. Rather it focuses on known problems like dry cleaners using perchloroethylene that can be addressed with reasonable preventative actions.
• A summary of the basis for the distance recommendations can be found in the ARB Handbook: Air Quality and Land Use Handbook: A Community Health Perspective.

Source: SJVAPCD 1/29/2021

2.6.8 *Odors*

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJVAB. The types of facilities that are known to produce odors are shown in Table 5 along with a reasonable distance from the source within which, the degree of odors could possibly be significant. The Project does not propose any uses that would be potential odor sources; however, the information presented in Table 5 will be used as a screening level analysis to determine if the Project would be impacted by existing odor sources in the study area. Such information is presented for informational purposes, but it is noted that the environment's effect on the Project, including exposure to potential odors, would not be an impact for CEQA purposes.

TABLE 5
Screening Levels for Potential Odor Sources

Type of Facility	Distance
Wastewater Treatment Facilities	2 miles
Sanitary Landfill	1 mile
Transfer Station	1 mile
Compositing Facility	1 mile
Petroleum Refinery	2 miles
Asphalt Batch Plant	1 mile
Chemical Manufacturing	1 mile
Fiberglass Manufacturing	1 mile
Painting/Coating Operations (e.g. auto body shops)	1 mile
Food Processing Facility	1 mile
Feed Lot/Dairy	1 mile
Rendering Plant	1 mile

Source: SJVAPCD 1/29/2021

2.6.9 *Naturally Occurring Asbestos (NOA)*

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Asbestos is commonly found in ultramafic rock and near fault zones. The amount of asbestos that is typically present in these rocks ranges from less than 1% up to approximately 25% and sometimes more. It is released from ultramafic rock when it is broken or crushed. This can happen when cars drive over unpaved roads or driveways, which are surfaced with these rocks, when land is graded for building purposes, or at quarrying operations. Asbestos is also released naturally through weathering and erosion. Once released from the rock, asbestos can become airborne and may stay in the air for long periods of time. Asbestos is hazardous and can cause lung disease and cancer dependent upon the level of exposure. The longer a person is exposed to asbestos and the greater the intensity of the exposure, the greater the chances for a health problem.

The proposed Project's construction phase may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021.

2.6.10 *Greenhouse Gas Emissions*

Gases that trap heat in the atmosphere are often called greenhouse gases. Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the

atmosphere because of human activities are:

- ✓ **Carbon Dioxide (CO2):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement, asphalt paving, truck trips). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- ✓ **Methane (CH4):** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- ✓ **Nitrous Oxide (N2O):** Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- ✓ **Fluorinated Gases:** Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases").

3.0 Air-Quality Impacts

3.1 Methodology

The impact assessment for air quality focuses on potential effects the Project might have on air quality within the Tulare County region. The SJVAPCD has established thresholds of significance for determining environmental significance. These thresholds separate a project's short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project, which are recognized to be short in duration. The long-term emissions are primarily related to the activities that will occur indefinitely as a result of Project operations. Impacts will be evaluated both on the basis of CEQA Appendix G criteria and SJVAPCD significance criteria. The impacts to be evaluated will be those involving construction and operational emissions of criteria pollutants. The SJVAPCD has established thresholds for certain pollutants shown in Table 6.

Table 6
SJVAPCD Air Quality Thresholds of Significance

Project Type	Ozone Precursor Emissions (tons/year)					
	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$
Construction Emissions	100	10	10	27	15	15
Operational Emissions (Permitted Equipment and Activities)	100	10	10	27	15	15
Operational Emissions (Non-Permitted Equipment and Activities)	100	10	10	27	15	15

Source: SJVAPCD 1/29/2021

3.1.1 *CalEEMod*

CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

The model is an accurate and comprehensive tool for quantifying air quality impacts from land use projects throughout California. The model can be used for a variety of situations where an air quality analysis is necessary or desirable such as CEQA and NEPA documents, pre-project planning, compliance with local air quality rules and regulations, etc.

3.2 Short-Term Impacts

Short-term impacts are mainly related to the construction phase of a project and are recognized to be short in duration. Construction air quality impacts are generally attributable to dust and exhaust pollutants generated by equipment and vehicles. Fugitive dust is emitted both during construction activity and as a result of wind erosion over exposed earth surfaces. Clearing and earth moving activities do comprise major sources of construction dust emissions, but traffic and general disturbances of soil surfaces also generate significant dust emissions. Further, dust generation is dependent on soil type and soil moisture. Exhaust pollutants are the non-useable gaseous waste products produced during the combustion process. Engine exhaust contains CO, HC, and NOx pollutants which are harmful to the environment.

Adverse effects of construction activities cause increased dust-fall and locally elevated levels of total suspended particulate. Dust-fall can be a nuisance to neighboring properties or previously completed developments surrounding or within the Project area and may require frequent washing during the construction period.

PM10 emissions can result from construction activities of the Project. The SJVAPCD has determined that compliance with Regulation VIII and other control measures will constitute sufficient mitigation to reduce PM10 impacts to a level considered less-than significant for most development projects. Even with implementation of District Regulation VIII and District Rule 9510, large development projects may not be able to reduce project specific construction impacts below District thresholds of significance.

Ozone precursor emissions are also an impact of construction activities and can be quantified through calculations. Numerous variables factored into estimating total construction emission include: level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and amount of materials to be transported onsite or offsite. Additional exhaust emissions would be associated with the transport of workers and materials. Because the specific mix of construction equipment is not presently known for this Project, construction emissions were estimated using CalEEMod Model defaults for construction equipment.

Table 7 shows the CalEEMod estimated construction emissions that would be generated from construction of the Project. Results of the analysis show that emissions generated from construction of the Project will not exceed the SJVAPCD emission thresholds. It should be noted that the Project will be developed over several years as reflected in Table 7.

Table 7
Project Construction Emissions

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Total Project Construction Emissions (tons)	10.18	11.36	10.62	0.02	2.87	1.44	2037.37
Project Emissions tons per year (Phased over 3.5 years)	**2.91**	**3.25**	**3.03**	**0.005**	**0.82**	**0.41**	**582.11**
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod

3.3 Long-Term Emissions

Long-Term emissions from the Project would be generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment.

3.3.1 *Localized Operational Emissions – Ozone/Particulate Matter*

The Tulare County area is nonattainment for Federal and State air quality standards for ozone, attainment of Federal standards for PM10 and nonattainment for State standards, and nonattainment for Federal and State standards for PM2.5. Nitrogen oxides and reactive organic gases are regulated as ozone precursors. Significance criteria have been established for criteria pollutant emissions as documented in Section 3.1. Operational emissions have been estimated for the Project using the CalEEMod Model and detailed results are included in Appendix A of this report.

Results of the CalEEMod analysis are shown in Table 8. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants considering adherence to all applicable SJVAPCD Rules. Compliance with Rule 9510 will reduce Project Operational NOx Emissions by 33.3% and PM10 emissions by 50% according to the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015.

Table 8
Project Operational Emissions (tons/year)

Summary Report	CO	NO_X	ROG	SO_X	PM_{10}	$PM_{2.5}$	CO2e
Project Opeational Emissions	19.09	8.10	6.41	0.08	2.83	1.63	9842.41
SJVAPCD Level of Significance	100	10	10	27	15	15	None
Does the Project Exceed Standard?	No	No	No	No	No	No	No

Source: CalEEMod

3.3.2 *Localized Operational Emissions*

✓ **Carbon Monoxide**

The SJVAPCD is currently in unclassified/attainment for Federal standards and attainment for State standards for CO. An analysis of localized CO concentrations is typically warranted to ensure that standards are maintained. The traffic analysis prepared for the Project demonstrates that implementation of feasible roadway improvements will alleviate level of service deficiencies considering City of Visalia and Tulare County level of service standards. The overall CO concentrations at roadways and intersections in the study area would be less than significant.

✓ **Toxic Air Contaminants (TAC)**

The SJVAPCD's Guidance Document, Guidance for Assessing and Mitigating Air Quality Impacts – 2015, identifies the need for projects to analyze the potential for adverse air quality impacts to sensitive receptors. Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The SJVAPCD's current thresholds of significance for TAC emissions from the operations of both permitted and non-permitted sources are presented below:

- Carcinogens: Maximally Exposed Individual risk equals or exceeds 10 in one million
- Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
- Acute: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Carcinogenic (cancer) risk is expressed as cancer cases per one million. Noncarcinogenic (acute and chronic) hazard indices (HI) are expressed as a ratio of expected exposure levels to acceptable exposure levels.

These metrics are generally applied to the maximally exposed individual (MEI). There are separate MEIs for residential exposure (i.e., residential areas) and for worker exposure (i.e., off-site workplaces). Residential exposure is for a worst-case exposure duration of 24 hours a day, 350 days a year for 70 years. For off-site workplaces, the exposure is 8 hours a day, 245 days a year for 40 years.

Although the effects of the environment, including existing air quality conditions, on the Project are not impacts for CEQA purposes, the following analysis is presented for informational purposes and to demonstrate compliance with SJCAPCD guidance. The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project

is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided in Table 4. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 4 indicates that new sensitive land uses should not be sited within 500 feet of a freeway/urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. The Project is located more than 14,000 feet from the SR 198 freeway. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors.

✓ **Odors**

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the SJVAPCD. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Because the project is a residential development, it is not expected to generate significant odors.

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- Generators – projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate, and

- Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. None of the facilities shown in Table 5 are located within the vicinity of the Project.

✓ **Naturally Occurring Asbestos (NOA)**

Asbestos is a term used for several types of naturally occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Construction of the Project may cause asbestos to become airborne due to the construction activities that will occur on site. The Project would be required to submit a Dust Control Plan under the SJVAPCD's Rule 8021. Compliance with Rule 8021 would limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities associated with the Project.

✓ **Greenhouse Gas Emissions**

CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the TCAG region, CARB set targets at thirteen (13) percent per capita decrease in 2020 and a sixteen (16) percent per capita decrease in 2035 from a base year of 2005. TCAG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Tulare County region would achieve the prescribed emissions targets.

In 2009, the SJVAPCD adopted the following guidance documents applicable to projects within the San Joaquin Valley:

- ✓ Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009), and
- ✓ District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009).

This guidance and policy are the reference documents referenced in the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD (2015) acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation

program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;

ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and

iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, a neighboring air district's GHG threshold may be used to determine impacts. In December 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. This threshold is often used by agencies, such as the California Public Utilities Commission, to evaluate GHG impacts in areas that do not have specific thresholds (CPUC 2015)[3]. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table 9 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is less than the threshold identified by the SCAQMD.

Table 9
Project Operational Greenhouse Gas Emissions

Summary Report	CO_2e
Project Operational Emissions Per Year	9910 MT/yr

Source: CalEEMod

3.3.3 *Indirect Source Review*

The Project is subject to the SJVAPCD's ISR program, which is also known as Rule 9510. Rule 9510 and the Administrative ISR Fee Rule (Rule 3180) are the result of state requirements outlined in the California Health and Safety Code, Section 40604 and the State Implementation Plan (SIP). The purpose of the SJVAPCD's ISR program is to reduce emissions of NOx and PM10 from new projects. In general, new development contributes to the air-pollution problem in the Valley by increasing the number of vehicles and vehicle miles traveled.

3 California Public Utilities Commission (CPUC). 2015. Section 4.7, "Greenhouse Gases." Final Environmental Impact Report for the Santa Barbara County Reliability Project. May 2015. Accessed January 18, 2018. http://www.cpuc.ca.gov/environment/info/ene/sbcrp/SBCRP_FEIR.html.

Utilizing the ISR Fee Estimator calculator available on the SJVAPCD website, it was determined that the Project's total cost for emission reductions is $594,975.68 without implementation of emission reduction measures. The ISR Fee Estimator worksheets are included in Appendix B. The fee noted above may be reduced dependent upon the formal ISR review process.

4.0 Impact Determinations and Recommended Mitigation

In accordance with CEQA, when a proposed project is consistent with a General Plan for which an EIR has been certified, the effects of that project are evaluated to determine if they will result in project-specific significant adverse impacts on the environment. Accordingly, this analysis identifies any potential environmental effects that are peculiar to the Project or its site that differ from those impacts already analyzed and disclosed in the City's General Plan EIR. The criteria used to determine the significance of an air quality or greenhouse gas impact are based on the following thresholds of significance, which come from Appendix G of the CEQA Guidelines and the General Plan EIR. Accordingly, air quality or greenhouse gas impacts resulting from the Project are considered significant if the Project would:

Air Quality

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?

Greenhouse Gas Emissions

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

4.1 Air Quality

4.1.1 *Conflict with or obstruct implementation of the applicable air quality plan*

The primary way of determining consistency with the air quality plan's (AQP's) assumptions is determining consistency with the applicable General Plan to ensure that the Project's population density and land use are consistent with the growth assumptions used in the AQPs for the air basin.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. TCAG uses the

growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. Existing and future pollutant emissions computed in the AQP are based on land uses from area general plans. AQPs detail the control measures and emission reductions required for reaching attainment of the air standards.

The applicable General Plan for the project is the City of Visalia General Plan, which was adopted in 2014. The Project would be consistent with the General Plan upon preparation and approval of a master plan in accordance with General Plan Policy LU-P-22, which addresses annexation and development of project sites that are located outside of the current Urban Development Boundary. Therefore, the Project would be consistent with the population growth and VMT applied in the plan and the growth assumptions used in the applicable AQPs. As a result, the Project will not conflict with or obstruct implementation of any air quality plans. Therefore, no mitigation is needed.

4.1.2 *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*

The Tulare County area is nonattainment for Federal and State air quality standards for ozone, in attainment of Federal standards and nonattainment for State standards for PM10, and nonattainment for Federal and State standards for PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plans, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone and PM. Inconsistency with any of the plans would be considered a cumulatively adverse air quality impact. As discussed in Section 4.1.1, the Project is consistent with the currently adopted General Plan for the City of Visalia and is therefore consistent with the population growth and VMT applied in the plan. Therefore, the Project is consistent with the growth assumptions used in the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Project specific emissions that exceed the thresholds of significance for criteria pollutants would be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the County is in non-attainment under applicable federal or state ambient air quality standards. It should be noted that a project isn't characterized as cumulatively insignificant when project emissions fall below thresholds of significance. As discussed in Section 3.1, the SJVAPCD has established thresholds of significance for determining environmental significance which are provided in Table 6.

As discussed above in Section 3.2 and 3.3, results of the analysis show that emissions generated from construction and operation of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants. Therefore, no mitigation is needed.

4.1.3 *Expose sensitive receptors to substantial pollutant concentrations*

Sensitive receptors refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses that have the greatest potential to attract these types of sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities. From a health risk perspective, the proposed Project is a Type B project in that it may potentially place sensitive receptors in the vicinity of existing sources.

The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. For Type B projects, one type of screening tool is found in the CARB Handbook: Air Quality and Land Use Handbook: A Community Perspective. This handbook includes a table (depicted in Table 4) with recommended buffer distances associated with various types of common sources. The screening level analysis for the Project shows that TACs are not a concern based upon the recommendations provided in Table 4. An evaluation of nearby land uses considering CARB's Pollution Mapping Tool shows that the Project will not place sensitive receptors in the vicinity of existing toxic sources. Table 4 indicates that new sensitive land uses should not be sited within 500 feet of a freeway/urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. The Project is located more than 14,000 feet from the SR 198 freeway. Therefore, TAC's from sources in the study area will not significantly impact the Project. In addition, the Project will not generate TAC's that would have a significant impact on the environment or adjacent sensitive receptors. Therefore, no mitigation is needed.

Short-Term Impacts

The annual emissions from the construction phase of the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants as shown in Table 7. Therefore, construction emissions associated with the Project are considered less than significant.

Long-Term Impacts

Long-Term emissions from the Project are generated primarily by mobile source (vehicle) emissions from the Project site and area sources such as lawn maintenance equipment. Emissions from long-term operations generally represent a project's most substantial air quality impact. Table 8 summarizes the Project's operational impacts by pollutant. Results indicate that the annual operational emissions from the Project will be less than the SJVAPCD emission thresholds for criteria pollutants. Therefore, operational emissions associated with the Project are considered less than significant.

4.1.4 *Result in other emissions such as those leading to odors adversely affecting a substantial number of people*

The SJVAPCD requires that an analysis of potential odor impacts be conducted for the following two situations:

- ✓ Generators – projects that would potentially generate odorous emissions proposed to be located near existing sensitive receptors or other land uses where people may congregate, and

- ✓ Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

The Project will not generate odorous emissions given the nature or characteristics of residential developments. The intensity of an odor source's operations and its proximity to sensitive receptors influences the potential significance of odor emissions. The SJVAPCD has identified some common types of facilities that have been known to produce odors in the SJV Air Basin. The types of facilities that are known to produce odors are shown in Table 5 above along with a reasonable distance from the source within which, the degree of odors could possibly be significant. None of the facilities shown in Table 5 are located within the vicinity of the Project. Therefore, no mitigation is needed.

4.2 Greenhouse Gas Emissions

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

The SJVAPCD acknowledges the current absence of numerical thresholds and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

i. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;
ii. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement Best Performance Standards (BPS); and
iii. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent compared to Business as Usual (BAU).

The SCAQMD guidance identifies a threshold of 10,000 MTCO2eq./year for GHG for construction emissions amortized over a 30-year project lifetime, plus annual operation emissions. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table 9 shows the yearly GHG emissions

generated by the Project as determined by the CalEEMod model, which is less than the threshold identified by the SCAQMD.

The resulting permanent greenhouse gas increases related to Project operations would be within the greenhouse gas increases analyzed in the General Plan EIR, so there would be no increase in severity to the previously-identified greenhouse gas impacts, and implementation of the Project will not result in Project-specific or site-specific significant adverse impacts from greenhouse gas emissions within the Project study area. Therefore, no mitigation measures are needed.

4.2.2 *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases*

California passed the California Global Warming Solutions Act of 2006. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020. On December 11, 2008, CARB adopted its initial Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan.

SB 375 requires MPOs to adopt a SCS or APS that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, has provided each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the TCAG region, CARB set targets at thirteen (13) percent per capita decrease in 2020 and a sixteen (16) percent per capita decrease in 2035 from a base year of 2005.

Executive Order B-30-15 establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. Executive Order B-30-15 requires MPO's to implement measures that will achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets.

As required by California law, city and county General Plans contain a Land Use Element that details the types and quantities of land uses that the city or county estimates will be needed for future growth, and that designate locations for land uses to regulate growth. TCAG uses the growth projections and land use information in adopted general plans to estimate future average daily trips and then VMT, which are then provided to SJVAPCD to estimate future emissions in the AQPs. The applicable General Plan for the project is the City of Visalia General Plan, which was adopted in 2014.

The Project is consistent with the currently adopted General Plan for the City of Visalia and the adopted 2018 RTP/SCS and is therefore consistent with the population growth and VMT applied

in those plan documents. Therefore, the Project is consistent with the growth assumptions used in the applicable AQP. It should also be noted that yearly GHG emissions generated by the Project (Table 9) are less than the threshold identified by the SCAQMD (see the discussion for Impact 4.2.1 above).

CARB's 2017 Climate Change Scoping Plan builds on the efforts and plans encompassed in the initial Scoping Plan. The current plan has identified new policies and actions to accomplish the State's 2030 GHG limit. Below is a list of applicable strategies in the Scoping Plan and the Project's consistency with those strategies.

- ✓ California Light-Duty Vehicle GHG Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs for long-term climate change goals.

    - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to light-duty vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

- ✓ Energy Efficiency – Pursuit of comparable investment in energy efficiency from all retail providers of electricity in California. Maximize energy efficiency building and appliance standards.

    - The Project is consistent with this reduction measure. Though this measure applies to the State to increase its energy standards, the Project would comply with this measure through existing regulation. The Project would not conflict or obstruct this reduction measure.

- ✓ Low Carbon Fuel – Development and adoption of the low carbon fuel standard.

    - The Project is consistent with this reduction measure. This measure cannot be implemented by a particular project or lead agency since it is a statewide measure. When this measure is implemented, standards would be applicable to the fuel used by vehicles that would access the residential development. The Project would not conflict or obstruct this reduction measure.

Based on the assessment above, the Project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The Project furthers the achievement of the County's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

APPENDIX A

CalEEMod Emissions Worksheets

Visalia Gunning Residential Project

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	555.00	Dwelling Unit	93.00	999,000.00	1587

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	3			**Operational Year**	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage based on project data

Vehicle Trips - ITE Trip Generation Rates 10th Edition

Mobile Land Use Mitigation -

Construction Phase - Adjusted to reflect estimated phasing

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1,550.00	461.00
tblConstructionPhase	PhaseEndDate	2/23/2029	12/23/2024
tblConstructionPhase	PhaseEndDate	4/21/2028	2/19/2024
tblConstructionPhase	PhaseEndDate	9/22/2028	7/22/2024
tblConstructionPhase	PhaseStartDate	9/23/2028	7/23/2024
tblConstructionPhase	PhaseStartDate	4/22/2028	2/20/2024
tblLandUse	LotAcreage	180.19	93.00
tblProjectCharacteristics	OperationalYear	2018	2025
tblVehicleTrips	ST_TR	9.91	9.54
tblVehicleTrips	SU_TR	8.62	8.55
tblVehicleTrips	WD_TR	9.52	9.44
tblWoodstoves	NumberCatalytic	93.00	0.00
tblWoodstoves	NumberNoncatalytic	93.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.4088	4.1842	2.6935	5.0800e-003	1.2292	0.1986	1.4278	0.5807	0.1834	0.7640	0.0000	446.3246	446.3246	0.1335	0.0000	449.6627
2022	0.3974	3.6883	3.2786	7.7500e-003	0.8434	0.1467	0.9900	0.3250	0.1364	0.4614	0.0000	690.0300	690.0300	0.1380	0.0000	693.4808
2023	0.3168	2.5575	2.8490	7.3500e-003	0.2578	0.0929	0.3507	0.0697	0.0874	0.1571	0.0000	658.7486	658.7486	0.0819	0.0000	660.7969
2024	9.4923	0.9325	1.3547	2.6200e-003	0.0598	0.0406	0.1004	0.0161	0.0378	0.0539	0.0000	232.2309	232.2309	0.0481	0.0000	233.4324
Total	**10.6153**	**11.3625**	**10.1757**	**0.0228**	**2.3902**	**0.4787**	**2.8689**	**0.9914**	**0.4450**	**1.4364**	**0.0000**	**2,027.3341**	**2,027.3341**	**0.4015**	**0.0000**	**2,037.3728**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.4088	4.1842	2.6935	5.0800e-003	1.2292	0.1986	1.4278	0.5807	0.1834	0.7640	0.0000	446.3241	446.3241	0.1335	0.0000	449.6622
2022	0.3974	3.6883	3.2786	7.7500e-003	0.8434	0.1467	0.9900	0.3250	0.1364	0.4614	0.0000	690.0294	690.0294	0.1380	0.0000	693.4802
2023	0.3168	2.5575	2.8490	7.3500e-003	0.2578	0.0929	0.3507	0.0697	0.0874	0.1571	0.0000	658.7483	658.7483	0.0819	0.0000	660.7966
2024	9.4923	0.9325	1.3547	2.6200e-003	0.0598	0.0406	0.1004	0.0161	0.0378	0.0539	0.0000	232.2307	232.2307	0.0481	0.0000	233.4322
Total	**10.6153**	**11.3625**	**10.1757**	**0.0228**	**2.3902**	**0.4787**	**2.8689**	**0.9914**	**0.4450**	**1.4364**	**0.0000**	**2,027.3325**	**2,027.3325**	**0.4015**	**0.0000**	**2,037.3712**

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

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	4.9872	0.2550	4.2054	1.5400e-003		0.0396	0.0396		0.0396	0.0396	0.0000	247.1616	247.1616	0.0111	4.4100e-003	248.7515
Energy	0.0961	0.8211	0.3494	5.2400e-003		0.0664	0.0664		0.0664	0.0664	0.0000	2,471.3223	2,471.3223	0.0870	0.0317	2,482.9304
Mobile	1.3226	11.0829	14.5351	0.0722	5.5092	0.0445	5.5537	1.4792	0.0416	1.5208	0.0000	6,687.7481	6,687.7481	0.2398	0.0000	6,693.7427
Waste						0.0000	0.0000		0.0000	0.0000	115.9728	0.0000	115.9728	6.8538	0.0000	287.3177
Water						0.0000	0.0000		0.0000	0.0000	11.4721	80.1325	91.6046	1.1819	0.0286	129.6668
Total	**6.4058**	**12.1589**	**19.0898**	**0.0790**	**5.5092**	**0.1505**	**5.6597**	**1.4792**	**0.1476**	**1.6268**	**127.4449**	**9,486.3644**	**9,613.8093**	**8.3735**	**0.0646**	**9,842.4090**

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	4.9872	0.2550	4.2054	1.5400e-003		0.0396	0.0396		0.0396	0.0396	0.0000	247.1616	247.1616	0.0111	4.4100e-003	248.7515
Energy	0.0961	0.8211	0.3494	5.2400e-003		0.0664	0.0664		0.0664	0.0664	0.0000	2,471.3223	2,471.3223	0.0870	0.0317	2,482.9304
Mobile	1.3226	11.0829	14.5351	0.0722	5.5092	0.0445	5.5537	1.4792	0.0416	1.5208	0.0000	6,687.7481	6,687.7481	0.2398	0.0000	6,693.7427
Waste						0.0000	0.0000		0.0000	0.0000	115.9728	0.0000	115.9728	6.8538	0.0000	287.3177
Water						0.0000	0.0000		0.0000	0.0000	11.4721	80.1325	91.6046	1.1819	0.0286	129.6668
Total	**6.4058**	**12.1589**	**19.0898**	**0.0790**	**5.5092**	**0.1505**	**5.6597**	**1.4792**	**0.1476**	**1.6268**	**127.4449**	**9,486.3644**	**9,613.8093**	**8.3735**	**0.0646**	**9,842.4090**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2021	7/16/2021	5	100	
2	Site Preparation	Site Preparation	7/17/2021	10/8/2021	5	60	
3	Grading	Grading	10/9/2021	5/13/2022	5	155	
4	Building Construction	Building Construction	5/14/2022	2/19/2024	5	461	
5	Paving	Paving	2/20/2024	7/22/2024	5	110	
6	Architectural Coating	Architectural Coating	7/23/2024	12/23/2024	5	110	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 387.5

Acres of Paving: 0

Residential Indoor: 2,022,975; Residential Outdoor: 674,325; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

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
Architectural Coating	1	40.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	200.00	59.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 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	0.1583	1.5720	1.0783	1.9400e-003		0.0776	0.0776		0.0721	0.0721	0.0000	170.0039	170.0039	0.0479	0.0000	171.2002
Total	**0.1583**	**1.5720**	**1.0783**	**1.9400e-003**		**0.0776**	**0.0776**		**0.0721**	**0.0721**	**0.0000**	**170.0039**	**170.0039**	**0.0479**	**0.0000**	**171.2002**

3.2 Demolition - 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	3.2500e-003	2.0900e-003	0.0215	6.0000e-005	5.9700e-003	4.0000e-005	6.0100e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	4.9717	4.9717	1.4000e-004	0.0000	4.9752
Total	**3.2500e-003**	**2.0900e-003**	**0.0215**	**6.0000e-005**	**5.9700e-003**	**4.0000e-005**	**6.0100e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**4.9717**	**4.9717**	**1.4000e-004**	**0.0000**	**4.9752**

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	0.1583	1.5720	1.0783	1.9400e-003		0.0776	0.0776		0.0721	0.0721	0.0000	170.0037	170.0037	0.0479	0.0000	171.2000
Total	**0.1583**	**1.5720**	**1.0783**	**1.9400e-003**		**0.0776**	**0.0776**		**0.0721**	**0.0721**	**0.0000**	**170.0037**	**170.0037**	**0.0479**	**0.0000**	**171.2000**

3.2 Demolition - 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	3.2500e-003	2.0900e-003	0.0215	6.0000e-005	5.9700e-003	4.0000e-005	6.0100e-003	1.5900e-003	4.0000e-005	1.6300e-003	0.0000	4.9717	4.9717	1.4000e-004	0.0000	4.9752
Total	**3.2500e-003**	**2.0900e-003**	**0.0215**	**6.0000e-005**	**5.9700e-003**	**4.0000e-005**	**6.0100e-003**	**1.5900e-003**	**4.0000e-005**	**1.6300e-003**	**0.0000**	**4.9717**	**4.9717**	**1.4000e-004**	**0.0000**	**4.9752**

3.3 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					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1167	1.2149	0.6346	1.1400e-003		0.0613	0.0613		0.0564	0.0564	0.0000	100.3072	100.3072	0.0324	0.0000	101.1182
Total	**0.1167**	**1.2149**	**0.6346**	**1.1400e-003**	**0.5420**	**0.0613**	**0.6033**	**0.2979**	**0.0564**	**0.3544**	**0.0000**	**100.3072**	**100.3072**	**0.0324**	**0.0000**	**101.1182**

3.3 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	2.3400e-003	1.5100e-003	0.0155	4.0000e-005	4.3000e-003	3.0000e-005	4.3300e-003	1.1400e-003	3.0000e-005	1.1700e-003	0.0000	3.5796	3.5796	1.0000e-004	0.0000	3.5822
Total	**2.3400e-003**	**1.5100e-003**	**0.0155**	**4.0000e-005**	**4.3000e-003**	**3.0000e-005**	**4.3300e-003**	**1.1400e-003**	**3.0000e-005**	**1.1700e-003**	**0.0000**	**3.5796**	**3.5796**	**1.0000e-004**	**0.0000**	**3.5822**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5420	0.0000	0.5420	0.2979	0.0000	0.2979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1167	1.2149	0.6346	1.1400e-003		0.0613	0.0613		0.0564	0.0564	0.0000	100.3070	100.3070	0.0324	0.0000	101.1181
Total	**0.1167**	**1.2149**	**0.6346**	**1.1400e-003**	**0.5420**	**0.0613**	**0.6033**	**0.2979**	**0.0564**	**0.3544**	**0.0000**	**100.3070**	**100.3070**	**0.0324**	**0.0000**	**101.1181**

3.3 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	2.3400e-003	1.5100e-003	0.0155	4.0000e-005	4.3000e-003	3.0000e-005	4.3300e-003	1.1400e-003	3.0000e-005	1.1700e-003	0.0000	3.5796	3.5796	1.0000e-004	0.0000	3.5822
Total	**2.3400e-003**	**1.5100e-003**	**0.0155**	**4.0000e-005**	**4.3000e-003**	**3.0000e-005**	**4.3300e-003**	**1.1400e-003**	**3.0000e-005**	**1.1700e-003**	**0.0000**	**3.5796**	**3.5796**	**1.0000e-004**	**0.0000**	**3.5822**

3.4 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					0.6722	0.0000	0.6722	0.2787	0.0000	0.2787	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1257	1.3920	0.9264	1.8600e-003		0.0596	0.0596		0.0548	0.0548	0.0000	163.4849	163.4849	0.0529	0.0000	164.8068
Total	**0.1257**	**1.3920**	**0.9264**	**1.8600e-003**	**0.6722**	**0.0596**	**0.7317**	**0.2787**	**0.0548**	**0.3335**	**0.0000**	**163.4849**	**163.4849**	**0.0529**	**0.0000**	**164.8068**

3.4 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	2.6000e-003	1.6700e-003	0.0172	4.0000e-005	4.7800e-003	3.0000e-005	4.8100e-003	1.2700e-003	3.0000e-005	1.3000e-003	0.0000	3.9773	3.9773	1.1000e-004	0.0000	3.9802
Total	**2.6000e-003**	**1.6700e-003**	**0.0172**	**4.0000e-005**	**4.7800e-003**	**3.0000e-005**	**4.8100e-003**	**1.2700e-003**	**3.0000e-005**	**1.3000e-003**	**0.0000**	**3.9773**	**3.9773**	**1.1000e-004**	**0.0000**	**3.9802**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6722	0.0000	0.6722	0.2787	0.0000	0.2787	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1257	1.3920	0.9264	1.8600e-003		0.0596	0.0596		0.0548	0.0548	0.0000	163.4848	163.4848	0.0529	0.0000	164.8066
Total	**0.1257**	**1.3920**	**0.9264**	**1.8600e-003**	**0.6722**	**0.0596**	**0.7317**	**0.2787**	**0.0548**	**0.3335**	**0.0000**	**163.4848**	**163.4848**	**0.0529**	**0.0000**	**164.8066**

3.4 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	2.6000e-003	1.6700e-003	0.0172	4.0000e-005	4.7800e-003	3.0000e-005	4.8100e-003	1.2700e-003	3.0000e-005	1.3000e-003	0.0000	3.9773	3.9773	1.1000e-004	0.0000	3.9802
Total	**2.6000e-003**	**1.6700e-003**	**0.0172**	**4.0000e-005**	**4.7800e-003**	**3.0000e-005**	**4.8100e-003**	**1.2700e-003**	**3.0000e-005**	**1.3000e-003**	**0.0000**	**3.9773**	**3.9773**	**1.1000e-004**	**0.0000**	**3.9802**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6722	0.0000	0.6722	0.2787	0.0000	0.2787	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1722	1.8451	1.3795	2.9500e-003		0.0777	0.0777		0.0714	0.0714	0.0000	259.0394	259.0394	0.0838	0.0000	261.1338
Total	**0.1722**	**1.8451**	**1.3795**	**2.9500e-003**	**0.6722**	**0.0777**	**0.7498**	**0.2787**	**0.0714**	**0.3502**	**0.0000**	**259.0394**	**259.0394**	**0.0838**	**0.0000**	**261.1338**

3.4 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8100e-003	2.3600e-003	0.0247	7.0000e-005	7.5700e-003	5.0000e-005	7.6200e-003	2.0100e-003	5.0000e-005	2.0600e-003	0.0000	6.0742	6.0742	1.6000e-004	0.0000	6.0782
Total	**3.8100e-003**	**2.3600e-003**	**0.0247**	**7.0000e-005**	**7.5700e-003**	**5.0000e-005**	**7.6200e-003**	**2.0100e-003**	**5.0000e-005**	**2.0600e-003**	**0.0000**	**6.0742**	**6.0742**	**1.6000e-004**	**0.0000**	**6.0782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6722	0.0000	0.6722	0.2787	0.0000	0.2787	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1722	1.8451	1.3795	2.9500e-003		0.0777	0.0777		0.0714	0.0714	0.0000	259.0390	259.0390	0.0838	0.0000	261.1335
Total	**0.1722**	**1.8451**	**1.3795**	**2.9500e-003**	**0.6722**	**0.0777**	**0.7498**	**0.2787**	**0.0714**	**0.3502**	**0.0000**	**259.0390**	**259.0390**	**0.0838**	**0.0000**	**261.1335**

3.4 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8100e-003	2.3600e-003	0.0247	7.0000e-005	7.5700e-003	5.0000e-005	7.6200e-003	2.0100e-003	5.0000e-005	2.0600e-003	0.0000	6.0742	6.0742	1.6000e-004	0.0000	6.0782
Total	**3.8100e-003**	**2.3600e-003**	**0.0247**	**7.0000e-005**	**7.5700e-003**	**5.0000e-005**	**7.6200e-003**	**2.0100e-003**	**5.0000e-005**	**2.0600e-003**	**0.0000**	**6.0742**	**6.0742**	**1.6000e-004**	**0.0000**	**6.0782**

3.5 Building Construction - 2022

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	0.1408	1.2883	1.3500	2.2200e-003		0.0667	0.0667		0.0628	0.0628	0.0000	191.1733	191.1733	0.0458	0.0000	192.3183
Total	**0.1408**	**1.2883**	**1.3500**	**2.2200e-003**		**0.0667**	**0.0667**		**0.0628**	**0.0628**	**0.0000**	**191.1733**	**191.1733**	**0.0458**	**0.0000**	**192.3183**

3.5 Building Construction - 2022

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	0.0145	0.5116	0.0948	1.3500e-003	0.0322	1.3700e-003	0.0335	9.3000e-003	1.3100e-003	0.0106	0.0000	128.2444	128.2444	5.5100e-003	0.0000	128.3822
Worker	0.0661	0.0410	0.4296	1.1700e-003	0.1314	8.5000e-004	0.1323	0.0349	7.9000e-004	0.0357	0.0000	105.4987	105.4987	2.7800e-003	0.0000	105.5683
Total	**0.0806**	**0.5526**	**0.5244**	**2.5200e-003**	**0.1636**	**2.2200e-003**	**0.1658**	**0.0442**	**2.1000e-003**	**0.0463**	**0.0000**	**233.7431**	**233.7431**	**8.2900e-003**	**0.0000**	**233.9505**

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	0.1408	1.2883	1.3500	2.2200e-003		0.0667	0.0667		0.0628	0.0628	0.0000	191.1731	191.1731	0.0458	0.0000	192.3181
Total	**0.1408**	**1.2883**	**1.3500**	**2.2200e-003**		**0.0667**	**0.0667**		**0.0628**	**0.0628**	**0.0000**	**191.1731**	**191.1731**	**0.0458**	**0.0000**	**192.3181**

3.5 Building Construction - 2022

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	0.0145	0.5116	0.0948	1.3500e-003	0.0322	1.3700e-003	0.0335	9.3000e-003	1.3100e-003	0.0106	0.0000	128.2444	128.2444	5.5100e-003	0.0000	128.3822
Worker	0.0661	0.0410	0.4296	1.1700e-003	0.1314	8.5000e-004	0.1323	0.0349	7.9000e-004	0.0357	0.0000	105.4987	105.4987	2.7800e-003	0.0000	105.5683
Total	**0.0806**	**0.5526**	**0.5244**	**2.5200e-003**	**0.1636**	**2.2200e-003**	**0.1658**	**0.0442**	**2.1000e-003**	**0.0463**	**0.0000**	**233.7431**	**233.7431**	**8.2900e-003**	**0.0000**	**233.9505**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3462	301.3462	0.0717	0.0000	303.1383
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3462**	**301.3462**	**0.0717**	**0.0000**	**303.1383**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0159	0.6300	0.1249	2.0800e-003	0.0507	6.5000e-004	0.0514	0.0147	6.2000e-004	0.0153	0.0000	197.3215	197.3215	6.3600e-003	0.0000	197.4806
Worker	0.0964	0.0575	0.6123	1.7700e-003	0.2071	1.3000e-003	0.2084	0.0551	1.1900e-003	0.0563	0.0000	160.0809	160.0809	3.8800e-003	0.0000	160.1780
Total	**0.1123**	**0.6875**	**0.7373**	**3.8500e-003**	**0.2578**	**1.9500e-003**	**0.2598**	**0.0697**	**1.8100e-003**	**0.0715**	**0.0000**	**357.4025**	**357.4025**	**0.0102**	**0.0000**	**357.6586**

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	0.2045	1.8700	2.1117	3.5000e-003		0.0910	0.0910		0.0856	0.0856	0.0000	301.3458	301.3458	0.0717	0.0000	303.1380
Total	**0.2045**	**1.8700**	**2.1117**	**3.5000e-003**		**0.0910**	**0.0910**		**0.0856**	**0.0856**	**0.0000**	**301.3458**	**301.3458**	**0.0717**	**0.0000**	**303.1380**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0159	0.6300	0.1249	2.0800e-003	0.0507	6.5000e-004	0.0514	0.0147	6.2000e-004	0.0153	0.0000	197.3215	197.3215	6.3600e-003	0.0000	197.4806
Worker	0.0964	0.0575	0.6123	1.7700e-003	0.2071	1.3000e-003	0.2084	0.0551	1.1900e-003	0.0563	0.0000	160.0809	160.0809	3.8800e-003	0.0000	160.1780
Total	**0.1123**	**0.6875**	**0.7373**	**3.8500e-003**	**0.2578**	**1.9500e-003**	**0.2598**	**0.0697**	**1.8100e-003**	**0.0715**	**0.0000**	**357.4025**	**357.4025**	**0.0102**	**0.0000**	**357.6586**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0265	0.2420	0.2910	4.9000e-004		0.0110	0.0110		0.0104	0.0104	0.0000	41.7328	41.7328	9.8700e-003	0.0000	41.9796
Total	**0.0265**	**0.2420**	**0.2910**	**4.9000e-004**		**0.0110**	**0.0110**		**0.0104**	**0.0104**	**0.0000**	**41.7328**	**41.7328**	**9.8700e-003**	**0.0000**	**41.9796**

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1300e-003	0.0865	0.0163	2.9000e-004	7.0200e-003	9.0000e-005	7.1100e-003	2.0300e-003	8.0000e-005	2.1100e-003	0.0000	27.1342	27.1342	8.9000e-004	0.0000	27.1566
Worker	0.0124	7.1300e-003	0.0779	2.4000e-004	0.0287	1.7000e-004	0.0289	7.6200e-003	1.6000e-004	7.7800e-003	0.0000	21.2876	21.2876	4.8000e-004	0.0000	21.2996
Total	**0.0146**	**0.0936**	**0.0942**	**5.3000e-004**	**0.0357**	**2.6000e-004**	**0.0360**	**9.6500e-003**	**2.4000e-004**	**9.8900e-003**	**0.0000**	**48.4217**	**48.4217**	**1.3700e-003**	**0.0000**	**48.4561**

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	0.0265	0.2420	0.2910	4.9000e-004		0.0110	0.0110		0.0104	0.0104	0.0000	41.7328	41.7328	9.8700e-003	0.0000	41.9795
Total	**0.0265**	**0.2420**	**0.2910**	**4.9000e-004**		**0.0110**	**0.0110**		**0.0104**	**0.0104**	**0.0000**	**41.7328**	**41.7328**	**9.8700e-003**	**0.0000**	**41.9795**

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1300e-003	0.0865	0.0163	2.9000e-004	7.0200e-003	9.0000e-005	7.1100e-003	2.0300e-003	8.0000e-005	2.1100e-003	0.0000	27.1342	27.1342	8.9000e-004	0.0000	27.1566
Worker	0.0124	7.1300e-003	0.0779	2.4000e-004	0.0287	1.7000e-004	0.0289	7.6200e-003	1.6000e-004	7.7800e-003	0.0000	21.2876	21.2876	4.8000e-004	0.0000	21.2996
Total	**0.0146**	**0.0936**	**0.0942**	**5.3000e-004**	**0.0357**	**2.6000e-004**	**0.0360**	**9.6500e-003**	**2.4000e-004**	**9.8900e-003**	**0.0000**	**48.4217**	**48.4217**	**1.3700e-003**	**0.0000**	**48.4561**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0544	0.5239	0.8044	1.2500e-003		0.0258	0.0258		0.0237	0.0237	0.0000	110.1459	110.1459	0.0356	0.0000	111.0365
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0544**	**0.5239**	**0.8044**	**1.2500e-003**		**0.0258**	**0.0258**		**0.0237**	**0.0237**	**0.0000**	**110.1459**	**110.1459**	**0.0356**	**0.0000**	**111.0365**

3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	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	2.8500e-003	1.6300e-003	0.0179	5.0000e-005	6.5700e-003	4.0000e-005	6.6100e-003	1.7500e-003	4.0000e-005	1.7800e-003	0.0000	4.8784	4.8784	1.1000e-004	0.0000	4.8812
Total	**2.8500e-003**	**1.6300e-003**	**0.0179**	**5.0000e-005**	**6.5700e-003**	**4.0000e-005**	**6.6100e-003**	**1.7500e-003**	**4.0000e-005**	**1.7800e-003**	**0.0000**	**4.8784**	**4.8784**	**1.1000e-004**	**0.0000**	**4.8812**

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	0.0544	0.5239	0.8044	1.2500e-003		0.0258	0.0258		0.0237	0.0237	0.0000	110.1458	110.1458	0.0356	0.0000	111.0364
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0544**	**0.5239**	**0.8044**	**1.2500e-003**		**0.0258**	**0.0258**		**0.0237**	**0.0237**	**0.0000**	**110.1458**	**110.1458**	**0.0356**	**0.0000**	**111.0364**

3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	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	2.8500e-003	1.6300e-003	0.0179	5.0000e-005	6.5700e-003	4.0000e-005	6.6100e-003	1.7500e-003	4.0000e-005	1.7800e-003	0.0000	4.8784	4.8784	1.1000e-004	0.0000	4.8812
Total	**2.8500e-003**	**1.6300e-003**	**0.0179**	**5.0000e-005**	**6.5700e-003**	**4.0000e-005**	**6.6100e-003**	**1.7500e-003**	**4.0000e-005**	**1.7800e-003**	**0.0000**	**4.8784**	**4.8784**	**1.1000e-004**	**0.0000**	**4.8812**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	9.3765					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9400e-003	0.0670	0.0996	1.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	14.0429	14.0429	7.9000e-004	0.0000	14.0627
Total	**9.3864**	**0.0670**	**0.0996**	**1.6000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**14.0429**	**14.0429**	**7.9000e-004**	**0.0000**	**14.0627**

3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	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	7.6000e-003	4.3600e-003	0.0476	1.4000e-004	0.0175	1.1000e-004	0.0176	4.6600e-003	1.0000e-004	4.7600e-003	0.0000	13.0091	13.0091	2.9000e-004	0.0000	13.0164
Total	**7.6000e-003**	**4.3600e-003**	**0.0476**	**1.4000e-004**	**0.0175**	**1.1000e-004**	**0.0176**	**4.6600e-003**	**1.0000e-004**	**4.7600e-003**	**0.0000**	**13.0091**	**13.0091**	**2.9000e-004**	**0.0000**	**13.0164**

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	9.3765					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9400e-003	0.0670	0.0996	1.6000e-004		3.3500e-003	3.3500e-003		3.3500e-003	3.3500e-003	0.0000	14.0429	14.0429	7.9000e-004	0.0000	14.0627
Total	**9.3864**	**0.0670**	**0.0996**	**1.6000e-004**		**3.3500e-003**	**3.3500e-003**		**3.3500e-003**	**3.3500e-003**	**0.0000**	**14.0429**	**14.0429**	**7.9000e-004**	**0.0000**	**14.0627**

3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	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	7.6000e-003	4.3600e-003	0.0476	1.4000e-004	0.0175	1.1000e-004	0.0176	4.6600e-003	1.0000e-004	4.7600e-003	0.0000	13.0091	13.0091	2.9000e-004	0.0000	13.0164
Total	**7.6000e-003**	**4.3600e-003**	**0.0476**	**1.4000e-004**	**0.0175**	**1.1000e-004**	**0.0176**	**4.6600e-003**	**1.0000e-004**	**4.7600e-003**	**0.0000**	**13.0091**	**13.0091**	**2.9000e-004**	**0.0000**	**13.0164**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	1.3226	11.0829	14.5351	0.0722	5.5092	0.0445	5.5537	1.4792	0.0416	1.5208	0.0000	6,687.7481	6,687.7481	0.2398	0.0000	6,693.7427
Unmitigated	1.3226	11.0829	14.5351	0.0722	5.5092	0.0445	5.5537	1.4792	0.0416	1.5208	0.0000	6,687.7481	6,687.7481	0.2398	0.0000	6,693.7427

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	5,239.20	5,294.70	4745.25	14,591,358	14,591,358
Total	5,239.20	5,294.70	4,745.25	14,591,358	14,591,358

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
Single Family Housing	10.80	7.30	7.50	38.40	22.60	39.00	86	11	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.547974	0.030892	0.177362	0.116043	0.015836	0.004304	0.020124	0.078823	0.001802	0.001136	0.004060	0.001058	0.000587

4.4 Fleet Mix

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	1,520.4541	1,520.4541	0.0688	0.0142	1,526.4117
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,520.4541	1,520.4541	0.0688	0.0142	1,526.4117
NaturalGas Mitigated	0.0961	0.8211	0.3494	5.2400e-003		0.0664	0.0664		0.0664	0.0664	0.0000	950.8682	950.8682	0.0182	0.0174	956.5187
NaturalGas Unmitigated	0.0961	0.8211	0.3494	5.2400e-003		0.0664	0.0664		0.0664	0.0664	0.0000	950.8682	950.8682	0.0182	0.0174	956.5187

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					
Single Family Housing	1.78186e+007	0.0961	0.8211	0.3494	5.2400e-003		0.0664	0.0664		0.0664	0.0664	0.0000	950.8682	950.8682	0.0182	0.0174	956.5187
Total		**0.0961**	**0.8211**	**0.3494**	**5.2400e-003**		**0.0664**	**0.0664**		**0.0664**	**0.0664**	**0.0000**	**950.8682**	**950.8682**	**0.0182**	**0.0174**	**956.5187**

5.2 Energy by Land Use - NaturalGas

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					
Single Family Housing	1.78186e+007	0.0961	0.8211	0.3494	5.2400e-003		0.0664	0.0664		0.0664	0.0664	0.0000	950.8682	950.8682	0.0182	0.0174	956.5187
Total		**0.0961**	**0.8211**	**0.3494**	**5.2400e-003**		**0.0664**	**0.0664**		**0.0664**	**0.0664**	**0.0000**	**950.8682**	**950.8682**	**0.0182**	**0.0174**	**956.5187**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	5.22652e+006	1,520.4541	0.0688	0.0142	1,526.4117
Total		**1,520.4541**	**0.0688**	**0.0142**	**1,526.4117**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	5.22652e+006	1,520.4541	0.0688	0.0142	1,526.4117
Total		**1,520.4541**	**0.0688**	**0.0142**	**1,526.4117**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4.9872	0.2550	4.2054	1.5400e-003		0.0396	0.0396		0.0396	0.0396	0.0000	247.1616	247.1616	0.0111	4.4100e-003	248.7515
Unmitigated	4.9872	0.2550	4.2054	1.5400e-003		0.0396	0.0396		0.0396	0.0396	0.0000	247.1616	247.1616	0.0111	4.4100e-003	248.7515

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9377					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9016					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0243	0.2076	0.0883	1.3300e-003		0.0168	0.0168		0.0168	0.0168	0.0000	240.4301	240.4301	4.6100e-003	4.4100e-003	241.8589
Landscaping	0.1236	0.0474	4.1170	2.2000e-004		0.0228	0.0228		0.0228	0.0228	0.0000	6.7315	6.7315	6.4500e-003	0.0000	6.8926
Total	**4.9871**	**0.2550**	**4.2054**	**1.5500e-003**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**0.0000**	**247.1616**	**247.1616**	**0.0111**	**4.4100e-003**	**248.7515**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.9377					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9016					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0243	0.2076	0.0883	1.3300e-003		0.0168	0.0168		0.0168	0.0168	0.0000	240.4301	240.4301	4.6100e-003	4.4100e-003	241.8589
Landscaping	0.1236	0.0474	4.1170	2.2000e-004		0.0228	0.0228		0.0228	0.0228	0.0000	6.7315	6.7315	6.4500e-003	0.0000	6.8926
Total	**4.9871**	**0.2550**	**4.2054**	**1.5500e-003**		**0.0396**	**0.0396**		**0.0396**	**0.0396**	**0.0000**	**247.1616**	**247.1616**	**0.0111**	**4.4100e-003**	**248.7515**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	91.6046	1.1819	0.0286	129.6668
Unmitigated	91.6046	1.1819	0.0286	129.6668

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	36.1605 / 22.7968	91.6046	1.1819	0.0286	129.6668
Total		**91.6046**	**1.1819**	**0.0286**	**129.6668**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	36.1605 / 22.7968	91.6046	1.1819	0.0286	129.6668
Total		**91.6046**	**1.1819**	**0.0286**	**129.6668**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	115.9728	6.8538	0.0000	287.3177
Unmitigated	115.9728	6.8538	0.0000	287.3177

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	571.32	115.9728	6.8538	0.0000	287.3177
Total		**115.9728**	**6.8538**	**0.0000**	**287.3177**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	571.32	115.9728	6.8538	0.0000	287.3177
Total		**115.9728**	**6.8538**	**0.0000**	**287.3177**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

APPENDIX B

ISR Fee Worksheets

Emissions Estimator Worksheet

2/2/2021

Applicant/Business Name:	**Gunning Development**
Project Name:	**Gunning Develoment**
Project Location:	**City of Visalia**
District Project ID No.:	

Project Construction Emissions

If applicant selected Construction Clean Fleet Mitigation Measure - Please select "Yes" from dropdown menu — **No** ▼

			NOx					PM10					
Project Phase Name	ISR Phase	Construction Start Date	Unmitigated Baseline[1] (TPY)	Mitigated Baseline[2] (TPY)	Achieved On-site Reductions[3] (tons)	Required Off-site Reductions[4] (tons)	Emission Reductions Required by Rule[5]	Unmitigated Baseline[1] (TPY)	Mitigated Baseline[2] (TPY)	Achieved On-site Reductions[3] (tons)	Required Off-site Reductions[4] (tons)	Emission Reductions Required by Rule[5]
	1	3/1/2021	11.3625	11.3625	0.0000	2.2725	2.2725	2.8689	2.8689	0.0000	1.2910	1.2910
	2				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	3				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	4				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	5				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	6				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	7				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	8				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	9				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
	10				0.0000	0.0000	0.0000			0.0000	0.0000	0.0000
		Total	**11.3625**	**11.3625**	**0.0000**	**2.2725**	2.2725	**2.8689**	**2.8689**	**0.0000**	**1.2910**	1.2910

Total Achieved On-Site Reductions (tons)

ISR Phase	NOx	PM10
1	0.0000	0.0000
2	0.0000	0.0000
3	0.0000	0.0000
4	0.0000	0.0000
5	0.0000	0.0000
6	0.0000	0.0000
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000
10	0.0000	0.0000
Total	**0.0000**	**0.0000**

Project Operations Emissions (Area + Mobile)

			NOx						PM10					
Project Phase Name	ISR Phase	Operation Start Date	Unmitigated Baseline[1] (TPY)	Mitigated Baseline[2] (TPY)	Achieved On-site Reductions[3] (tons)	Required Off-site Reductions[4] (tons)	Total Emission Reductions Required by Rule[6]	Average Annual Emission Reductions Required by Rule[7]	Unmitigated Baseline[1] (TPY)	Mitigated Baseline[2] (TPY)	Achieved On-site Reductions[3] (tons)	Required Off-site Reductions[4] (tons)	Total Emission Reductions Required by Rule[6]	Average Annual Emission Reductions Required by Rule[7]
	1	1/1/2025	12.1589	12.1589	0.0000	30.3973	30.3973	3.0397	5.6597	5.6597	0.0000	28.2985	28.2985	2.8299
	2				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	3				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	4				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	5				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	6				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	7				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	8				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	9				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
	10				0.0000	0.0000	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
		Total	**12.1589**	**12.1589**	**0.0000**	**30.3973**	**30.3973**	**3.0397**	**5.6597**	**5.6597**	**0.0000**	**28.2985**	**28.2985**	**2.8299**

Total Required Off-Site Reductions (tons)

ISR Phase	NOx	PM10
1	32.6698	29.5895
2	0.0000	0.0000
3	0.0000	0.0000
4	0.0000	0.0000
5	0.0000	0.0000
6	0.0000	0.0000
7	0.0000	0.0000
8	0.0000	0.0000
9	0.0000	0.0000
10	0.0000	0.0000
Total	**32.6698**	**29.5895**

Notes:

TPY: Tons Per Year

[1] **Unmitigated Baseline:** The project's baseline emissions generated with no on-site emission reduction measures.

[2] **Mitigated Baseline:** The project's baseline emissions generated after on-site emisison reduction measures have been applied.

[3] **Achieved On-site Reductions:** The project's emission reductions achieved after on-site emission reduction measures have been applied.

[4] **Required Off-site Reductions:** The project's remaining emission reductions required by Rule 9510 if on-site emission reduction measures did not achieive the required rule reductions.

[5] **Emission Reductions Required by Rule:** The project's emission reductions required (20% NOx and 45% PM10) for construction from the unmitigated baseline.

[6] **Total Emission Reductions Required by Rule:** The project's emission reductions required (33.3% NOx and 50% PM10) for operations from the unmitigated baseline over a 10-year period.

[7] **Average Annual Emission Reductions Required by Rule:** The project's total emission reduction for operations required by Rule 9510 divided by 10 years.

Fee Estimator Worksheet

2/2/2021

Applicant/Business Name:	**Gunning Development**
Project Name:	**Gunning Develoment**
Project Location:	**City of Visalia**
District Project ID No.:	

NOTES:

(1) The start date for each ISR phase is shown in TABLE 1.
(2) If you have chosen a **ONE-TIME** payment for the project, then the total amount due for ALL PHASES is shown under TABLE 2.
(3) If you have chosen a **DEFERRED** payment schedule or would like to propose a **DEFERRED** payment schedule for the project, the total amount due for a specific year is shown in TABLE 3 according to the schedule in TABLE 1.
* If you have not provided a proposed payment date, the District sets a default invoice date of 60 days prior to start of the ISR phase.

If applicant selected Fee Deferral Schedule - Please select "Yes" from dropdown menu	Yes

TABLE 1 - PROJECT INFORMATION

Project Phase Name	ISR Phase	Start Date per Phase	Scheduled Payment Date*
	1	3/1/21	1/1/2021
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		
TOTAL (tons)			

TABLE 2 - No Fee Deferral Schedule (FDS)

Pollutant	Required Offsite Reductions (tons)
NOx	32.6698
PM10	29.5895
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	0.0000
PM10	0.0000
NOx	32.6698
PM10	29.5895

Offsite Fee by Pollutant ($)		
	NOx	$305,462
	PM10	$266,630
Administrative Fee ($)		$22,883.68
Offsite Fee ($)		$572,092.00
Total Project Offsite Fee ($)		$594,975.68

TABLE 2 - NO FDS

2017
32.6698
29.5895
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
0.0000
0.0000
0.0000
0.0000
0.0000
32.6698
29.5895

TABLE 3 - APPROVED FEE DEFERRAL SCHEDULE (FDS) BY PAYMENT YEAR

2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
					32.6698					
					29.5895					
0.0000	0.0000	0.0000	0.0000	0.0000	32.6698	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	29.5895	0.0000	0.0000	0.0000	0.0000	0.0000
$0	$0	$0	$0	$0	$305,462	$0	$0	$0	$0	$0
$0	$0	$0	$0	$0	$266,630	$0	$0	$0	$0	$0
$0.00	$0.00	$0.00	$0.00	$0.00	$22,883.68	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$594,975.68	$0.00	$0.00	$0.00	$0.00	$0.00
					$594,975.68					

Rule 9510 Fee Schedule ($/ton)

Year	Nox	PM10
2019 and Beyond	$9,350	$9,011

BIOLOGICAL ANALYSIS REPORT

D.R. HORTON, AMERICA'S BUILDER

PRATT FAMILY RANCH PROJECT

JUNE 2020

BIOLOGIAL ANALYSIS REPORT

PRATT FAMILY RANCH PROJECT

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July 2020

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Project #200180

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Acronyms and Abbreviations

APN	Assessor Parcel Number
BAR	Biological Analysis Report
BIOS	Biogeography Information and Observation System
BSA	Biological Study Area
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
DBH	Diameter Brest Height
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

QK prepared this Biological Analysis Report to evaluate the potential for sensitive biological resources that may be impacted by the Pratt Family Ranch Project (Project), Tulare County, California. The proposed Project, approximately 94.6 acres, is located to the north of Visalia, California at the intersection of Pratt Road and Mooney Boulevard. D.R. Horton proposes to construct a residential development, with single family homes ranging from low-density to medium density that will include open space/park areas.

A database review and reconnaissance level survey were completed by QK biologists to characterize existing conditions on-site and determine the potential for special-status species and other sensitive biological resources to occur on-site that may be impacted by the Project. Four special-status wildlife species were determined to have potential to occur within the Project site and survey buffer (Biological Study Area), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), American badger (*Taxidea taxus*), and San Joaquin kit fox (*Vulpes macrotis mutica*). Nesting migratory birds have potential to occur within the Biological Study Area. No sensitive natural communities or special-status plant species have potential to occur on the Project footprint and impacts to those resources are not expected to occur. Two water features occur within the Biological Study Are. Based upon the Project design, no impacts to these features are expected to occur.

All Project activities will occur on areas that are in current use or on recently disturbed agricultural land. Direct impacts could include direct injury or mortality of individual special-status species and/or their young during the breeding and/or nesting season. Indirect impacts include loss of foraging habitat for wildlife species that utilize the Project site. Nesting migratory birds may be impacted if Project activities occur during the nesting season. The Project is not expected to substantially impact any other sensitive resources and would not conflict with local policies or ordinances, or conservation plans.

Because there is potential for special-status species to be present as transients and for migratory birds to nest on and near the Project site, avoidance and minimization measures are recommended which, when implemented, would reduce Project impacts to biological resources to less than significant level. This Biological Analysis Report is designed to support evaluation of the Project pursuant to the California Environmental Quality Act, but it could also be used as the basis for additional environmental evaluation and documentation that may be required by other regulations.

SECTION 1 - INTRODUCTION

Quad Knopf, Inc. (QK) prepared this Biological Analysis Report (BAR) to evaluate the potential impacts to special-status biological resources by the construction of the Pratt Family Ranch Project (Project) near the City of Visalia, California (Figure 1-1).

1.1 - Project Location

The proposed Project is located north of Visalia, California at the intersection of Pratt Road and Mooney Boulevard (Figure 1-2). It is within the *Visalia, California* U.S. Geological Survey (USGS) 7.5-minute quadrangle, and within the northeast corner of Section 13, Township 18 South, Range 24 East and northwest corner of Section 18, Township 18 South, Range 25 East. The proposed Project will be built on five contiguous parcels which include: Assessor Parcel Numbers (APN) 078-010-025, 078-010-028, 078-010-029, 078-110-022, 078-110-023, approximately 95 acres.

1.2 - Project Description

The Project proponent proposes to construct a residential development with single family homes ranging from low-density to medium density that will include open space/park areas encompassing approximately 94.6 acres (Project site).

1.3 - Purpose, Goals, and Objectives

The purpose of this BAR is to identify where potential special-status biological resources may occur within the Project site and survey area buffer, determine how those resources may be impacted by the Project, and recommend avoidance, minimization, and mitigation measures that would reduce impacts to a less than significant level. This BAR was prepared to support an analysis of biological conditions as required by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), and to support regulatory permit applications, if needed. A summary of the State, local and federal regulations that could apply to this Project is provided in Section 3 and Appendix A.

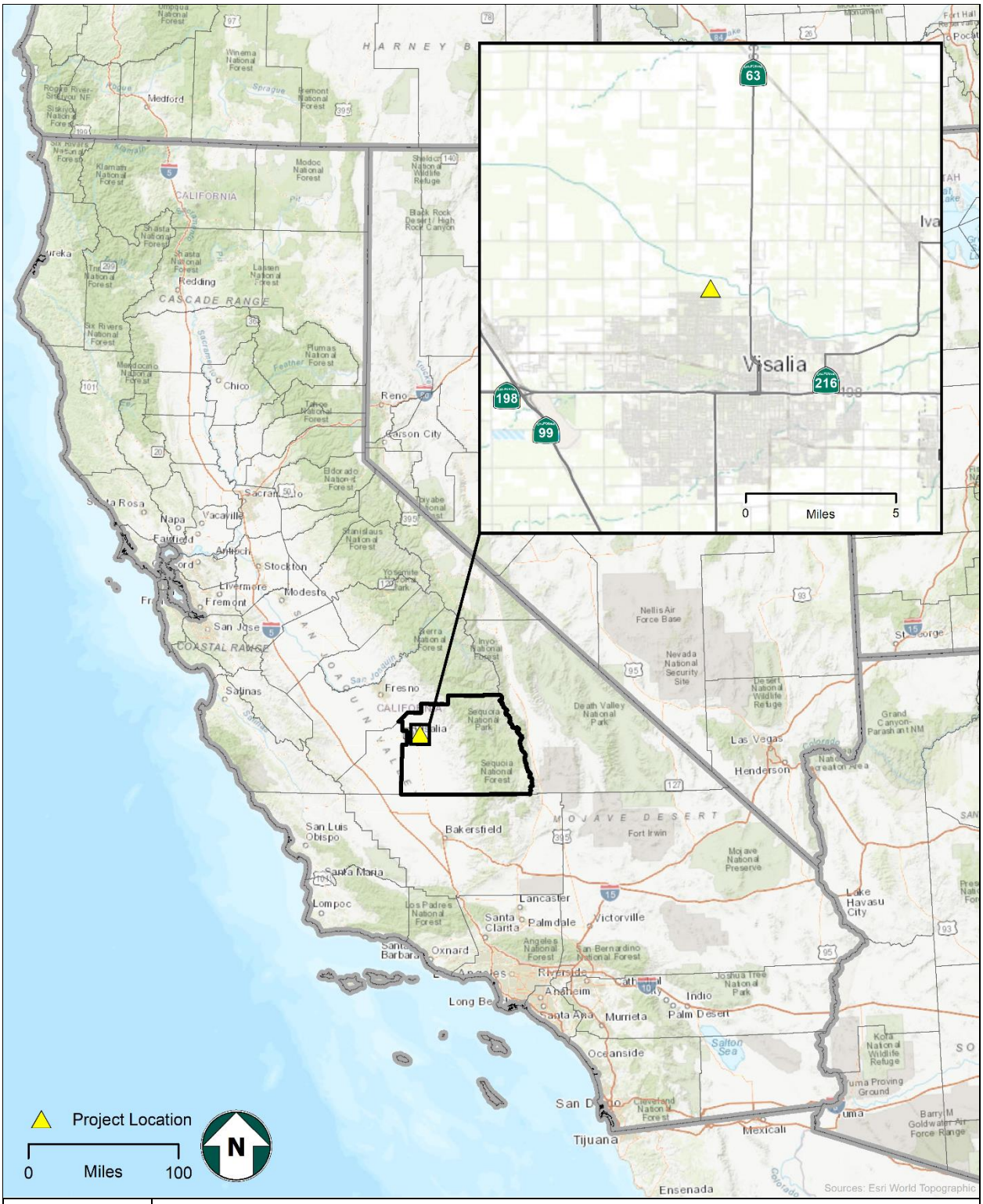

Figure 1-1
Regional Map,
Pratt Family Ranch Project, Tulare County, California

Figure 1-2
Project Location Map,
Pratt Family Ranch Project, Tulare County, California

SECTION 2 - METHODS

2.1 - Definition of Biological Study Area

The Biological Study Area (BSA) for the Pratt Family Ranch Project consists of the limits of the Project site and a 250-foot buffer surrounding the Project site (Figure 2-1).

2.2 - Definition of Special-Status Species

For the purposes of this report, special-status species include:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the project,
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA),
- Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW),
- Other species included on the CDFW's Special Animals List,
- Plant species with a California Rare Plant Rank (CRPR) in categories 1 or 2, *and*
- Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy.

The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

- **No**. Habitat on and adjacent to the site is clearly unsuitable to meet the needs of the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present (e.g., oak trees).
- **Yes**. Conditions on the site may, in some way, support a portion of the species ecology (foraging, reproduction, movement/migration).
- **Present**. Species was observed on the site or has been recorded (e.g., California Native Diversity Database (CNDDB), other reports) on the site recently (within the last 5 years).

2.3 - Literature Review and Database Analysis

The following sources were reviewed for information on special-status biological resources in the project vicinity:

- CDFW's California Natural Diversity Database (CDFW 2020a)
- CDFW's Special Animals List (CDFW 2009)
- CDFW's Biogeographic Information and Observation System (CDFW 2020b)

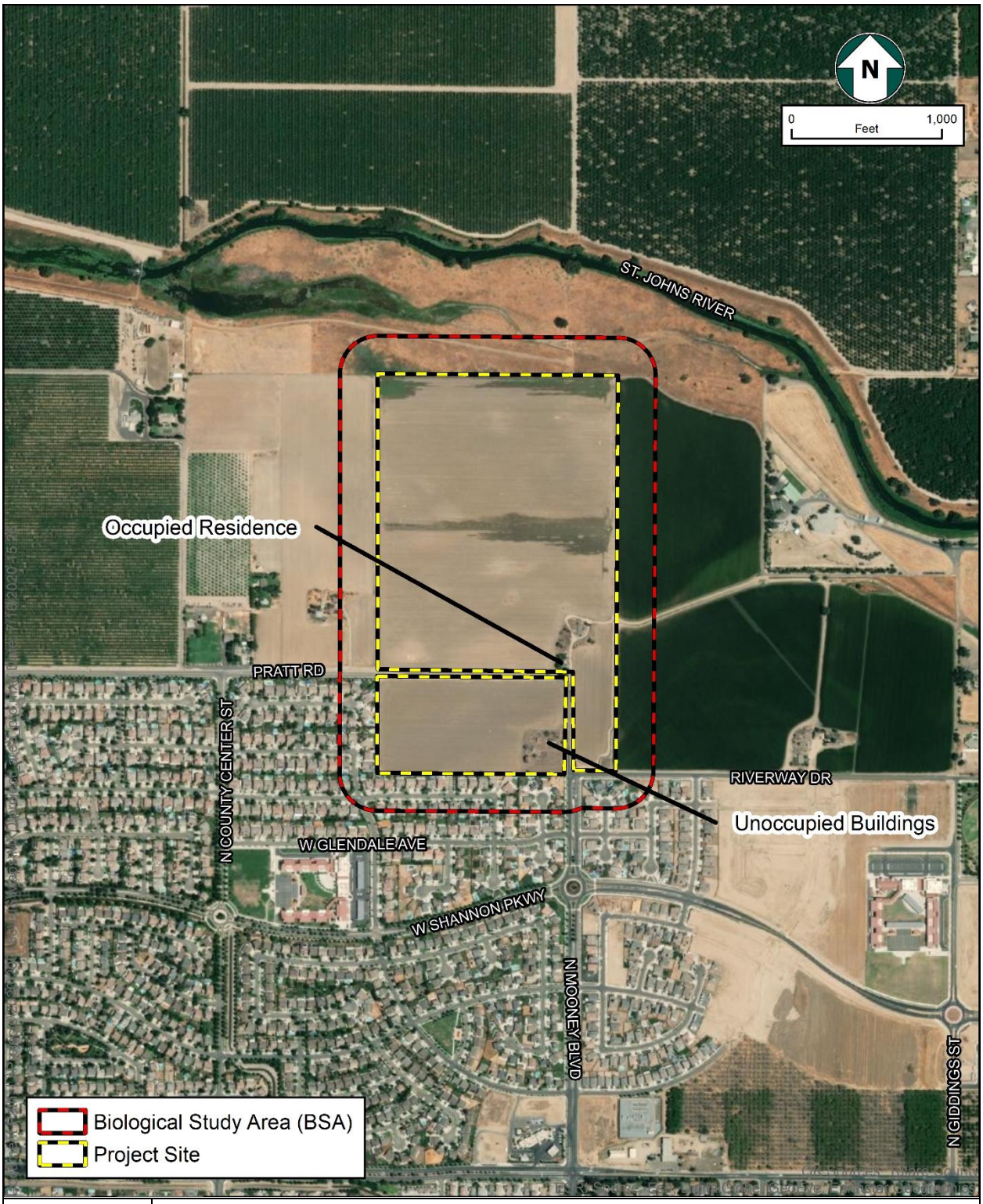

Figure 2-1
Biological Study Area,
Pratt Family Ranch Project, Tulare County, California

- CDFW's California Wildlife Habitat Relationships (CWHR) System (Mayer and Laudenslayer 1988)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2020)
- Calflora (Calflora 2020)
- U.S. Fish and Wildlife Service's (USFWS) Critical Habitat Mapper (USFWS 2020a)
- USFWS Information for Planning and Consultation system (USFWS 2020b)
- USFWS National Wetlands Inventory (NWI; USFWS 2020c)
- USGS National Hydrography Dataset (NHD; USGS 2020a)
- Federal Emergency Management Agency (FEMA) flood zone maps (FEMA 2020)
- U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2020a)
- NRCS National Cooperative Soil Survey, Lists of Hydric Soils, (NRCS 2020b)
- Current and historical aerial imagery (Google LLC 2020)
- Topographic maps (USGS 2020b)

For each of these data sources, the search was focused on the *Visalia, California* USGS 7.5-minute quadrangle in which the Project is located, plus the surrounding eight (8) quadrangles. A ten-mile search radius was used for acquiring information from the CNDDB.

The CNDDB provides element-specific spatial information on individually documented occurrences of special-status species and sensitive natural communities. Some of the information available for review in the CNDDB is still undergoing review by the CDFW; these records are identified as unprocessed data. The CNPS database provides similar information as the CNDDB, but at a much lower spatial resolution. Much of this information in these databases is obtained opportunistically and is often focused on protected lands or on lands where development has been proposed. Neither database represents a comprehensive survey for special-status resources in the region. As such, the absence of recorded occurrences in these databases at any specific location does not preclude the possibility that a special-status resource could be present. The NWI and Web Soil Survey provide comprehensive data, but at a low resolution that requires confirmation in the field.

The results of the database inquiries were reviewed to develop a list of special-status resources that may be present in the vicinity of the Project. The resources were then evaluated against existing conditions observed during the site visit to determine which have the potential to occur, and then the potential for the Project to impact those resources was assessed.

2.4 - Field Surveys

A reconnaissance survey of the BSA was conducted on May 22, 2020 by QK Environmental Scientists Karissa Denney and Erica Peña. The survey consisted of walking meandering pedestrian transects spaced 50 to 100 feet apart with the 250 foot buffer where feasible. Areas of the BSA within private property or areas which had no access were visually surveyed with the aid of binoculars.

General tasks completed during the survey included developing an inventory of plant and wildlife species, characterizing vegetation associations and habitat conditions within the BSA, assessing the potential for special-status plant and wildlife species to occur on or near the Project; and assessing the potential for nesting migratory birds and raptors to occur and an near the site. All locational data was recorded using ESRI Collector for ArcGIS software installed on an iPad and site conditions were documented with representative photographs (Appendix B).

SECTION 3 - REGULATORY SETTING

Regulated or sensitive resources that were studied and analyzed include special-status plant and animal species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement areas, and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions, which for this Project is the City of Visalia.

Impacts to biological resources were analyzed based upon local and regional policies and plans including the San Joaquin Valley Species Recovery Plan and Visalia 2030 General Plan.

Potential impacts to biological resources were analyzed based on the following list of statutes. Summaries of these statues are provided in Appendix A.

- CEQA
- FESA
- CESA
- Federal Clean Water Act
- California Fish and Game Code
- Migratory Bird Treaty Act
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act

SECTION 4 - ENVIRONMENTAL SETTING

This section identifies the regional and local environmental setting of the Project and describes existing baseline conditions. Information on the environmental setting was obtained from various sources of literature, databases, and aerial photographs. Site conditions were verified during the site reconnaissance survey conducted on May 22, 2020 by QK Environmental Scientists (Table 4-1).

Table 4-1
Field Survey Personnel and Timing

Date	Personnel	Time	Weather Conditions
May 22, 2020	Karissa Denney Erica Peña	9:40 – 12:40	Clear, sunny

4.1 - Physical Characteristics

In general, the region in supports active agricultural lands and land recently converted to residential development (see Figure 2-1). Physical characteristics of the BSA are described below. Representative photographs of the BSA are included in Appendix B.

4.1.1 - TOPOGRAPHY

The BSA is on the eastern floor of the Central Valley in the northwestern portion of Tulare County. The topography of the BSA is relatively flat with an elevation of about 325-feet above mean sea level (see Photographs 1 through 6 in Appendix B).

4.1.2 - CLIMATE

The BSA is within an area of that has a Mediterranean climate of hot summers and mild, wet winters. According to the Western Regional Climate Center (WRCC) average high temperatures range from 56°F in January to 97°F in July, with daily temperatures often exceeding 100°F several days in the summer (WRCC 2020). Average low temperatures range from 37°F in December to 64°F in July. Precipitation occurs primarily as rain, most of which falls from November to April, with an average of 10 inches of rainfall per year. Precipitation may also occur as a dense fog during the winter known as Tule fog. Rain rarely falls during the summer months.

4.1.3 - LAND USE

The region in general supports new residential development, agricultural activities, and the Saint Johns River. The Project site is on an active wheat field with southern portion and some of the western portion of the BSA consisting of residential housing. Historical imagery shows that the agricultural areas have been in use since at least 1994 (Google LLC 2020). Within

the Project area, there is an occupied residence located on the northern parcel and an unoccupied residence with associated farm buildings located on the southern parcel (see Figure 2-1). The northern portion of the BSA extend into annual grassland habitat adjacent to the Saint Johns River. The Project site is bounded to its east and west by cropland. Pratt Road and S. Mooney Boulevard bisect the Project site.

4.1.4 - SOILS

The BSA is underlain by one soil type: Grangeville sandy loam (Figure 4-1) which is described below.

Grangeville sandy loam. The Grangeville series consists of very deep, somewhat poorly drained soils that formed on alluvial fans and floodplains (NRCS 2020). This soil type is formed in moderate coarse textured alluvium dominantly from granitic rock sources. Slopes range from 0 to 2 percent at elevations from 0 to 1,800 feet. The climate is dry sub-humid with hot dry summers and cool moist winters. Mean annual precipitation is 7 to 16 inches and the mean annual air temperature ranges from 60to 64°F. Grangeville soils are used for growing alfalfa (*Medicago sativa*), grapes (*Vitis* sp.), cotton (*Gossypium* sp.), truck crops, and irrigated pasture. Some areas are used for urban development. Vegetation consists of annual grasses, forbs with native alkali-tolerant plants possibly with a few scattered oak (*Quercus* sp.) and cottonwood (*Populus* sp.) trees.

4.1.5 - HYDROLOGY

There are two jurisdictional water features within the BSA (Figure 4-2). One feature, located along the eastern boundary and flowing south, is designated as a canal/ditch by the National Hydrology Database (NHD, USGS 2020a) and is described as R5UBFx according to the Cowardin classification system (Cowardin 1979). The feature is manmade, lacked any significant vegetation cover and appeared to be well maintained. The bed is dirt lined, and the banks do not contain any riprap. While it was not inundated at the time of the survey, historic imagery show evidence of intermittent water flow.

The other stream feature, located along the northern boundary of the BSA, is designated by the NHD as the Saint Johns River (USGS 2020a). According to the Cowardin classification system, it is classified as R4SBA, which is defined as an intermittent streambed (Cowardin 1979). Vegetation along this feature contained oak trees with an annual grass species understory. Based on historical imagery it shows evidence of intermittent water flow.

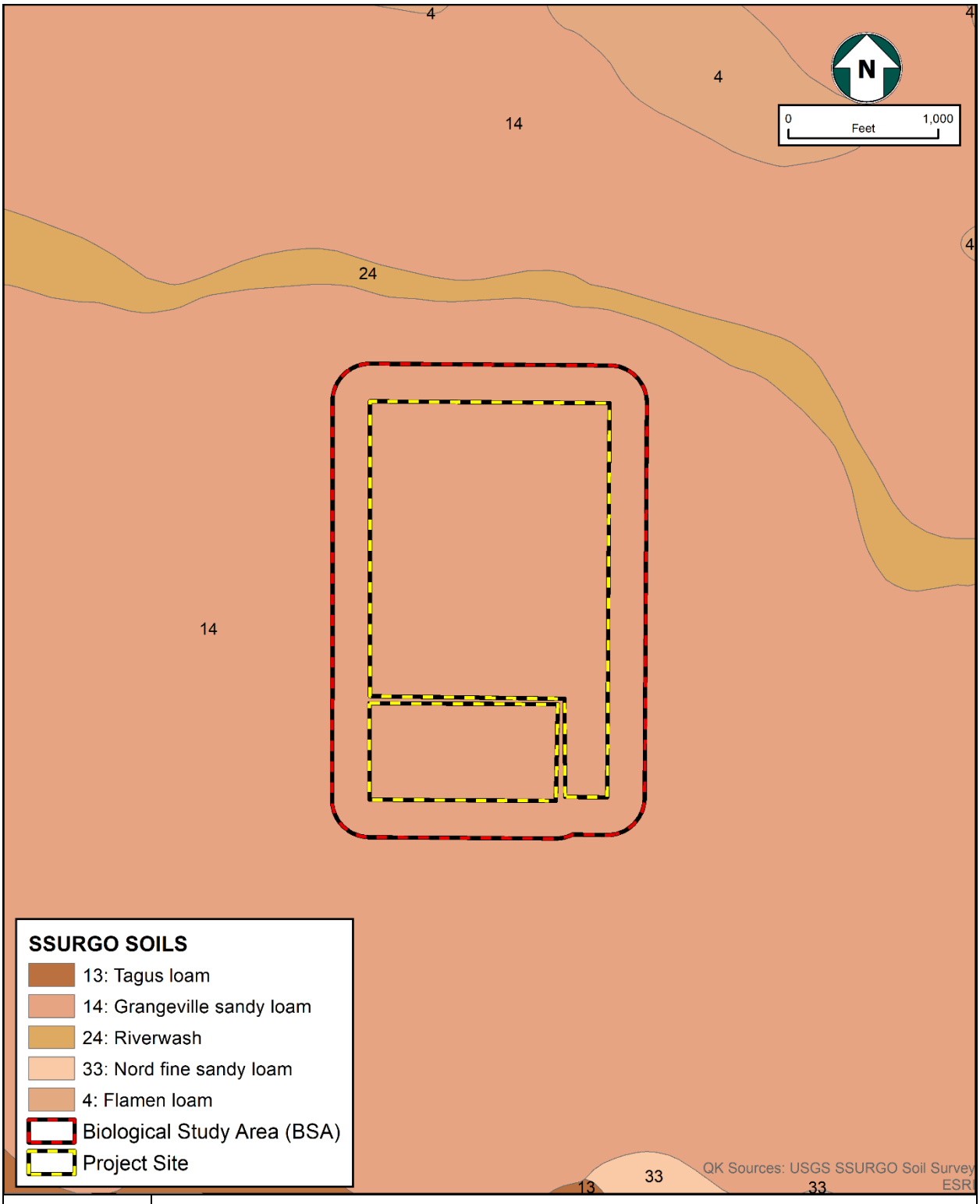

Figure 4-1
Soils Mapped within the BSA,
Pratt Family Ranch Project, Tulare County, California

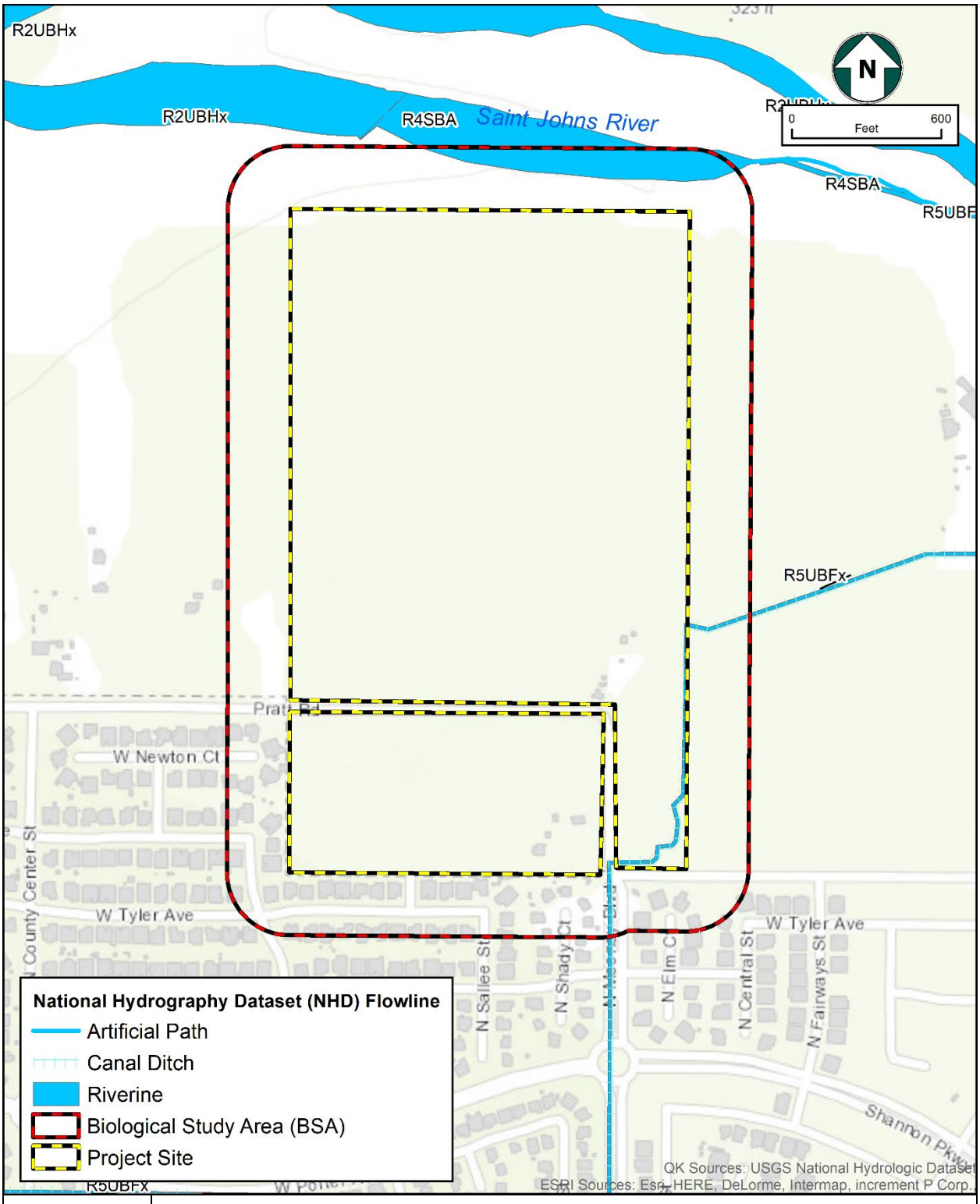

Figure 4-2
NWI and NHD Records of Aquatic Resources,
Pratt Family Ranch Project, Tulare County, California

According to the Federal Emergency Management Agency (FEMA), most of the BSA and Project site are within an area of 1% annual chance flood hazard, but some areas near the center of the BSA and Project site are within an area of 0.2% annual chance flood hazard (FEMA 2020) as presented in Figure 4-3.

4.2 - Vegetation and Other Land Cover

Four habitat types were observed within the BSA: Annual Grassland, Dryland Grain Crops, Irrigated Grain Crops, and Urban (Figure 4-4). The habitats observed on-site were described in the context of the CWHR (Mayer and Laudenslayer 1988). Habitat type acreage within the Project site and BSA are listed in Table 4-2. A complete list of plant species observed during the survey is included in Appendix C.

Table 4-2
Habitat Acreages Observed On-site

Habitat Type	Acreages	
	Project Site	BSA
Annual Grassland	0.0	11.0
Dryland Grain Crops	93.0	104.0
Irrigated Grain Crops	0.0	15.0
Urban	3.0	18.0

4.2.1 - ANNUAL GRASSLAND

This community is composed primarily of annual plant species many of which occur as understory plants in Valley Oak Woodland and other habitats. It is dominated by introduced annual grasses that include wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), wild barley (*Hordeum spontaneum*), and foxtail fescue (*Festuca* sp.). Many wildlife species use annual grasslands for foraging, but some require special habitat features such as cliffs, caves, ponds, or habitats with woody plants for breeding, resting, and escape cover. Annual Grassland habitat occurs mostly on flat plains to gently rolling foothills. Common soil orders include Entisols and Alfisols. This habitat occurs in various sized patches throughout the state.

Annual grassland is present within the BSA (see Figure 4-4, Photograph 7 in Appendix B). Typically, this habitat is dominated by several species of oak trees, and the understory consists of a variety of herbs and grasses including black mustard (*Brassica nigra*), red brome, wild oat, and downy brome (*Bromus tectorum*).

4.2.2 - DRYLAND GRAIN CROPS

This habitat includes non-irrigated grain and seed crops of barley (*Hordeum vulgare*), cereal rye (*Secale cereal*), oats, and wheat. Dryland grain and seed crops are usually established on fertile soils, which historically supported an abundance of wildlife. Grain crops have reduced the wildlife habitat richness and diversity. Many species of rodents and birds have adapted

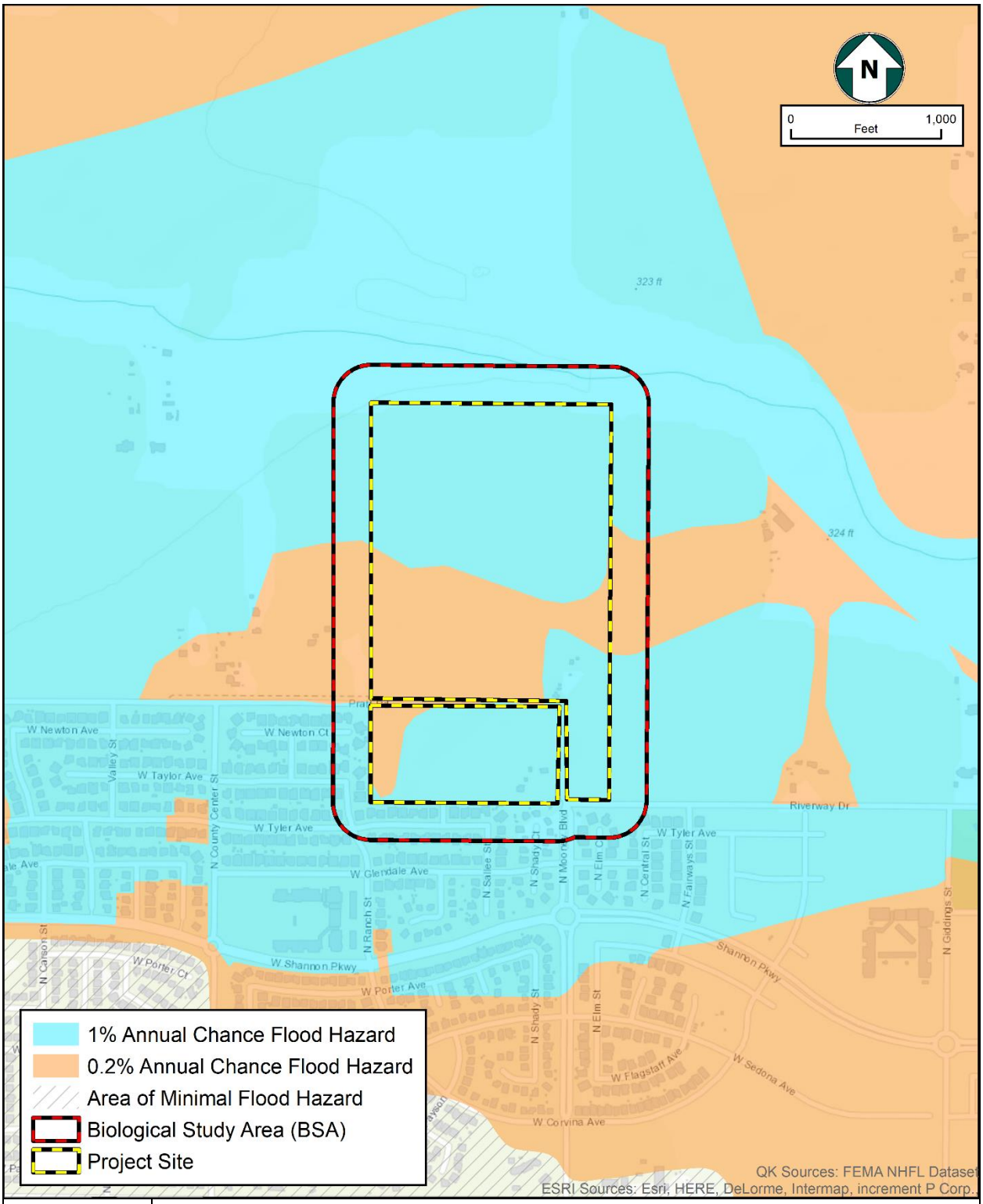

Figure 4-3
FEMA Flood Zone Map,
Pratt Family Ranch Project, Tulare County, California

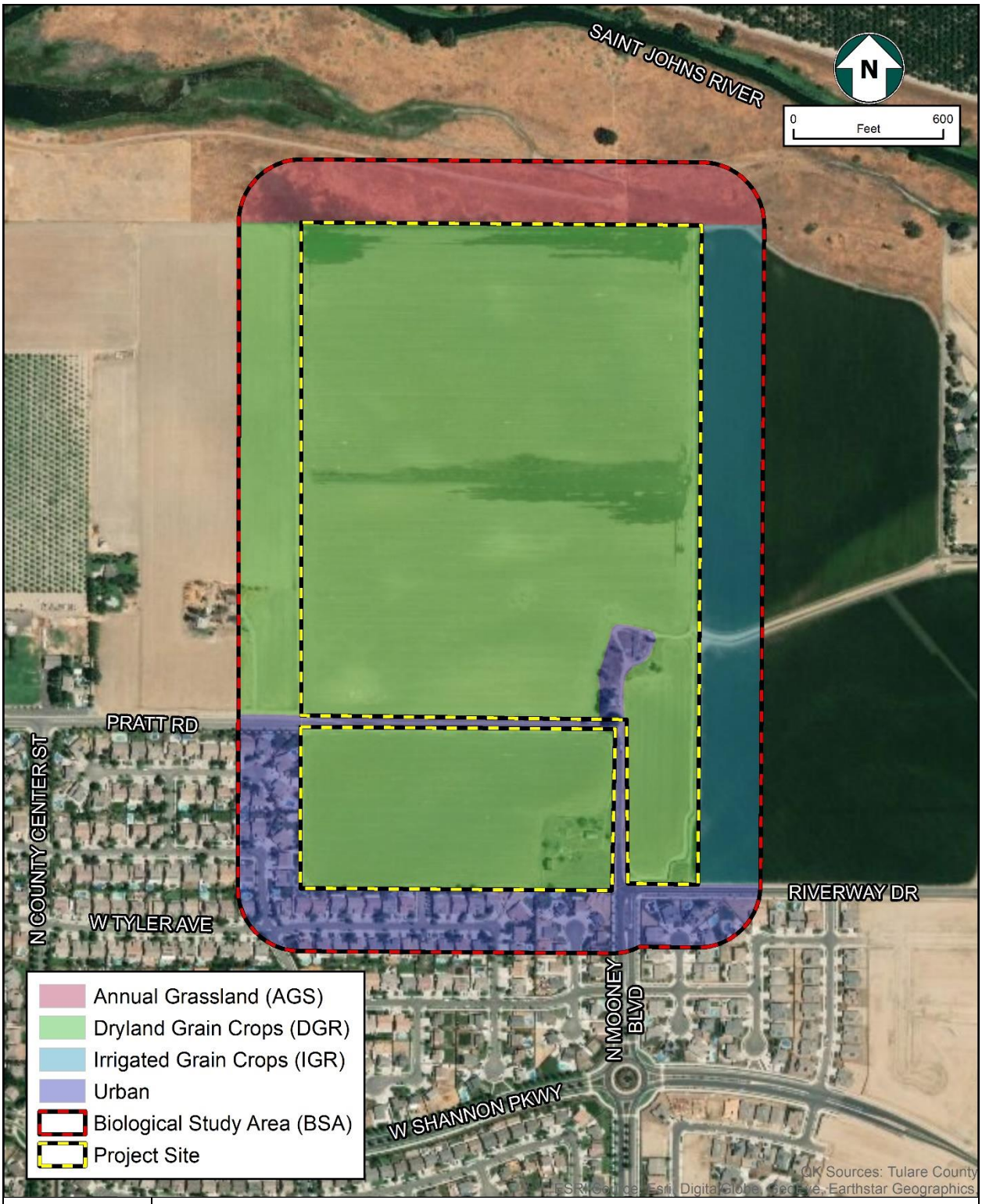

Figure 4-4
Vegetation Communities within the BSA,
Pratt Family Ranch Project, Tulare County, California

to croplands and are controlled by fencing, trapping, and poisoning to prevent excessive crop losses. Non-irrigated grain and seed crops are located on flat to gently rolling terrain.

Dryland grain crop is present within the BSA (see Figure 4-4, Photograph 8 in Appendix B). In addition to the residual wheat crop, common plants in this habitat included common groundsel (*Senecio vulgaris*), red-stem filigree (*Erodium cicutarium*), and black mustard.

4.2.3 - IRRIGATED GRAIN CROPS

This habitat includes a variety of crops in different sizes, shapes, and growing patterns. Irrigated grain crops include corn (*Zea mays*), safflower (*Carthamus tinctorius*), dry beans, and other such crops. These crops are typically planted in the spring and harvested in the summer or fall. These crops can be planted in rotation with other irrigated crops including winter wheat or barley. Many species of rodents and birds have adapted to croplands and are controlled by. fencing, trapping, and poisoning to prevent excessive crop losses. Irrigated grain crops are located on flat to gently rolling terrain.

Irrigated grain crops are present within the BSA (see Figure 4-4, Photograph 9 in Appendix B). In addition to the residual wheat crop, common plants in this habitat included common groundsel and black mustard.

4.2.4 - URBAN

This developed habitat includes five types of vegetative structure which includes tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Species composition in urban habitats varies with planting design and climate. Monoculture is commonly observed in tree groves and street tree strips. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. There is a progression outward of decreasing development and increasing vegetative cover. Species richness and diversity tend to be extremely low, particularly in the central urban core.

Urban is present within the BSA (see Figure 4-4, Photograph 10 in Appendix B). Portions of the BSA consist of existing paved roads and compacted dirt road and shoulder with ruderal vegetation. The Pratt Family Ranch and residences within the BSA are planted with a variety of ornamental plant species. Common plants in the urban habitat of the BSA include Russian thistle (*Salsola tragus*), cheeseweed mallow (*Malva parviflora*), and horticultural trees. These areas were once used for agricultural purposes (Google LLC. 2020), but since 2009 residential expansion encroached into these areas.

4.3 - General Wildlife Observations

Many of the wildlife species observed during the survey were typical of urban and agricultural habitats in the Central Valley. Bird species included Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), and mourning dove (*Zenaida macroura*). California ground squirrels (*Otospermophilus beecheyi*) and their sign (burrows and tracks) were

observed along the western boundary of the BSA along the dirt road. A complete list of wildlife observed is included in Appendix C.

SECTION 5 - SPECIAL-STATUS RESOURCES

Local, State, and federal agencies regulate special-status species and other sensitive biological resources and require an assessment of their presence or potential for presence on a project site prior to the approval of proposed development. This section discusses sensitive biological resources observed on the Project site and evaluates the potential for other sensitive biological resources to occur. Assessments of the potential occurrence of special-status species are based upon known ranges, habitat preferences of the species, species occurrence records from the CNDDB and CNPS, species occurrence records from other sites in the vicinity of the BSA, previously prepared and relevant reports, and the results of surveys conducted within the BSA.

5.1 - Special-Status Species

Table 5-1 presents the list of special-status plant and animal species determined to have potential to occur within the BSA and identifies if the Project may affect the species and threaten the viability of the species population. The complete list of species evaluated for this Project is included in Appendix D. Based upon habitat requirements, known ranges of the species and other environmental criteria from this search, it was determined that four species have the potential to occur on the BSA. The potential for species and rational is presented in the species list. Each species is further discussed in the subsections below.

Table 5-1
Special-Status Species with Potential to Occur On-site

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Potentially Affected by Project? Yes/No	Viability Threat? Yes/No
Birds			
Athene cunicularia burrowing owl	-/- -/SSC	Yes	No
Buteo swainsoni Swainson's hawk	-/ST -/BCC	Yes	No
Mammals			
Taxidea taxus American badger	-/- -/SSC	Yes	No
Vulpes macrotis mutica San Joaquin kit fox	FE/ST -/-	Yes	No

BCC USFWS Birds of Conservation Concern
FE Federally Endangered
ST State Threatened
SSC State Species of Special Concern

5.1.1 - SPECIAL-STATUS PLANT SPECIES

The literature and database review identified seventeen special-status plant species known or within potential to occur in the vicinity of the Project (Appendix D). None of these species occur on-site due to the lack of suitable habitat conditions (currently under cultivation or urban habitat) or because the BSA is located outside of the species' known range.

5.1.2 - SPECIAL-STATUS ANIMAL SPECIES

The literature review identified 24 special-status animal species known or with potential to occur in the vicinity of the project (Appendix D). Of those, four were determined to have the potential to occur on-site (see Table 5-1) and are discussed below.

Burrowing Owl

ATHENE CUNICULARIA

Status: CDFW Species of Special Concern

The western burrowing owl is a small ground-dwelling owl that can be found throughout western North America (Klute et al. 2003). This species can be found in a variety of habitat types including grasslands, deserts, or other open habitats where food resources are available and contain treeless areas with low vegetation cover and gently sloping terrain (Rodewald 2015).

Burrowing owls use earthen burrows, typically relying on other fossorial mammals to construct their burrows such as California ground squirrels or American badger (USFWS 1998). In California, they are most often associated with California ground squirrels (Winchell 1994). They use a burrow throughout the year for temperature regulation, offspring rearing, shelter, and escape from predators. While burrows are most often earthen, they also use atypical burrows such as pipes, culverts, and other man-made structures, most often as shelter (Shuford and Gardali 2008). Burrowing owls can have several burrows close to one other that they may frequently move among to avoid predators.

The nearest recorded CNDDB occurrence (EONDX 69904) was recorded in 2006 approximately 4.3 miles north of the BSA (CDFW 2020a). The occurrence documented 6 adults, each at a separate burrow. Based on-site conditions suitable nesting habitat does not exist within the BSA, although nearby agricultural fields could provide potential foraging habitat. Most of the BSA is consistently subjected to agricultural disturbance that would preclude colonization by burrowing owls. No burrowing owls or diagnostic signs were observed during the reconnaissance survey, but they could be present on the BSA as transient foragers.

Swainson's Hawk

BUTEO SWAINSONI

Status: State Threatened

Although present through a broad range in the western United States, Swainson's hawks occur in grassland, desert, and agricultural landscapes in the Central Valley and Antelope Valley (Bechard et al. 2010, Zeiner et al. 1990). This species typically migrates into Mexico and South America during the winter months, but some hawks in the southern portion of their range, including the Central Valley, may be residents. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dry-land grain fields nearby for foraging and have been known to nest in large eucalyptus trees along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dryland grain agricultural habitats, primarily for rodents. Swainson's hawks exhibit a moderate to high nest site fidelity for successful nest sites.

The nearest CNDDB occurrence (EONDX 109959) was recorded in 2017 approximately 5.0 miles southwest of the Project site (CDFW 2020a). The occurrence documented a stick nest with a nesting pair present in an oak tree, adjacent to agricultural fields and commercial areas. Two unoccupied stick nests were observed outside of the BSA (Photographs 11 to 13 in Appendix B), which were suitable for nesting Swainson's hawks (Figure 5-1). A pair of Swainson's hawks were observed foraging in the BSA and along the Saint Johns River (see Figure 5-1). Based on surrounding site conditions, nearby available nest sites, and presence of Swainson's hawks in the BSA, there is a potential for Swainson's hawks to forage within the Project site and nearby agricultural lands.

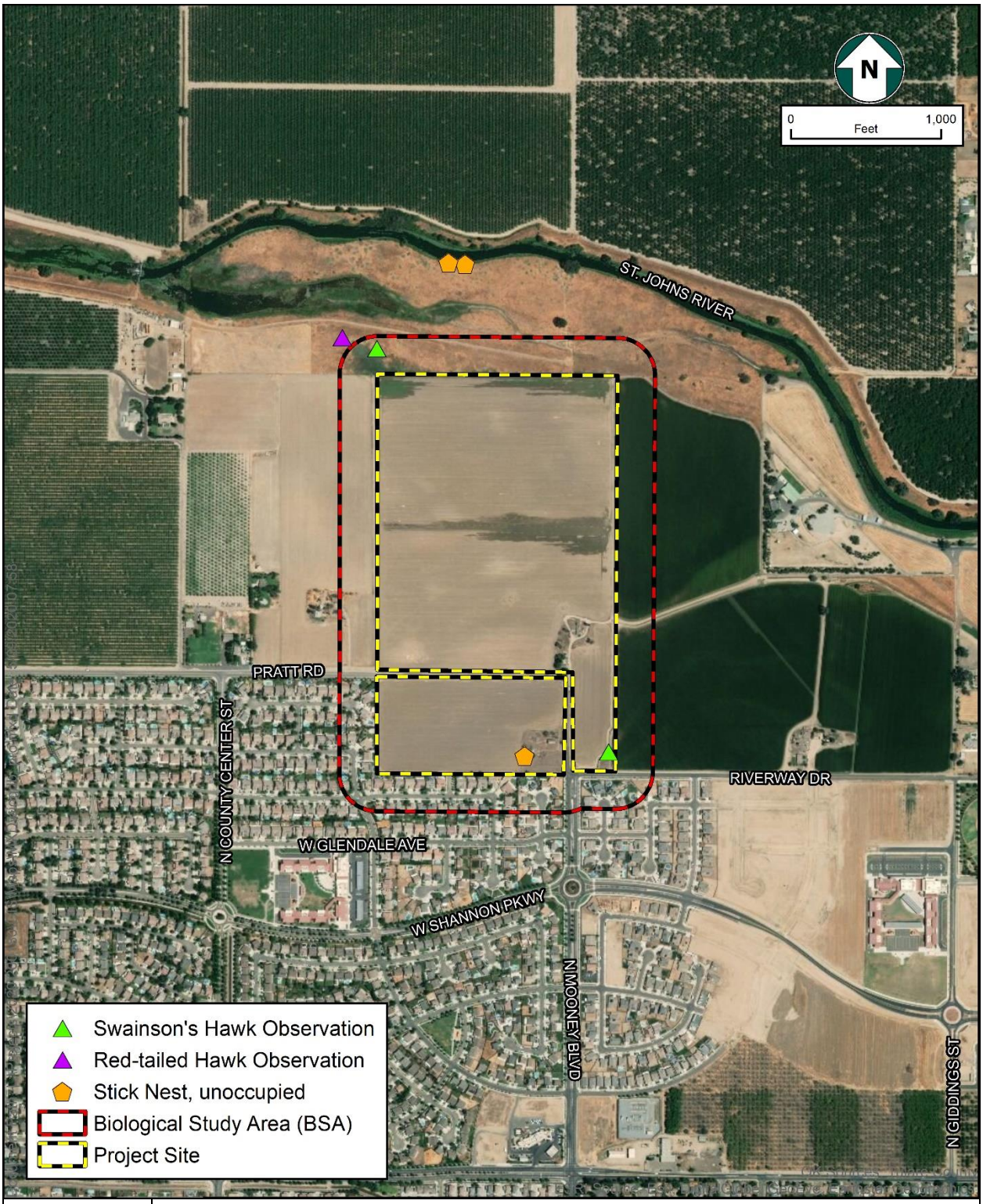

Figure 5-1
Special-Status Resources Observed within the BSA,
Pratt Family Ranch Project, Tulare County, California

American Badger

TAXIDEA TAXUS

Status: CDFW Species of Special Concern

The American badger is an uncommon permanent resident at lower elevations throughout California except for the northern North Coast (CDFG 1995) and alpine habitat. They can typically be found in grasslands, deserts, and drier habitats. Badgers are typically nocturnal and hunt or forage at night while spending daylight hours below ground. Normally, they have a single den entrance that is approximately 8 to 12 inches in width, in an elliptical or half-moon shape, mimicking their body shape. Dens are usually found in friable soils, which facilitates digging. American badgers spend most of their time near a den, but they may have multiple dens in an area that are frequently used. American badgers are known to be able to dig a new den each night. During cooler nights the entrance to the den may be partially plugged with soil to help regulate temperatures.

American badgers primarily feed on small mammals that they capture by excavating the prey's burrows. Prey may include pocket gophers, mice, chipmunks, and ground squirrels (CDFG 1995). Other prey may include birds, bird eggs, reptiles, invertebrates, and carrion.

The nearest CNDDB occurrence (EONDX 56600) was recorded in 1994 approximately 7.5 miles southeast of the BSA (CDFW 2020a). The occurrence documented one individual with the likelihood of a small population to survive within the area. Based on site conditions there is potential for the American badger to forage within the BSA and suitable denning habitat occurs in the Saint Johns River corridor. No American badgers or diagnostic signs were observed during the survey. This is a highly mobile species and may by present in the Project site as a transient and it could be present as a resident within the Saint Johns River corridor.

San Joaquin Kit Fox

VULPES MACROTIS MUTICA

Status: Federally Endangered and State Threatened

The San Joaquin kit fox is a subspecies of kit fox that is endemic to the San Joaquin Valley, Carrizo Plain, and Cuyama Valley, as well as other small valleys in the western foothills of the Central Valley of California (USFWS 1998, USFWS 2010). They are only found west of the Sierra Nevada crest. They occupy arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils. San Joaquin kit foxes are well-established in some urban areas and are highly adaptable to human-altered landscapes. They generally avoid intensively maintained agricultural land but forage well into croplands from surrounding habitat. San Joaquin kit foxes uses subterranean dens year-round for shelter and pup-rearing. They are nocturnally active but may be above ground near their dens during the day, particularly in the spring. They feed primarily on small mammals, but will consume a variety of prey, and will scavenge for human food.

The nearest CNDDB occurrence (EONDX 67936) was recorded in 1975 approximately 4.0 miles west of the Project site (CDFW 2020a). Based on-site conditions there is potential for San Joaquin kit fox to forage within the Project site. Suitable denning habitat occurs in the

BSA along the Saint Johns River corridor where native habitat occurs. No San Joaquin kit fox or diagnostic signs were observed in the BSA during the survey. This is a highly mobile species that has been historically known to occur in the area and may pass through the Project site as a foraging transient.

5.1.3 - OTHER PROTECTED SPECIES

Nesting Birds

Habitat within the BSA supports nesting native bird species, which are protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. The reconnaissance survey was conducted during the nesting bird season (February 1 to September 15). Three unoccupied stick nests, which are typically used by raptor species were observed. Two stick nests were located outside of the BSA along the Saint Johns River and one stick nest was in an abandoned barn on the southern parcel (see Figure 5-1). None of the nests were active during the survey. Various species of migratory birds will construct nests in a variety of habitats and structures, and nests may be found in trees or shrubs, in man-made structures, and directly on the ground. Because the BSA support several types of habitat suitable for nesting birds, it is likely that birds will nest within the BSA. Several bird species were seen on or in the vicinity of the BSA (see Appendix C).

5.2 - Sensitive Natural Communities

5.2.1 - SENSITIVE PLANT COMMUNITIES

The database and literature identified four sensitive plant communities within 10-miles of the BSA. Great Valley Valley Oak Riparian Forest (EONDX 15609) is recorded approximately 7.8-miles southeast of the BSA (CDFW 2020a). Northern Claypan Vernal Pool (EONDX 26434) is recorded approximately 7.3-miles northwest of the BSA (CDFW 2020a). Northern Hardpan Vernal Pool (EONDX 26878) is recorded approximately 5.7-miles north of the BSA (CDFW 2020a). Valley Sacaton Grassland (EONDX 8664) is located approximately 7.2-miles southeast of the BSA. None of these sensitive plant communities were observed within the BSA.

5.2.2 - CRITICAL HABITATS

The Project site does not overlap with any federally designated critical habitat Units (USFWS 2020b, Figure 5-2). There are designated critical habitats for five special-status species north, northwest and northeast of the BSA, the closest of which is approximately 4.0-miles to the north. That Habitat Unit provides critical habitat for four species including Hoover's spurge (*Chamaesyce hooveri*), San Joaquin Orcutt grass (*Orcuttia inaequalis*), vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole shrimp (*Lepidurus packardi*).

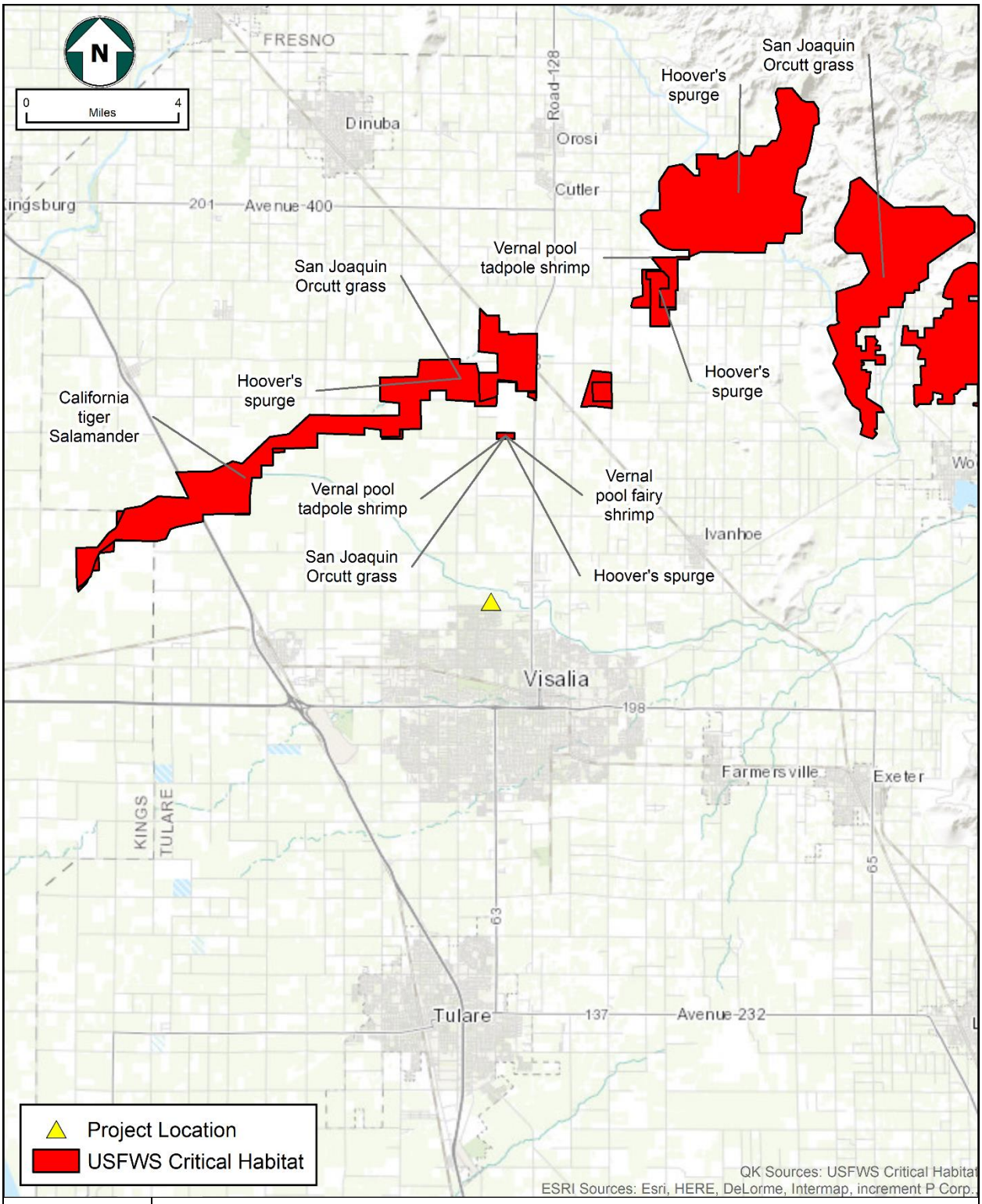

Figure 5-2
Mapped Critical Habitat in the Project Vicinity,
Pratt Family Ranch Project, Tulare County, California

5.3 - Jurisdictional Aquatic Resources

A formal delineation of waters of the U.S. and waters of the State was not conducted or warranted for this Project. The search of the NHD and NWI databases indicated two stream features within the BSA (see Figure 4-2). One feature, an irrigation canal that is located along the eastern boundary of the Project site, flows south, from its origins at the Saint Johns River. This stream feature is a branching man-made irrigation canal and will not be impacted by the Project. The other feature, which is the Saint Johns River, is located approximately 0.5-miles north of the BSA (Photograph 14 in Appendix B). The Saint Johns River flows from east to west and merges with Cross Creek approximately 7.0-miles downstream from the Project site. The Saint Johns River is a traditionally navigable water. The Project footprint is outside of the Saint Johns River floodplain and this feature would not be impacted by the Project.

5.4 - Wildlife Movement

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. Wildlife movement corridors can be large tracts of land that connect regionally important habitats that support wildlife in general, such as stop-over habitat that supports migrating birds or large contiguous natural habitats that support animals with very large home ranges (e.g., coyotes [*Canis latrans*], mule deer [*Odocoileus hemionus californicus*]). They can also be small scale movement corridors, such as riparian zones, that provide connectivity and cover to support movement at a local scale.

The BSA is not located within any identified wildlife movement corridors identified by the California Essential Habitat Connectivity Project (Spencer et al. 2010). The nearest wildlife movement corridor is located approximately 5.5-miles northwest of the BSA (Figure 5-3). The Saint Johns River and adjoining native habitat area is likely to be used as a local travel corridor for many species of wildlife. The Project does not encroach into that corridor and significant impacts to that corridor are not anticipated.

5.5 - Resources Protected by Local Policies and Ordinances

5.5.1 - VALLEY OAK ORDINANCE

Chapter 12.24 of the City of Visalia Municipal Code regulates the preservation and protection of Valley oak (*Quercus lobata*) or landmark trees. Protected Valley oak trees are defined as having a trunk diameter of two inches or greater at 4.5 feet above the root crown (or 2-inch diameter breast height [DBH]). Landmark trees are defined as "any native or non-native tree recognized by City Council resolution for its age, size, location, outstanding habitat value, superior beauty, historical, and/or cultural significance." Valley oak and landmark trees are protected on both public and private properties from destruction, removal, or pruning without a permit, except during emergency situations. Public utility projects are exempted from complying with this Municipal Code.

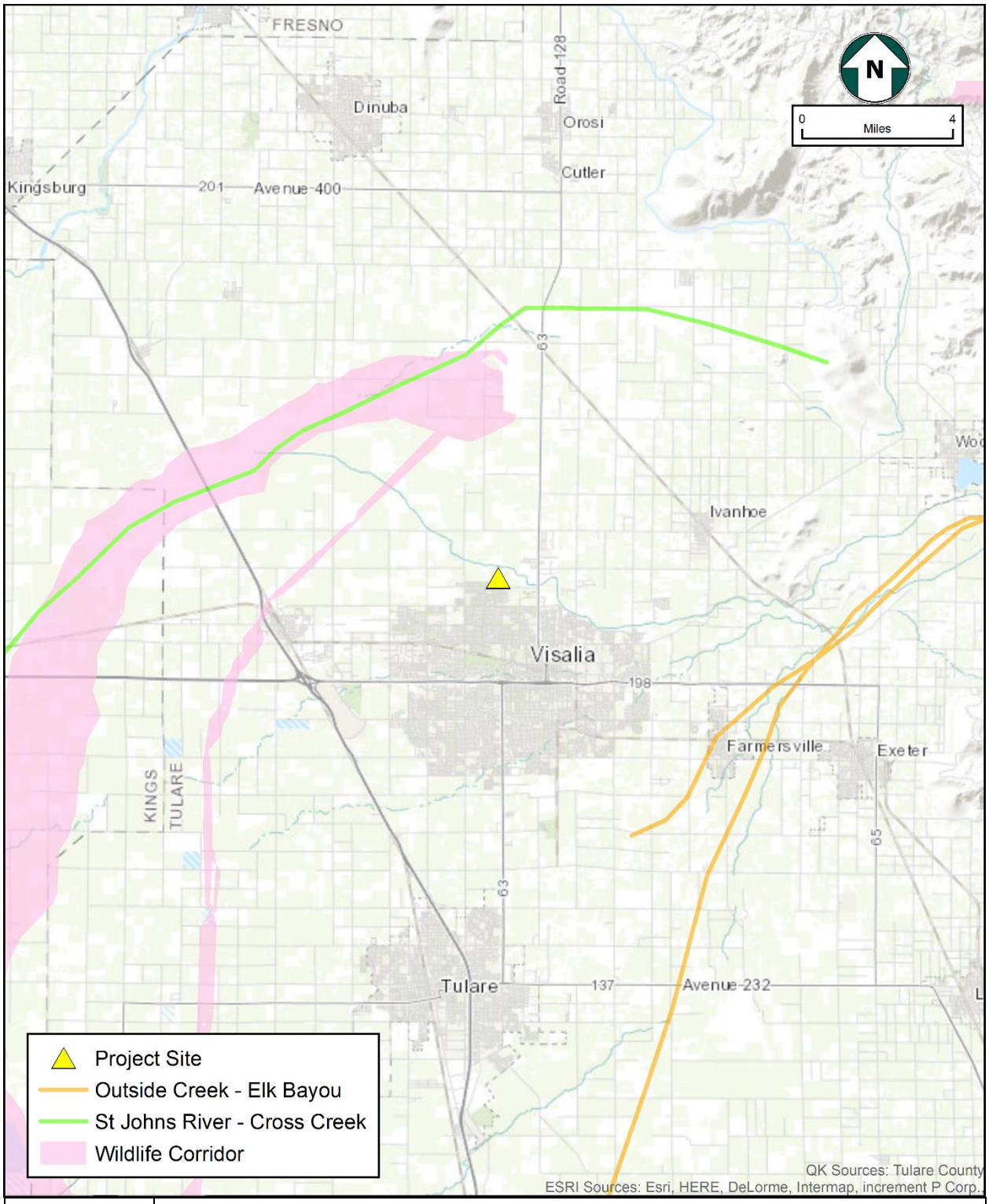

Figure 5-3
Movement Corridors and Linkages,
Pratt Family Ranch Project, Tulare County, California

5.6 - Habitat Conservation Plans

The Project is located within an area covered by the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (HCP). That HCP only applies to maintenance and operations of PG&E facilities and does not apply to this Project.

SECTION 6 - IMPACT ANALYSIS AND RECOMMENDED MITIGATION MEASURES

This section provides an analysis of the potential for sensitive biological resources to be impacted by the proposed Project. The analysis was developed using the CEQA Appendix G questions, but also provides sufficient information to support National Environmental Policy Act (NEPA) documentation.

6.1 - Special-Status Species

The proposed project would have a significant effect on biological resources if it would:

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

6.1.1 - PROJECT IMPACTS TO SPECIAL-STATUS PLANT SPECIES

No special-status plant species have the potential to occur within the BSA because of existing habitat and soil conditions. No impacts to special-status plant species will occur and no measures are warranted.

6.1.2 - PROJECT IMPACTS TO SPECIAL-STATUS ANIMAL SPECIES

Four special-status wildlife species have potential to occur within the BSA: burrowing owl Swainson's hawk, American badger, and San Joaquin kit fox.

Burrowing Owl

There is no evidence that the burrowing owl is present within the BSA. California ground squirrel burrows were observed along the western boundary of the BSA which could be used by a burrowing owl. The agricultural and urban habitat types provide some foraging habitat but there is no evidence that those areas are used for foraging. This species is known to be present in the region year-round and it is possible for a transient burrowing owl to occur on-site at any time. Direct impacts to burrowing owl could occur if there is an active burrow or transient individual within the BSA during the period of construction activities. Construction activities could result in crushing or destroying a burrow with a burrowing owl inside. Noise and vibration from the Project construction activities could alter the daily behaviors of individual owls and effect foraging activities or rearing of young. Implementation of Measures BIO–1 through BIO-3 and BIO-7, listed below, would reduce any impacts to the species to less than significant level.

Swainson's Hawk

Swainson's hawks were observed foraging within and near the BSA during the survey. The Project site does not contain suitable nesting habitat for Swainson's hawk but the site may

be used by Swainson's hawks for foraging. The Saint Johns River and the adjacent cropland, located to the north, east and west, provide suitable nesting and foraging habitat. Two unoccupied stick nests were observed in oak trees adjacent to the BSA.

The Project site lies within an expansive area of agricultural habitat, similar to what occur on the Project site. The loss of a small area such as this, with a very low prey base and low potential to provide substantial foraging opportunities does not warrant the acquisition or preservation of compensatory habitat. Direct impacts to nesting and foraging habitat for the species is reduced to below significant levels.

Impacts to nesting Swainson's hawks could occur during construction due to noise, vibration, and presence of construction workers that may alter normal behaviors and possibly lead to nest failure. Implementation of Measures BIO-4 through BIO-5 and BIO-7 would reduce any impacts to the species to below significant levels.

American Badger

There is no positive evidence that the American badger is present within the BSA, but potential denning and foraging habitat exists to the north of the Project boundary. Because this species is highly mobile, this species may be present on the site as a transient forager. Direct impacts could include injury or death of individuals, and entrapment in trenches or pipes. Noise, vibration, and the presence of construction workers could alter normal behaviors if badgers are present, which could affect reproductive success. Increased human presence at the new residential homes following Project activities could indirectly impact American badgers by deterring them from denning or foraging in the vicinity of the Project. Implementation of Measures BIO–1 through BIO-3, and BIO-7, listed below, would reduce any impacts to the species to less than significant level.

San Joaquin Kit Fox

There is no evidence that the San Joaquin kit fox is present within the BSA. The BSA and surrounding land are highly developed and provide minimal denning and foraging habitat, but the species is known to inhabit the region and is adaptable to urban environments. Because this species is highly mobile, it may be present from time to time on the BSA as a transient forager or part-time resident. Direct impacts resulting in injury, death, or entrapment in trenches or pipes could occur if a fox travels into the construction area. Construction activities could result in crushing or destroying a den with a kit fox inside. Noise, vibration, and the presence of construction workers may alter normal behaviors, which could affect reproductive success. Implementation of Measures BIO-1 through BIO-3 and BIO-7 would reduce impacts to the species to a less than significant level.

Nesting Birds

The BSA contains suitable habitat for a wide variety of nesting bird species. Within the BSA urban habitat, Saint Johns River corridor, and annual grassland would support birds that nest in trees, shrubs, grasses and man-made structures. When in active cultivation, dryland

grain crops and irrigated grain crops would support birds that use these agriculture fields for foraging. One unoccupied stick nest was observed in the abandoned barn located on the southern edge of the Project site and two unoccupied stick nests were observed in the oak trees located outside of the northern boundary of the BSA. If birds were to nest on or near the Project site, construction related vibration, noise, and dust production, and human presence could alter the normal behaviors of nesting birds in the vicinity of the Project and lead to nest failure. Implementation of Measures BIO-6 and BIO-7 would reduce impacts to these species to below significant levels.

Avoidance and Minimization Measures

The limited disturbance footprint of this Project, the extent of existing disturbances, and the short duration of activities at any given location, coupled with implementation of the avoidance and minimization measures listed below would reduce impacts of the Project to special-status wildlife species to level that would be less than significant. The following measures are recommended to avoid and minimize impacts to burrowing owl, Swainson's hawk American badger, San Joaquin kit fox, and other nesting birds.

BIO-1 **Pre-activity Surveys for burrowing owl burrows, American badger and San Joaquin kit fox dens.** Within 14 days of the start of Project activities, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of these species. The pre-activity survey should include walking transects to identify presence of burrowing owls and their burrows and American badgers, and San Joaquin kit foxes and their dens. The transects should be spaced at no greater than 30-foot intervals in order to obtain a 100 percent coverage of the Project site and a 250-foot buffer. Areas devoid of habitat incapable of supporting these species would not require surveys. If no evidence of these special-status species is detected, no further action is required.

BIO-2 **Avoidance of Burrowing Owl Burrows and American Badger and San Joaquin Kit Fox Dens**. If dens or burrows that could support these species are discovered during the pre-activity survey conducted under Measure BIO-1, avoidance buffers outlined below should be established. No work should occur within these buffers unless a qualified biologist approves and monitors the activity.

Burrowing Owl (active burrows)

- Non-breeding season: September 1 – January 31 – 160 feet
- Breeding season: February 1 – August 31 – 250 feet

American Badger and San Joaquin Kit Fox

- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal or pupping den – Contact agencies for further guidance

Any Ecological Sensitive Area (ESA) buffer established should remain in place until the species has left on its own. Once the species has left, the burrow may be monitored using trail cameras or tracking medium such as diatomaceous earth. If no species are detected for a minimum of three consecutive days/nights, the burrow may be hand excavated under the direct supervision of a qualified biologist. All burrow tunnels must be hand excavated to their terminus or examined before backfilling to ensure no burrowing owls, kit foxes, or other animals are hiding.

Alternatively, burrowing owls can be passively excluded from a non-nest burrow through the installation of one-way doors. Prior to engaging in such passive exclusion activities, an Exclusion Plan should be prepared following the guidance outlined in the CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The Exclusion Plan should be submitted to the CDFW for review and approval prior to implementation. Once approved, one-way doors may be installed at non-nest burrows. The doors should be monitored for a minimum of three days to ensure burrowing owls have left the burrow. The burrow may then be excavated as described above. If at any time during excavation a burrowing owl is detected within the burrow, excavation activities should immediately cease, and the one-way door reinstalled and monitored until the owl has left the burrow. Hand excavation may then resume. Exclusion efforts should be documented.

BIO-3 **Avoidance and Minimization Measures for Burrowing Owl, American Badger and San Joaquin Kit Fox.** The following avoidance and minimization measures should be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011). The standard measures for the protection of the San Joaquin kit fox are provided in full in Appendix E.

- Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all Project areas, except on County roads and State and federal highways.
- All Project activities should occur during daylight hours, but if work must be conducted at night then a night-time construction speed limit of 10-mph should be established.
- Off-road traffic outside of designated Project areas should be prohibited.
- To prevent inadvertent entrapment of kit foxes or other animals during construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one

or more escape ramps constructed of earthen-fill or wooden planks should be installed.

- Before holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW should be contacted before proceeding with the work.
- In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW should be contacted for guidance.
- All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction-site for one or more overnight periods should be thoroughly inspected for kit foxes and burrowing owls before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
- All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or Project site.
- No pets, such as dogs or cats, should be permitted on the Project site.
- Project-related use of rodenticides and herbicides should be restricted.
- A representative should be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative should be identified during the employee education program and their name and telephone number should be provided to the USFWS and CDFW.
- Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) should be recontoured if necessary, and revegetated to promote restoration of the area to pre-Project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the Project, but after Project completion will not be subject to further disturbance and has the potential to be revegetated.
- Any Project personnel who are responsible for inadvertently killing or injuring one of these species should immediately report the incident to their representative. This representative should contact the CDFW (and USFWS in the case of San Joaquin kit fox) immediately in the case of a dead,

injured or entrapped San Joaquin kit fox, American badger, or burrowing owl.

- The Sacramento Fish and Wildlife office and CDFW Region 4 office should be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project related activities. The CDFW should be notified in the case of accidental death to an American badger or western burrowing owl. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.
- New sightings of San Joaquin kit fox, American badger, or burrowing owl shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where a San Joaquin kit fox was observed should also be provided to the USFWS.

BIO-4 **Pre-activity Surveys for Swainson's Hawk Nests**. If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys should be conducted for Swainson's hawk nests in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, Swainson's Hawk Technical Advisory Committee (CDFG 2000). The surveys would be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys should be conducted during at least two survey periods.

If no Swainson's hawk nests are found, no further action is required.

BIO-5 **Swainson's Hawk Nest Avoidance** If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Construction activities should not occur within 500 feet of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist should have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist.

BIO-6 **Pre-activity Surveys for Nesting Birds.** If Project activities must occur during the nesting season (February 1 to September 15), pre-activity nesting bird

surveys should be conducted within seven days prior to the start of construction at the construction-site plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). If no active nests are found, no further action is required. However, existing nests may become active and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist should have the ability to stop construction if nesting adults show any sign of distress.

BIO-7 **Worker Environmental Awareness Training.** Prior to the initiation of construction activities, all personnel should attend a Worker Environmental Awareness Training program developed by a qualified biologist. The program should include information on the life histories of special-status species with potential to occur on the Project, their legal status, course of action should these species be encountered on-site, and avoidance and minimization measures to protect these species.

Significance After Mitigation. Implementation of the avoidance, and minimization measures above will reduce impacts to special-status wildlife species to a less than significant level.

6.2 - Sensitive Natural Communities and Critical Habitat

The proposed project would have a significant effect on biological resources if it would:

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

The BSA does not overlap critical habitat and there are no sensitive natural communities present. The Project would have no impacts to Critical Habitat or sensitive natural communities and no measures are warranted.

6.3 - Jurisdictional Aquatic Resources

The proposed project would have a significant effect on biological resources if it would:

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

The proposed developments are located on disturbed land and would not affect aquatic features. There are no jurisdictional aquatic resources that would be affected by the Project and no measures are warranted.

6.4 - Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

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

The Project is not located within a designated wildlife movement corridor or linkage and there are no features on-site that specifically lend themselves to wildlife movement. The Project does not serve as a connector between any patches of valuable wildlife habitat. The Project would not have any impacts to wildlife movement and no measures are warranted.

6.5 - Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

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

The proposed Project does not conflict with the Visalia 2030 General Plan. There are no impacts with respect to local policies and ordinances and no measures are warranted.

6.6 - Adopted or Approved Plans

The proposed project would have a significant effect on biological resources if it would:

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

The Project is located within an area covered by the PG&E San Joaquin Valley Operation and Maintenance HCP. This HCP applies only to PG&E's activities and does not apply to this Project.

SECTION 7 - LIMITATIONS, ASSUMPTIONS, AND USE RELIANCE

This Biological Analysis Report has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, and specified historical and literature sources. The biological investigation is limited by the scope of work performed. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile animal species could occupy the site on a transient basis or re-establish populations in the future. No other guarantees or warranties, expressed or implied, are provided.

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APPENDIX A

REGULATORY SETTING

Regulatory Setting

Federal Laws and Regulations

FEDERAL ENDANGERED SPECIES ACT OF 1973 (USC, TITLE 16, SECTIONS 1531 -1543)

The federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA provides a program for the conservation and recovery of threatened and endangered species as well as the protection of designated critical habitat that USFWS determines is required for the survival and recovery of listed species.

Section 9 lists actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction of adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations (CCR) Title 50, Part 402. If an activity could result in "take" of a listed species as an incident of an otherwise lawful activity, then a biological opinion can be issued with an incidental take statement that exempts the activity from FESA's take prohibitions.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at CFR Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS. Section 10 would apply to the Project if take of a species (as defined in Section 9) were determined to occur.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA: 1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special

management consideration or protection; and 2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

MIGRATORY BIRD TREATY ACT (USC, TITLE 16, SECTIONS 703 - 711)

The MBTA, first enacted in 1918, is a series of treaties that the United State has with Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (U.S. Code Title 16, Section 703). The MBTA currently includes several hundred species and includes all native birds.

BALD AND GOLDEN EAGLE PROTECTION ACT OF 1940 (USC, TITLE 16, SECTION 668)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucoephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and established civil penalties for violation of this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially inferring with normal breeding, feeding, or sheltering behavior. (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

FEDERAL CLEAN WATER ACT (USC, TITLE 33, SECTIONS 1521 - 1376)

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires that a Project applicant that is pursuing a federal license or permit allowing a discharge to waters of the U.S. to obtain State Certification of Water Quality, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by the United States Army Corps of Engineers (USACE) that regulates the discharge of the dredged or fill material into waters of the U.S., including wetlands. The USACA implementing regulations are found in CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Applicable State Laws and Regulations

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CALIFORNIA PUBLIC RESOURCES CODE, SECTIONS 21000 - 21178, AND TITLE 14 CCR, SECTION 753, AND CHAPTER 3, SECTIONS *15000 - 15387)*

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps guide the issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a State, County, or City agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project; prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring; disclose to the public the agency decision making process to approve discretionary projects; enhance public participation in the environmental review process; and improve interagency coordination.

State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species nonetheless may be considered rare or endangered for purposed of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

CALIFORNIA ENDANGERED SPECIES ACT (CALIFORNIA FISH AND GAME CODE SECTION 2050 ET SEQ.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve Projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For Projects that would result in take of a species listed under the CESA, a project proponent would need to obtain a take permit under Section 2081(b). Alternatively, the CDFW has the option of issuing a Consistency Determination (Section 2080.1) for Projects that would affect a species listed under both the CESA and the FESA, as long as compliance with the FESA would satisfy the "fully mitigate" standard of CESA, and other applicable conditions.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB regulates waters of the State under the authority of the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands whenever feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss

of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB has jurisdiction over waters deemed 'isolated' or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste into waters of the State, and such discharges are authorized through an Order of Waste Discharge (or waiver of discharge) from the RWQCB.

VARIOUS SECTIONS OF THE CALIFORNIA STATE AND FISH AND GAME CODE

Section 460 and Sections 4000-4003

Chapter 5 of the California Fish and Game Code (FGC) describes regulations concerning the take of furbearing mammals, including defining methods of take, seasons of take, bag and possession limits, and areas of the State where take is allowed. Section 4000-4003 defines furbearing mammals, and the issuance of permits by the Department. Sections 460 and 4000 identifies fisher, marten, river otter, desert kit fox and red fox as furbearing mammals, and Section 460 prohibits take of these species at any time. This section of the California Fish and Game Code (FGC) has historically been interpreted to apply to restriction on furbearer trapping permit but has recently been expanded by CDFW to apply to any forms of take and treated as if these species were listed under CESA.

Sections 1600 through 1616

Under these sections of the FGC, a Project operator is required to notify CDFW prior to any Project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California Code of Regulations, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports of has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and Project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable Project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement.

Sections 3511, 4700, 5050, and 5515

The protection of fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the FGC. These statues prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species, except as allowed for in an approved Natural Communities Conservation Plan (NCCP), or through direct legislative action.

Sections 1900 through 1913 - Native Plant Protection Act

California's Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provision of the NPPA prohibit that taking of listed plants from the wild and require notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. A Project proponent is required to conduct botanical inventories and consult with CDFW during Project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Local and Regional Laws, Regulations, and Policies

CITY OF VISALIA GENERAL PLAN

City of Visalia's Open Space and Conservation element includes an objective and policies for preservation of natural resources including riparian areas, fish and wildlife habitat, and vegetation.

Table A-1
Chapter 6 – Open Space and Conservation

Objective	
OSC-0-10	Protect and enhance natural vegetation throughout the Planning Area, especially types that are considered sensitive natural communities by the Department of Fish and Game.
Policies	
OSC-P-26:	Establish Best Management Practices (BMPs) for control of invasive plant species where such plants could adversely impact wildlife habitat.
OSC-P-27:	Establish a "no net loss" standard for sensitive habitat acreage, including wetlands and vernal pools potentially affected by development.
OSC-P-28	Protect significant stands of Valley Oak woodlands from further development by designating them for Conservation, creating habitat management plans, where needed, and undertaking restoration activities as appropriate.
OSC-P-29	Update the Zoning Ordinance to implement the Conservation land use designation on the Land Use Diagram.
OSC-P-30	Require assessments of biological resources prior to approval of any discretionary development projects involving riparian habitat, wetlands, or special status species habitat. Early in the development review process,

	consult with California Department of Fish and Game, U.S. Fish and Wildlife Service, and other agencies.
OSC-P-31	Protect and enhance habitat for special status species, designated under state and federal law. Require protection of sensitive habitat areas and special status species in new development in the following order: 1) avoidance, 2) onsite mitigation, and 3) offsite mitigation.
OSC-P-32	Develop riparian planting and maintenance standards< and incorporate these standards into conservation area management plans>
OSC-P-33	Develop a list of recommend native plants and landscaping guidelines. Make this list and guidance accessible through the Community Development Department, the public library, and the City website.
OSC-P-34	Enhance views and public access to Planning Area waterways and other significant features such as Valley Oak groves consistent with flood protection, irrigation water conveyance, habitat preservation and recreation planning policies.
OSC-P-35	Use native trees in street and public landscaping designs, where appropriate, to preserve Visalia's character.
OSC-P-36	Prepare a comprehensive habitat management plan for areas designated as Conservation in order to take advantage of opportunities for habitat enhancement, restoration, and urban forest development and resources conservation.
OSC-P-37	Design selected storm water ponds and retention basins to serve a dual role as wildlife habitat by planting species appropriate for food and cover needs. Work with a trained professional in design, selection and management of each site.
OSC-P-38	Revise the City's Valley Oak Ordinance to include cottonwood groves and other mature native trees, and update the map of landmark trees and distinctive biotic areas.

Source: (City of Visalia General Plan, 2014)

LOCAL ORDINANCES

Valley Oak Ordinance

Chapter 12.24 of the Municipal Code regulates the preservation and protection of Valley Oak (*Quercus lobata*) or landmark trees. Protected Valley oak trees are defined by a trunk diameter of two inches or greater at 4.5 feet above the root crown (or 2-inch diameter breast height [DBH]). Landmark trees are defined as "any native or non-native tree recognized by city council resolution for its age, size, location, outstanding habitat value, superior beauty,

historical, and/or cultural significance." Approved Valley oak or landmark trees are protected from destruction, removal, or pruning without a permit on both public and private properties; however, emergency events and public utilities are exempt.

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS

Photograph 1: View of the Project site northwest corner, facing east.
GPS Coordinates: 36.368163, -119.318806.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 2: View of the Project site northeast corner, facing south.
GPS Coordinates: 36.370884, -119.313500.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 3: View of the BSA eastern boundary looking at current farm buildings, facing southwest.
GPS Coordinates: 36.366542, -119.314045.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 4: View of the northern parcel, south of Pratt Road, facing north.
GPS Coordinates: 36.698654, -119.315252.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 5: View of the southern parcel and abandoned farm buildings, facing south.
GPS Coordinates: 36.698654, -119.315252.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 6: View of the southern parcel, facing north.
GPS Coordinates: 36.363788, -119.317138.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 7: Annual grassland located within the northern boundary of BSA, facing north.
GPS Coordinates: 36.371002, -119.315465.
Photograph taken by Karissa Denney on May 22, 2020.

Photograph 8: Dryland grain crops within the BSA, facing east.
GPS Coordinates: 36.365788, -119.318711.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 9: Irrigated grain crops located within the eastern boundary of BSA, facing southeast.
GPS Coordinates: 36.366542, -119.313378.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 10: Urban habitat located within the southern boundary of BSA, facing south.
GPS Coordinates: 36.363920, -119.314227.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 11: Unoccupied stick nest #1 located in an oak tree outside of the BSA, facing north.
GPS Coordinates: 36.373037, -119.317191.
Photograph taken by Karissa Denney on May 22, 2020.

Photograph 12: Unoccupied stick nest #2 located in an oak tree outside of the BSA, facing north.
GPS Coordinates: 36.373011, -119.316816.
Photograph taken by Erica Peña on May 22, 2020.

Photograph 13: Unoccupied stick nest #3 located in an abandoned barn inside the BSA, facing south.
GPS Coordinates: 36.364069, -119.315431.
Photograph taken by Karissa Denney on May 22, 2020.

Photograph 14: Dry man-made irrigation canal entering the eastern boundary of BSA, facing east.
GPS Coordinates: 36.366542, -119.313378.
Photograph taken by Erica Peña on May 22, 2020.

APPENDIX C

PLANT AND ANIMAL SPECIES OBSERVED WITHIN THE BIOLOGICAL STUDY AREA

Table C-1
Plant Species Observed within the Biological Study Area on May 22, 2020
Pratt Family Ranch Project, Tulare County, California

Scientific Name	Common Name	Status	Native or Introduced
Trees			
Eucalyptus camaldulensis	red gum/Eucalyptus	None	Introduced
Phoenix dactylifera	date palm	None	Introduced
Quercus lobata	Valley oak	None	Native
Herbs			
Brassica nigra	black mustard	None	Introduced
Cucurbita palmata	coyote melon	None	Native
Datura stramonium	Jimson weed	None	Introduced
Erigeron canadensis	Canada horseweed	None	Native
Erodium cicutarium	red stemmed filaree	None	Introduced
Helianthus annuus	common sunflower	None	Native
Malva parviflora	cheeseweed mallow	None	Introduced
Marrubbium vulgare	white horehound	None	Introduced
Salsola australis	Russian thistle	None	Introduced
Senecio vulgaris	common groundsel	None	Introduced
Silybum marianum	milk thistle	None	Introduced
Tribulus terrestris	puncture vine	None	Introduced
Grasses			
Avena sativa	common oat	None	Introduced
Bromus tectorum	downy brome	None	Introduced
Schismus arabicus	Arabian schismus	None	Introduced
Triticum aestivum	common wheat	None	Introduced
Zea mays	corn	None	Introduced

*Cal-IPC = California Invasive Plant Council.
Rating system: **High** = several ecological impacts; **Moderate** = substantial but not severe ecological impacts; **Limited** = minor ecological impacts or not enough information to justify higher score; **Alert** = species ranked as High or Moderate with limited distribution, but potential to spread; **Watch** = could pose a high risk of becoming invasive in the future.

Table C-2
Animal Species Observed within the Biological Study Area on May 22, 2020
Pratt Family Ranch Project, Tulare County, California

Scientific Name	Common Name	Status	Native or Introduced
Reptiles			
Sceloporus occidentalis	western fence lizard	None	Native
Birds			
Buteo jamaicensis	red-tailed hawk	None	Native
Buteo swainsoni	Swainson's hawk	ST	Native
Mimus polyglottos	Northern mockingbird	None	Native
Pavo cristatus	Indian peafowl	None	Introduced
Picidae sp.	woodpecker	None	Native
Sturnus vulgaris	common starling	None	Introduced
Zenaida macroura	mourning dove	None	Native
Mammals			
Canis latrans	*coyote	None	Native
Otospermophilus beecheyi	California ground squirrel	None	Native

* Indicates sign (i.e. tracks, scat, nest, burrow or den, calls) observed.

APPENDIX D

SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS

Table D-1
Special-Status Plant Species in the Regional Vicinity of the Project Site
Pratt Family Ranch, Tulare County, California

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Sensitive Plant Communities				
Great Valley Valley Oak Riparian Forest	-/- S1.1/-	This community occurs in relatively fine-textured alluvium, somewhat back from active river channels. These sites experience overbank flooding (with abundant alluvial deposition and groundwater recharge) without severe physical battering or erosion.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1985 and approximately 7.8 miles southeast of the Project and is presumed extant (EONDX 15609).
Northern Claypan Vernal Pool	-/- S1.1/-	This community consists of a low, herbaceous community dominated by annual herbs and grasses. Germination and growth begin with winter rains, often continuing even when inundated. Rising spring temperatures evaporate the pools, leaving concentric bands of vegetation. Claypan vernal pools are typically small and contain less cover than northern hardpan vernal pools.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1983 and approximately 7.3 miles northwest of the Project and is presumed extant (EONDX 26434).
Northern Hardpan Vernal Pool	-/- S3.1/-	This community occurs on old, very acidic, Fe-Si cemented hardpan soils	No	Habitat to support this species is absent from the Project site. Nearest

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		(Redding, San Joaquin, and similar series). The microrelief on these soils typically is hummocky, with mounds intervening between localized depressions. Winter rainfall perches on the hardpan, forming pools in the depressions. Evaporation (not runoff) empties pools in the spring.		CNDDB occurrence is from 1980 and approximately 5.7 miles north of the Project and is presumed extant (EONDX 26878).
Valley Sacaton Grassland	-/- S1.1/-	This community is dominated by alkali sacaton, a tuft formed grass. It is found in areas with fine textured, poorly drained and usually alkaline soils with high water tables, or that are flooded during winter months.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1985 and approximately 7.2 miles southeast of the Project and is presumed extant (EONDX 8664).
Plants				
Atriplex cordulata var. cordulata Heartscale	-/- 1B.2/-	Found in alkali grasslands on saline and alkaline soils in and around scald areas. Found in chenopod scrub and valley and foothill grassland habitats.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1938 and approximately 5.0 miles southwest of the Project and is presumed extant (EONDX 3244).
Atriplex cordulata var. erecticaulis Earlimart orache	-/- 1B.2/-	Annual herb that occurs in saline or alkaline soils at elevations under 100 meters (m). Blooms	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		between August and September.		2002 and approximately 6.4 miles northwest of the Project and is presumed extant (EONDX 47221).
Atriplex depresse brittlescale	-/- 1B.2/-	Annual herb found on alkali soils that typically occur in barren areas within alkali grassland, alkali meadow, and alkali scrub habitat. It is occasionally found on margins of alkali vernal pools.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 1881 and approximately 1.6 miles southeast of the Project and is presumed extant (EONDX 83720).
Atriplex minuscula lesser saltscale	-/- 1B.1/-	Annual plant; occurs in chenopod scrub, grasslands, and alkali sink habitats, but is also known to occur in wet areas. Blooms from April to October. Occurs at elevations under 330 feet.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 2002 and approximately 5.4 miles southwest of the Project and is presumed extant (EONDX 56431).
Atriplex persistens vernal pool smallscale	-/- 1B.2/-	Annual herb; blooms June and August – October; restricted to alkaline vernal pools on the floor of the San Joaquin Valley and is endemic to California; elevation ~ 30 to 375 feet; threatened by agriculture and flood control activities; documented primarily on Central Valley floor.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 2010 and approximately 1.6 miles northeast of the Project and is presumed extant (EONDX 90336).
Atriplex subtilis subtle orache	-/- 1B.2/-	Annual herb; blooms June – October; occurs in chenopod scrub, grassland, and alkali sink habitats,	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 2002

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		sometimes wet areas, at elevations under 70 m.		and approximately 5.1 miles southwest of the Project and is possibly extirpated (EONDX 33912).
Caulanthus californicus California jewelflower	FE/SE 1B.1/-	Annual herb; blooms February to May; occurs in slightly alkaline sandy soils in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland; elevation ~200 to 3,280 feet; found in San Joaquin Valley, Carrizo Plain, and Cuyama Valley from Fresno County south to Santa Barbara County; many occurrences presumed extirpated; threatened by development, grazing, and competition from non-native plants.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Delphinium recurvatum recurved larkspur	-/- 1B.2/-	Perennial herb; commonly found in chenopod scrub, valley and foothill grassland and cismontane woodland; most common on sandy or clay alkaline soils, at elevations between 30 and 600 m; blooms March – June.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 1998 and approximately 5.3 miles north of the Project and is presumed extant (EONDX 58420).
Eryngium spinosepalum spiny-sepaled button-celery	-/- 1B.2/-	Annual or perennial herb; blooms April-June; occurs in vernal pools and moist areas in valley and foothill	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 1992

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		grasslands; elevation ~260-3200 feet; threatened by development, grazing, road maintenance, hydrological alterations, and agriculture; documented primarily in foothills of Sierra Nevada with scattered occurrences on Central Valley floor and western foothills and lower mountains.		and approximately 4.5 miles north of the Project and is presumed extant (EONDX 81502).
Euphorbia hooveri Hoover's spurge	FT/- 1B.2/-	Annual herb; blooms July to September, sometimes into October; occurs in vernal pool habitats from ~80 feet to 820 feet; several scattered occurrences throughout the Central Valley, mostly on the valley floor or surrounding foothills; threatened by grazing, agriculture, and non-native plants.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 2011 and approximately 4.3 miles north of the Project and is presumed extant (EONDX 2447).
Helianthus winteri Winter's sunflower	-/- 1B.2/-	Perennial shrub; blooms January to December; occurs in Cismontane woodlands, valley and foothill grasslands, and openings on relatively steep south facing slopes; threatened by grazing, agriculture, road maintenance, and habitat	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 2018 and approximately 7.7 miles northeast of the Project and is presumed extant (EONDX 110877).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		loss; ranges in elevation from 410 to 8415 feet.		
Imperata brevifolia California satintail	-/- 2B.1/-	Perennial herb; occurs in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, and riparian scrub in mesic or alkali soils; blooms September-May; elevation ~0-3,986 feet.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 1895 and approximately 1.6 miles southeast of the Project and is presumed extant (EONDX 69849).
Lathenia glabrata ssp. coulteri Coulter's goldfields	-/- 1B.1/-	Annual herb; occurs in coastal marshes and swamps, and playas and vernal pools in the interior of California; blooms Feb – June; ranges in elevation from 0 to 4,002 feet.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 2015 and approximately 7.8 miles northeast of the Project and is presumed extant (EONDX 114944).
Orcuttia inaequalis San Joaquin Valley Orcutt grass	FT/SE 1B.1/-	Annual herb; blooms April to September; occurs in vernal pools; elevation ~32-2,500 feet; threatened by agricultural, development, overgrazing, channelization, and non-native plants; documented primarily on eastern Central Valley floor and foothills from Visalia north.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 2017 and approximately 4.8 miles north of the Project and is presumed extant (EONDX 35397).
Pseudobahia perisonii San Joaquin adobe sunburst	FT/SE 1B.1/-	Annual herb; blooms March-April; occurs in cismontane woodland, valley and foothill grasslands, and usually adobe clay; elevation from	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		~295-2,625 feet; more than half of known occurrences are very small; seriously threatened by agriculture, grazing, development, non-native plants, road construction and maintenance, and flood control activities; possibly threatened by road maintenance.		within 10 miles of the Project.
Puccinellia simplex California alkali grass	-/- 1B.2/-	Annual herb found on alkaline soils, vernally mesic habitats, sinks, flats, and lake margins. Typically associated with chenopod scrub, meadows and seeps, valley and foothill grasslands, and vernal pools, at elevations under 3,050 feet. Blooms between March and May.	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 1936 and approximately 4.5 miles northeast of the Project and is presumed extant (EONDX 100166).
Sagittaria sanfordii Sanford's arrowhead	-/- 1B.2/-	Perennial rhizomatous herb (emergent); blooms May-October, sometimes into November; occurs in assorted shallow freshwater marshes and swamps, and slow-moving waterways, in sandy loam and clay soils; elevation ~0 to 2,130 feet; threatened by grazing, development, recreational activities, non-native plants, road	No	Habitat to support this species is absent from the Project site. Nearest occurrence is from 2018 and approximately 6.3 miles northeast of the Project and is presumed extant (EONDX 108242).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		widening, and channel alteration/maintenance; documented primarily throughout Central Valley on valley floor and surrounding foothills.		
Invertebrates				
Andrena macswaini An andrenid bee	-/- -/-	This bee species occurs in deep sandy soil. It is an oligolectic bee of morning-opening, yellow-flowered species of *Camissonia.* It is the only species in the subgenus *Diandrena* with aggregated nests associated with depressions.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Bombus crotchii Crotch bumble bee	-/SC -/-	This bee occurs in relatively warm and dry sites, including the inner Coast Range of California and the margins of the Mojave Desert. It can be found in open grassland and scrub habitats. Nesting occurs underground. This species is classified as a short-tongued species, whose food plants include *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia*.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1961 and approximately 1.5 miles southwest of the Project and is presumed extant (EONDX 98758).
Branchinecta lynchi vernal pool fairy shrimp	FT/- -/-	Occur a variety of vernal pool habitats that range from small, clear pools to	No	Habitat to support this species is absent from the Project site. Nearest

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		large, turbid and alkaline pools; more common in pools less than 0.05 acre, typically as part of larger vernal pool complexes; adults active from early December to early May; pools must hold water for at least 18 days, the		CNDDB occurrence is from 2008 and approximately 4.4 miles north of the Project and is presumed extant (EONDX 95408).
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT/- -/-	Closely associated with elderberry shrubs (*Sambucus* sp.) for food and reproduction; usually along rivers and streams; eggs laid on bark, and larvae hatch and burrow into the stems; adults each elderberry leaves and flowers; stem diameter must be minimum one inch; exit holes in stems are most common methods for identification; ranges from southern Shasta County to Fresno County.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Lepidurus packardi vernal pool tadpole shrimp	FE/- -/-	This species inhabits seasonal vernal pools and swales in the Sacramento Valley. Pools are often found in grass-bottomed swales of unplowed grasslands, and pools will be used even if highly turbid. May also be found	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 2002 and approximately 6.0 miles northeast of the Project and is presumed extant (EONDX 45197).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		in roadside ditches and ruts.		
Lytta hoppingi Hopping's blister beetle	-/- -/-	This beetle species occurs in the foothills of the southern end of the Central Valley; adults are often found on flowers.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from the 1900's and approximately 1.5 miles southeast of the Project and is presumed extant (EONDX 8142).
Talanites moodyae Moody's gnaphosid spider	-/- -/-	This arachnid species occurs in leaf litter, in moist coastal habitats and grasslands, generally in serpentine soils. It is a nocturnal hunter.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1991 and approximately 6.7 miles east of the Project and is presumed extant (EONDX 59170).
Fish				
Hypomesus transpacificus delta smelt	FT/SE -/-	Small fish endemic to the San Francisco Estuary and the larger Sacramento-San Joaquin Delta; moves between freshwater and low salinity water throughout year; most spawning happens in tidally influenced backwater sloughs and channel edgewaters; historical distribution did not extend beyond Mossdale on the San Joaquin River and	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		Sacramento on the Sacramento River.		
Amphibians				
Ambystoma californiense California tiger salamander	FT/ST -/WL	Occurs in ephemeral pools or ponds that mimic them, and that remain inundated for 12 weeks or more; can occupy artificial ponds (ranch stock ponds) if ponds are allowed to go dry in the summer; requires nearby upland habitat containing small mammal burrows or crevices that provide refugia; restricted to grasslands and low foothills; lives underground most of the year.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 2002 and approximately 4.3 miles northeast of the Project and is presumed extant (EONDX 7033).
Lithobates pipiens northern leopard frog	-/- -/SSC	Highly aquatic; occurs in quiet aquatic habitats with permanent or semi-permanent water; shoreline cover and/or emergent vegetation important; breeds in emergent wetlands; uncommon and localized in California; Found in Modoc County and possibly eastern Lassen County, and along the Colorado River and irrigated areas in Imperial, Tulare, and Kern Counties; may have been introduced in many areas;	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1961 and approximately 6.0 miles northeast of the Project and is presumed extant (EONDX 74694).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		elevation range from sea level to 7,000 feet.		
Rana draytonii California red-legged frog	FT/- -/SSC	Occurs primarily in and near ponds in forests, woodlands, grasslands, coastal scrub, and stream sides with plant cover; mostly in lower elevations; breeding habitat may be permanent or ephemeral; estivates in animal burrows or other moist refuges when ephemeral habitat is dry; endemic to California and northern Baja California; found throughout coastal California from Mendocino County south; inland distribution includes northern Sacramento Valley and foothills of Sierra Nevada south to Tulare County (possibly Kern County); elevation from sea level to 5,000 feet.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Spea hammondii western spadefoot	-/- -/SSC	Species relies on vernal pools for breeding where predators cannot become established; open areas with sand or gravelly soils in a variety of habitats: grasslands, coastal scrub, woodlands, chaparral, sandy washes, lowland	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 2004 and approximately 4.6 miles southwest of the Project and is presumed extant (EONDX 55262).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		river floodplains, alkali flats, foothills, and mountains; endemic to California and northern Baja California; distribution from Redding south throughout Central Valley and foothills, throughout South Coast Ranges into coastal southern California to Transverse mountains and Peninsular mountains; elevation from sea level to 4,500 feet.		
		Reptiles		
Anniella pulchra northern California legless lizard	-/- -/SSC	This species occurs in moist warm loose soils with vegetative cover. Is found in beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces. This species requires moisture in the soil.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1934 and approximately 1.6 miles southeast of the Project and is presumed extant (EONDX 107010).
Emys marmorata western pond turtle	-/- -/SSC	Highly aquatic and diurnally active; found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with vegetation and rocky/muddy bottoms; wide variety of habitats; need basking areas near water (logs, rocks,	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1879 and approximately 1.6 miles southeast of the Project and is presumed extant (EONDX 8143).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		vegetation mats, banks); may enter brackish water and even seawater; digs nest on land near water; range from north of San Francisco Bay area south, including Central Valley.		
Gambelia silus blunt-nosed leopard lizard	FE/SE -/FP	Occurs in semiarid habitats within the southern Central Valley and Cuyama Valley; habitats typically are flat and have large open areas with scattered shrubs for refuge; uses small mammal burrows for shelter; spends most of year underground, surfacing in spring/early summer to breed and eat; hatchlings surface in fall to eat; may interbreed with long-nosed leopard lizard in Cuyama Valley; threatened by habitat loss/fragmentation and drought; elevation from 100-2,400 feet.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Thamnophis gigas giant gartersnake	FT/ST -/-	Highly aquatic snake found in marshes and sloughs, drainage canals, and irrigation ditches; prefers vegetation close to water for basking; does not venture more than 200 feet from aquatic habitat; elevation from sea level to	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		400 feet; endemic to California; currently ranges from Glenn County to southern edge of San Francisco Bay Delta, and from Merced County to northern Fresno County.		
Birds				
Agelaius tricolor tricolored blackbird	-/ST -/SSC	Colonial breeder that prefers freshwater, emergent wetlands with tall, dense cattails or tules, but also thickets of willow, blackberry, wild rose, and tall herbs; breeding colonies are minimum ~50 pairs; forages in pastures, grain fields, and similar habitats near breeding areas.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Athene cunicularia burrowing owl	-/- -/SSC	Occupies variety of open, semi-arid to arid habitats throughout central and southern California, including desert regions; prefers open habitats with few shrubs or trees; most active around sunrise and sunset; utilizes burrows constructed by mammals year-round for shelter and nesting; well documented in urban areas where patches of undeveloped areas are present (e.g.,	Yes	The species could be a potential transient forager in the vicinity of the Project site. Nearest CNDDB occurrence is approximately 4.3 miles north of the Project and is presumed extant (EONDX 69904).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		canals, airports, drainage basins), and in areas of dense agricultural development where, particularly where canals provide burrow habitat; forages primarily for rodents and insects within several miles of burrow, usually in open grassy habitats if available; has been observed hunting bats and insects around parking lot lights; threats include development resulting in habitat loss/fragmentation.		
Baeolphus inornatus oak titmouse	-/- -/BCC	Common woodland parid that is mainly distributed from southwestern Oregon through California to northwestern Baja California; occurs in warm, open, dry oak or oak-pine woodlands; observed using scrub oaks or other brush.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Buteo swainsoni Swainson's hawk	-/ST -/BCC	Occurs in grassland, desert and agricultural landscapes in the Central Valley and Antelope Valley; hawks may be resident or migrant; breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; also observed breeding in large	Yes	There is suitable foraging habitat, and suitable nest trees that exist in the vicinity. Nearest CNDDB occurrence is approximately 5.0 miles southwest of the Project and presumed extant (EONDX 109959).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		eucalyptus trees along freeways and in trees over rural residences surrounded by agriculture; may nest on ground if no suitable trees are available; nests are platform of sticks, bark, and fresh leaves at or near top of trees; breeds from late March to late August; forages in grassland, open scrub, and grain fields, primarily for rodents.		
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE -/BCC	Nests in open riparian woodlands along broad lower flood bottoms of larger river systems; prefers willows, often mixed with cottonwood, with understory of blackberry, nettles or wild grape; nest most often placed in willows with cottonwoods used extensively for foraging; also occasionally nests in orchards adjacent to river bottoms; migratory.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1919 and approximately 1.5 miles southwest of the Project and is extirpated (EONDX 97213).
Dryobates nuttallii Nuttall's woodpecker	-/- -/BCC	Common resident in oak woodlands from around 900-5,500 feet in elevation; use wooded suburban areas and woodlands near streams; excavate nest	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrence for the species

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		holes in dead trunks or limbs of willows, cottonwoods, sycamores, oaks, or alders.		within 10-miles of the Project.
Geothlypis trichas sinuosa common yellowthroat	-/- -/SSC	Most widespread warblers; occupies a variety of thick to tangled vegetation habitats across North America; common in wet areas that are ideal for skulking and building hidden nests; can also be found in dry upland pine forests, palmetto thickets, drainage ditches, hedgerows, orchards, fields, burn-over oak forests, shrub-covered hillsides, rover edges, and disturbed sites.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Lanius ludovicianus loggerhead shrike	-/- -/SSC	Common resident in lowlands and foothills throughout California; prefers open grassland/pasture habitats with scattered trees, fence posts, utility lines, shrubs, and other perches; primarily consumes large insects but will predator other small animals; nests in densely-foliaged shrub or tree less than 50 feet above ground.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1992 and approximately 6.2 miles northwest of the Project and is presumed extant (EONDX 87281).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Melospiza melodia song sparrow	-/- -/SSC	A widely distributed songbird in North America; occurs in freshwater emergent marshes dominated by *Scirpus* and *Typha*, and riparian willow (*Salix*) and riparian habitat; nest in riparian forests of valley oak (*Quercus lobata*) and blackberry (*Rubus),* along vegetated canals and levees, and in valley oak restoration sites; primarily feed on insects and seeds; endemic to the Sacramento Valley .	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Numenius phaepus Whimbrel	-/- -/BCC	Winter visitor to coastal California and may migrate through interior California in the spring. During migration, will stopover and forage in meadows, fields, sandy beaches, estuaries, etc., typically roosting at night in shallow water. Overwintering habitat typically consists of tidal mudflats and more terrestrial habitats during high tide. Main foods are aquatic invertebrates, fish, some insects and berries.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Pipilo maculatus clementae	-/- -/BCC	Common residents in dry thickets, brushy tangles,	No	Habitat to support this species is absent from the

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
San Clemente spotted towhee		forest edges, old fields, shrubby backyards, chaparral coulees, and canyon bottoms; prefer areas with dense shrub cover and leaf litter to scavenge through; nest on either the ground or near it.		Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Selasphorus rufus rufous hummingbird	-/- -/BCC	This species migrates through California between its wintering grounds in Mexico and breeding grounds in the Pacific northwest. Found in a wide variety of habitats that provide nectar-producing flowers, including valley foothill woodlands, riparian, chaparral, and planted gardens.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Spinus lawrencei Lawrence's goldfinch	-/- -/BCC	Occurs in dry grassy slopes with weed patches, chaparral, and open woodlands; prefers to nest and forage in coastal scrub, pinyon pine- juniper woodlands, and streambed habitats; primarily feeds on plant seeds and only rarely eats insects.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Mammals				
Antrozous pallidus pallid bat	-/- -/SSC	Occurs throughout California in wide variety of habitats: grasslands, shrublands, woodlands,	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		forests up through mixed conifer; most common in open, dry habitats with rocky areas for roosting; yearlong resident; feeds mainly on insects and arachnids on the ground or by gleaning; day roosts in caves, crevices, mines, and occasionally hollow trees and buildings, including bridges; night roosts in more open sites; maternity colonies form early April with young flying by July or August; needs water; very sensitive to disturbance of roosting sites.		2004 and approximately 5.6 miles southeast of the Project and is presumed extant (EONDX 68476).
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE -/-	Occurs in alkali marshes and on plains. Use saltbrush scrub and sink scrub communities of scattered woody shrubs such as saltbush, iodine bush, and mesquite (Prosopis sp.) that are sparsely scattered over the terrain with scant ground cover of grasses and forbs. They require slightly elevated terrain, with fine–textured, soft friable and alkaline soils where they can build burrows above the winter and spring	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		floods. Dig burrows in elevated soil mounds at bases of shrubs, canal embankments, road berms, or railroad beds. Unable to live on cultivated land.		
Eumops perotis californicus western mastiff bat	-/- -/SSC	Occurs in open, semi-arid to arid habitats throughout southeastern San Joaquin Valley and Coast Ranges from Monterey County southward; also in urban areas; feeds on insects captured in flight; roosts in cliff faces, high buildings, trees, and tunnels; nursery roosts most often in tight rock crevices or crevices in buildings; maternity season begins in March with young flying on their own by September.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 2002 and approximately 5.0 miles south of the Project and is presumed extant (EONDX 61287).
Taxidea taxus American badger	-/- -/SSC	Occurs mostly in open, drier stages of shrub, forest, and herbaceous habitats, with friable soils; feeds mostly on fossorial rodents; digs burrows for cover and reproduction; can dig new den each night; litters born mostly in March and April; somewhat tolerant of human activities, but avoids	Yes	There is potential denning and foraging habitat on the Project site. Nearest CNDDB occurrence is from 1994 and approximately 7.5 miles southeast of the Project and is presumed extant (EONDX 56600).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		cultivated agricultural habitats.		
Vulpes macrotis mutica San Joaquin kit fox	FE/ST -/-	Endemic to the Central Valley; found primarily in San Joaquin Valley, Carrizo Plain, Salinas Valley, Cuyama Valley, and other small valleys in western foothills; occurs in arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils; highly adaptable and documented in urban developed areas; uses burrows year-round for shelter, escape from predators, and rearing young; will use man-made structures, such as pipes, for denning; feeds primarily on small mammals, but will also consume birds, reptiles, insects, and scavenge for human food; intensively-maintained agricultural areas avoided; threatened by habitat loss and fragmentation, vehicle strikes, and disease; current mange outbreak in urban population in Bakersfield and in nearby natural areas.	Yes	The species could be a potential transient forager in the vicinity of the Project site. Nearest CNDDB occurrence is from 1975 and approximately 4.0 miles west of the Project and is presumed extant (EONDX 67936). Recent CNDDB occurrence is from 2003 approximately 4.5 miles northwest of the Project and is presumed extant (EONDX 55307).

CRPR (California Rare Plant Rank):

- 1A Presumed Extinct in California
- 1B Rare, Threatened, or Endangered in California and elsewhere
- 2A Plants presumed extirpated in California, but more common elsewhere
- 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension:

- .1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Fairly endangered in California (20-80% occurrences threatened)
- .3 Not very endangered in California (<20% of occurrences threatened)

BCC	USFWS Birds of Conservation Concern
FE	Federally Endangered
FT	Federally Threatened
FC	Federal Candidate Species
FS	Federally Sensitive
SE	State Endangered
ST	State Threatened
SC	State Candidate
SS	State Sensitive
SSC	State Species of Special Concern
SFP	State Fully Protected
SR	State Rare
WL	Watch List

APPENDIX E

U.S. FISH AND WILDLIFE SERVICE STANDARDIZED RECOMMENDATIONS FOR PROJECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE (USFWS 2011)

U.S. FISH AND WILDLIFE SERVICE
STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX
PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

TECHNICAL MEMORANDUM

Date: June 14, 2020

Project: Cultural resources records search for the Pratt Family Ranch Residential Development Project, Visalia, Tulare County, CA

To: Jaymie Brauer

From: Robert Parr, MS, RPA, Senior Archaeologist

Subject: Cultural Resources Records Search Results (RS #20-211)

Background

This Technical Memo is to provide a cultural record search and to determine whether the proposed project would impact cultural resources.

Project Description

The Project will be built on five contiguous parcels which consist of: Assessor Parcel Numbers (APN) 078-010-025, 078-010-028, 078-010-029, 078-110-022, and 078-110-023. The Project consists of two proposed land use designation (excluding Open Space) that require differing lot types in order to meet their respective densities. The project will consist of 543 units on individual lots. Entitlements included are General Plan Amendment, Change of Zone, Annexation, Specific Plan, and Tentative Subdivision Map.

Project Location

The proposed Project is located on the northern edge of the City of Visalia, Tulare County California, on Pratt Road and Riverway Drive (Figures 1 and 2). It is within the Visalia California U.S. Geological Survey (USGS) 7.5-minute quadrangle, and within portions of Sections 13 and 18, T.18S, R.24E and R.25E, Mount Diablo Base and Meridian. The St. Johns River runs along the northern property boundary. There is residential development to the south and undeveloped agricultural lands to the east and west of the site.

Results

A cultural resources records search (RS #20-211) was conducted at the Southern San Joaquin Valley Information Center, CSU Bakersfield for the Pratt Family Ranch Residential Development Project. A Sacred Lands File Search was also requested from the Native American

Heritage Commission. On May 26, 2020, the NAHC response letter indicated negative results. This letter is included with this memo.

The records search covered an area within one-half mile of the project and included a review of the *National Register of Historic Places*, *California Points of Historical Interest*, *California Registry of Historic Resources*, *California Historical Landmarks*, *California State Historic Resources Inventory*, and a review of cultural resource reports on file.

The records search indicated that the subject property had never been surveyed for cultural resources. No cultural resources have been recorded on the property and it is not known if any exist there. One cultural resource survey has been conducted within a half mile of the project (Nuss and Beazley 2016). No cultural resources have been recorded within a half mile radius of the project.

Visalia General Plan certified EIR, Section 3.12 *Cultural Resources*, notes several recognized historical resources in the City (City of Visalia, 2014). However, these sites are not in close proximity to the Project.

Conclusions

Based on the results of cultural records search findings and the lack of historical or archaeological resources previously identified within a half mile radius of the proposed Project, the potential to encounter subsurface cultural resources is minimal. Additionally, the Project construction would be conducted within the partially developed and previously disturbed parcel. The potential to uncover subsurface historical or archaeological deposits is would be considered unlikely.

However, there is still a possibility that historical or archaeological materials may be exposed during construction. Grading and trenching, as well as other ground-disturbing actions have the potential to damage or destroy these previously unidentified and potentially significant cultural resources within the project area, including historical or archaeological resources. Disturbance of any deposits that have the potential to provide significant cultural data would be considered a significant impact. To reduce the potential impacts of the Project on cultural resources, the following measures are recommended. With implementation of CUL-1 and CUL-2, the Project would have a less than significant impact.

CUL-1: If prehistoric or historic-era cultural materials are encountered during construction activities, all work in the immediate vicinity of the find shall halt until a qualified archaeologist can evaluate the find and make recommendations. Cultural resource materials may include prehistoric resources such as flaked and ground stone tools and debris, shell, bone, ceramics, and

fire-affected rock as well as historic resources such as glass, metal, wood, brick, or structural remnants. If the qualified archaeologist determines that the discovery represents a potentially significant cultural resource, additional investigations may be required to mitigate adverse impacts from Project implementation. These additional studies may include avoidance, testing, and evaluation or data recovery excavation. Implementation of the mitigation measure below would ensure that the proposed Project would not cause a substantial adverse change in the significance of a historical resource.

CUL-2: If human remains are discovered during construction or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987), shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the county coroner.

Robert E. Parr, MS, RPA
Senior Archaeologist

References
(Note: Alpha-numeric designation in parentheses following the citation refer to IC report reference number.)

Nuss, Andrew and Matthew Beazley
2016 Archaeological Assessment TCNS ID #140292, American Towers, LLC, Visalia, Tulare County, California. (TU-01778)

Attachment A- Figures

Attachment B- Native American Heritage Commission Sacred Lands File Response

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ATTACHMENT A
PROJECT FIGURES

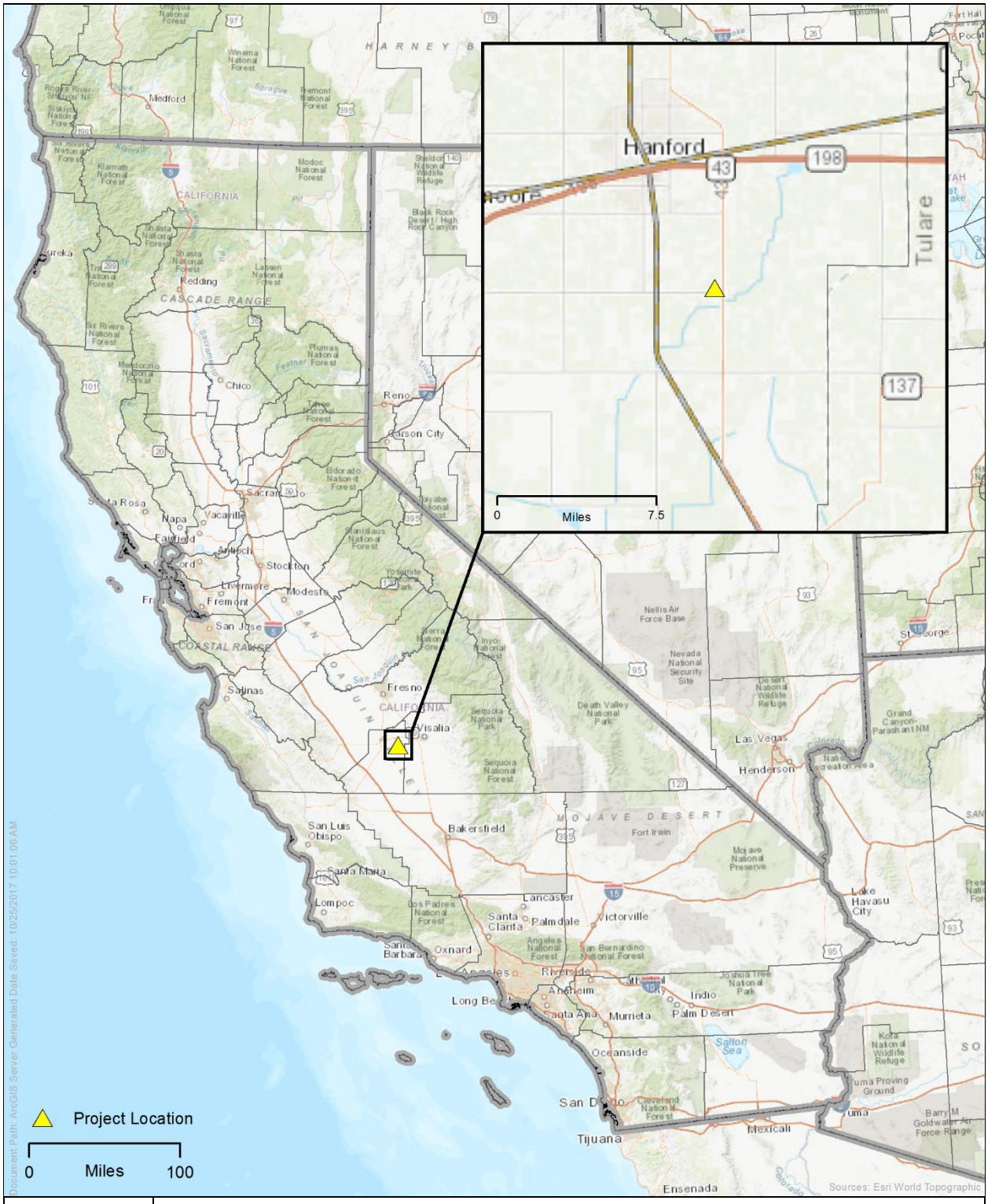

Figure - 1
Regional Location

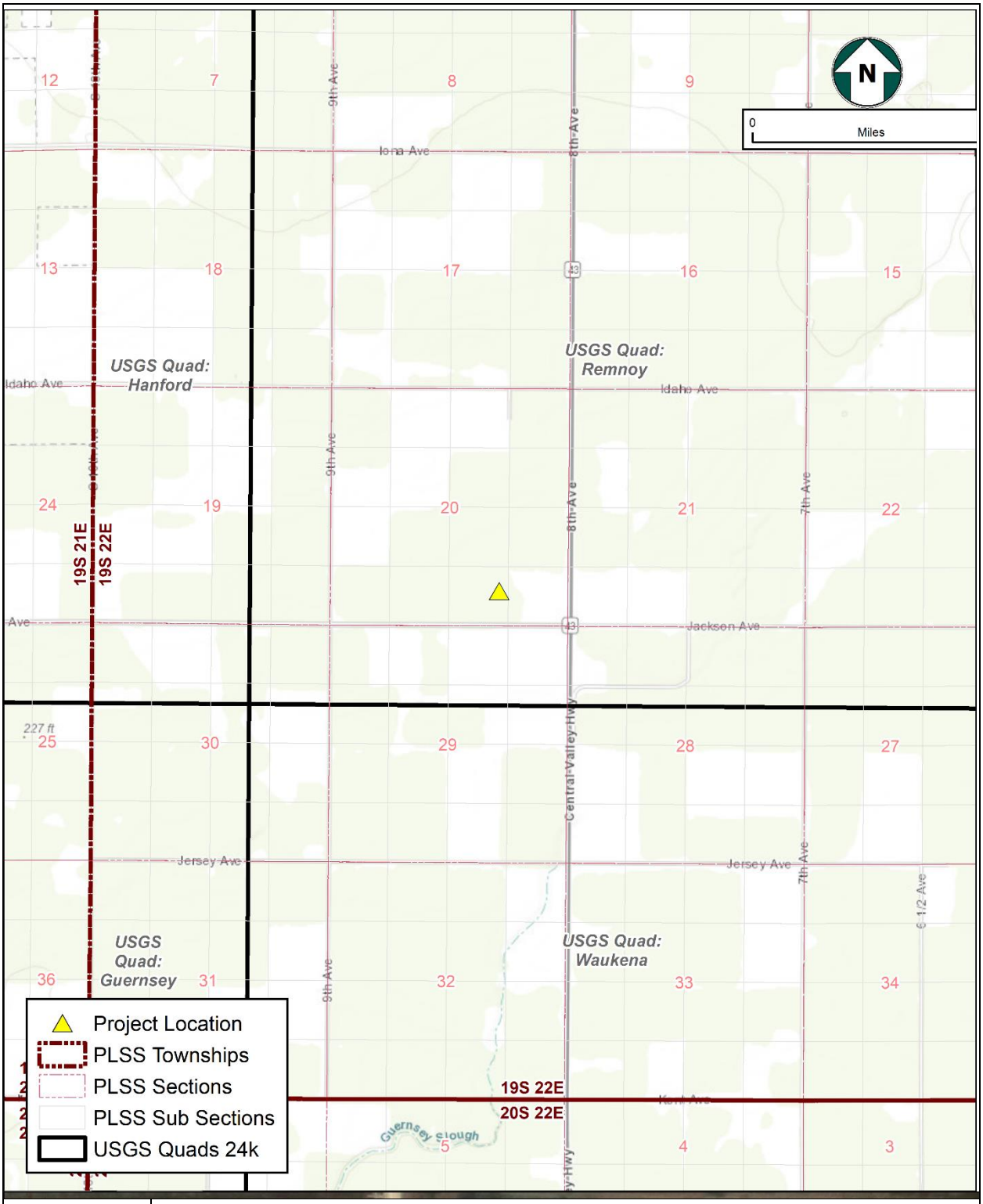

Figure - 3
PLSS/USGS Quad

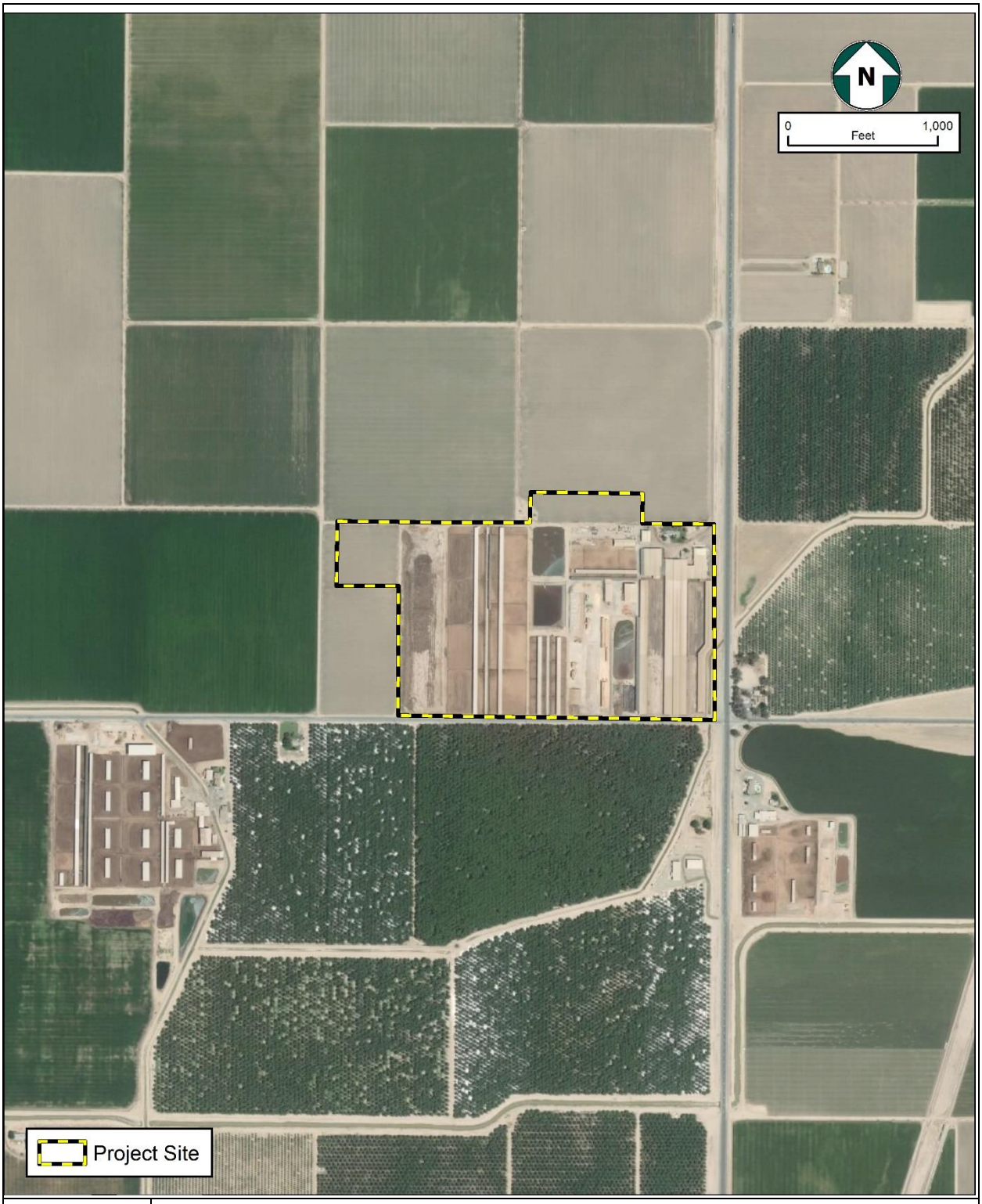

Figure - 2
Project Area

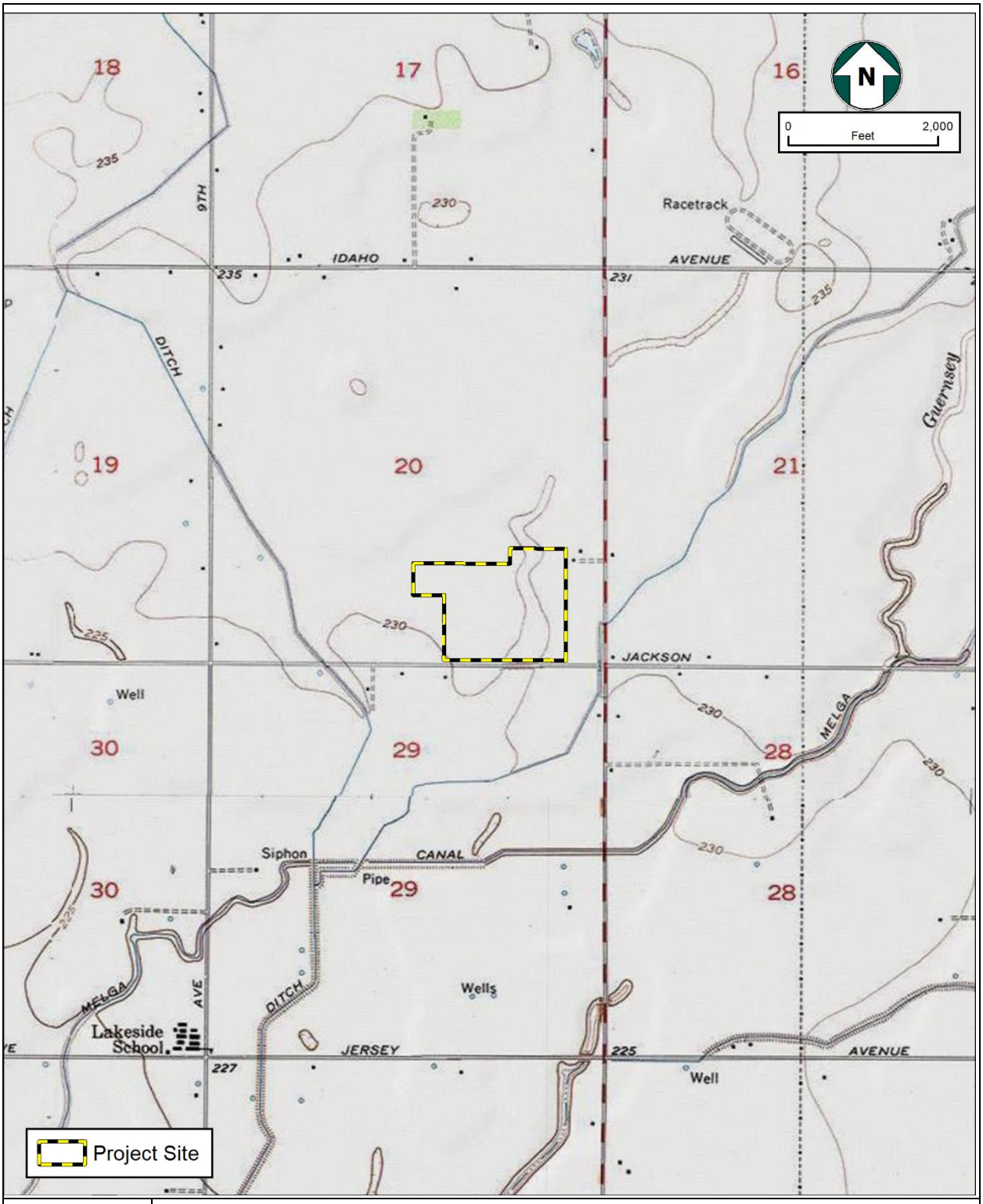

Figure - 4
Topo

ATTACHMENT B
Native American Heritage Commission
Sacred Lands File Response

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
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PARLIAMENTARIAN
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NAHC HEADQUARTERS
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West Sacramento,
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(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

May 26, 2020

Jaymie Brauer

Quad Knopf, Inc.

Via Email to: Jaymie.Brauer@qkinc.com

Re: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, Pratt Valley Ranch, Tulare County

Dear Ms. Brauer:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties or projects.

Government Codes §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

Public Resources Codes §21080.3.1 and §21080.3.2 requires public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to tribal cultural resources as defined, for California Environmental Quality Act (CEQA) projects.

The law does not preclude local governments and agencies from initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

Best practice for the AB52 process and in accordance with Public Resources Code §21080.3.1(d), is to do the following:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The NAHC also recommends, but does not require that lead agencies include in their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential affect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

    - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE, such as known archaeological sites;
    - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
    - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and
    - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The result of the Sacred Lands File (SFL) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez

Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
5/26/2020

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella , CA 93240
(661) 340-0032 Cell

Kawaiisu
Tubatulabal

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010
Lake Isabella , CA 93240
bbutterbredt@gmail.com
(760) 378-2915 Cell

Tubatulabal
Kawaiisu

Kern Valley Indian Community
Brandy Kendricks
30741 Foxridge Court
Tehachapi , CA 93561
krazykendricks@hotmail.com
(661) 821-1733

Kawaiisu
Tubatulabal

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8
Lemoore , CA 93245
(559) 924-1278

Tache
Tachi
Yokut

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Tribal Chairperson
P.O. Box 226
Lake Isabella , CA 93240
(760) 379-4590

Tubatulabal

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville , CA 93258
neil.peyron@tulerivertribe-nsn.gov
(559) 781-4271

Yokuts

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas , CA 93906
kwood8934@aol.com
(831) 443-9702

Foothill Yokuts
Mono
Wuksache

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.
Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.
This list is applicable only for consultation with Native American tribes under Government Code Sections 65352.3, 65362.4 et seq. and Public Resources Code Sections 21080.3.1 for the proposed: Pratt Valley Ranch, Tulare County.

Pratt Family Ranch

Transportation Impact Study
July 15, 2022

Prepared by:
VRPA Technologies, Inc.
4630 W. Jennifer, Suite 105
Fresno, CA 93722

Pratt Family Ranch
Transportation Impact Study

Study Team

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- ✓ Erik Ruehr, Dir. of Traffic Engineering, VRPA Technologies, Inc., eruehr@vrpatechnologies.com, (858) 566-1766
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- ✓ (858) 566-1766
- ✓ Nisha Pathak, Transportation Engineer, VRPA Technologies, Inc., jellard@vrpatechnologies.com, (559) 271-1200

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Executive Summary

This Transportation Impact Study (TIS) has been prepared for the purpose of analyzing traffic conditions related to the Pratt Family Ranch Development (Project). The Project site is generally located at the northwest quadrant of the Riverway Drive and Mooney Boulevard intersection. Regional access to the site is provided by State Route (SR) 198 and SR 63. The Project seeks to develop approximately 555 single family dwelling units.

Vehicular access to the site would be provided by Pratt Road, Mooney Boulevard, and Avenue 320. The extension of these roadways would be constructed to City standards and would be dedicated as public right of way. The proposed project would also construct a roundabout at the Riverway Drive and Mooney Boulevard intersection, which would also be dedicated as public right of way and would be constructed to Caltrans or City-approved standards.

STUDY AREA

The study intersections included in this TIS are listed below. The study intersections were developed in consultation with City of Visalia staff and are located within 1-mile of the Project site based on analysis requirements found in the City of Visalia "Procedures For Traffic Impact Analysis (TIA)", dated March 2021.

The intersections of Riverway Drive at Dinuba Boulevard and Riverway Drive at Giddings Street were not included in the analysis since Riverway Drive is transitioning to no longer have thru access to Dinuba Boulevard. Riverway Drive will terminate and become a cul-de-sac approximately 900 feet east of Giddings Street. The intersection of Shannon Parkway at Dinuba Boulevard was not included in the analysis given the minimal amount of Project traffic that would impact the intersection.

Intersections

- ✓ Avenue 320 / Demaree Street
- ✓ Pratt Road / Demaree Street
- ✓ Riggin Avenue-Avenue 312 / Demaree Street
- ✓ Riggin Avenue / County Center Drive
- ✓ Pratt Road / Mooney Boulevard
- ✓ Riverway Drive / Mooney Boulevard
- ✓ Shannon Parkway / Mooney Boulevard
- ✓ Riggin Avenue / Mooney Boulevard
- ✓ Shannon Parkway / Giddings Street
- ✓ Riggin Avenue / Giddings Street
- ✓ Riggin Avenue / Dinuba Boulevard-State Route (SR) 63
- ✓ Shannon Parkway / Demaree Avenue
- ✓ Riverway Drive/Demaree Avenue

- ✓ County Center Drive/Pratt Road
- ✓ County Center Drive/Shannon Parkway
- ✓ Ferguson Street / Mooney Boulevard
- ✓ Avenue 320 / Mooney Boulevard
- ✓ County Center Drive/Avenue 320

Study Scenarios

The TIS completed for the Project includes level of service (LOS) analysis for the following traffic scenarios.

- ✓ Existing Conditions
- ✓ Opening Year Without Project
- ✓ Opening Year Plus Project
- ✓ 5-Year Horizon Without Project
- ✓ 5-Year Horizon Plus Project
- ✓ 10-Year Horizon Without Project
- ✓ 10-Year Horizon Plus Project
- ✓ 20-Year Horizon Without Project (Riggin Avenue / Dinuba Boulevard Only)
- ✓ 20-Year Horizon Plus Project (Riggin Avenue / Dinuba Boulevard Only)

IMPACTS

Intersections

Table E-1 shows intersections that are expected to fall short of desirable operating conditions for various scenarios. Potential mitigation measures are discussed below.

Table E-1
Intersection Operations

INTERSECTION	TARGET LOS	PEAK HOUR	OPENING YEAR WITHOUT PROJECT		OPENING YEAR PLUS PROJECT		5-YEAR HORIZON WITHOUT PROJECT		5-YEAR HORIZON PLUS PROJECT		10-YEAR HORIZON WITHOUT PROJECT		10-YEAR HORIZON PLUS PROJECT		20-YEAR HORIZON WITHOUT PROJECT		20-YEAR HORIZON PLUS PROJECT	
			DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
1. Avenue 320 / Demaree Street	D	AM	11.4	B	11.5	B	11.9	B	12.0	B	17.0	C	17.0	C				
		PM	13.7	B	13.9	B	15.0	C	15.2	C	23.1	C	24.7	C				
2. Avenue 320 / County Center Street (Future)	D	AM									8.6	A	8.8	A				
		PM									8.6	A	8.7	A				
3. Avenue 320 / Mooney Boulevard (Future)	D	AM									0.0	A	0.0	A				
		PM									0.0	A	0.0	A				
4. Pratt Road / Demaree Street	D	AM	14.8	B	15.0	C	16.1	C	16.4	C	17.2	C	17.3	C				
		PM	14.9	B	15.4	C	16.1	C	16.7	C	17.1	C	17.3	C				
5. Pratt Road / County Center Street	D	AM	9.4	A	11.1	B	9.5	A	11.2	B	10.7	B	12.8	B				
		PM	9.9	A	11.3	B	10.0	B	11.5	B	11.1	B	13.7	B				
6. Pratt Road / Mooney Boulevard	D	AM	0.0	A	10.3	B	0.0	A	10.4	B	0.0	A	10.0	B				
		PM	0.0	A	11.0	B	0.0	A	11.2	B	0.0	A	10.7	B				
7. Riverway Drive / Demaree Street	D	AM	11.1	B	11.2	B	11.5	B	11.6	B	11.6	B	11.7	B				
		PM	11.0	B	11.4	B	11.5	B	11.9	B	11.6	B	12.0	B				
8. Riverway Drive / Mooney Boulevard	D	AM	7.5	A	4.2	A	7.5	A	4.3	A	7.5	A	4.2	A				
		PM	7.6	A	4.5	A	7.7	A	4.5	A	7.8	A	4.6	A				
9. Riggin Avenue / Dinuba Boulevard (SR-63)	-- [1]	AM	28.2	C	28.8	C	29.4	C	30.0	C	30.8	C	31.5	C	35.0	D	35.6	D
		PM	45.3	D	49.1	D	49.8	D	54.2	D	**57.5**	**E**	**61.2**	**E**	**90.5**	**F**	**93.9**	**F**
10. Shannon Parkway / Demaree Street	D	AM	17.9	C	17.9	C	20.8	C	20.8	C	24.1	C	24.1	C				
		PM	17.0	C	17.0	C	19.3	C	19.3	C	19.7	C	19.7	C				
11. Shannon Parkway / County Center Street	D	AM	5.2	A	5.7	A	5.5	A	6.0	A	4.8	A	5.1	A				
		PM	3.5	A	4.0	A	3.7	A	4.1	A	3.8	A	4.2	A				
12. Shannon Parkway / Mooney Boulevard	D	AM	3.6	A	4.7	A	3.7	A	4.8	A	3.7	A	4.9	A				
		PM	4.3	A	6.2	A	4.5	A	6.5	A	4.5	A	6.3	A				
13. Shannon Parkway / Giddings Street	D	AM	6.9	A	6.9	A	7.6	A	7.7	A	6.7	A	6.8	A				
		PM	4.2	A	4.3	A	4.4	A	4.4	A	4.4	A	4.4	A				
14. Riggin Avenue / Demaree Street	D	AM	35.1	D	37.1	D	36.7	D	38.7	D	37.2	D	39.3	D				
		PM	37.7	D	42.0	D	40.8	D	46.1	D	43.9	D	51.1	D				
15. Riggin Avenue / County Center Street	D	AM	**75.0**	**F ++**	**99.8**	**F ++**	**99.0**	**F ++**	**130.0**	**F ++**	**135.9**	**F ++**	**168.7**	**F ++**				
		PM	**113.8**	**F ++**	**152.7**	**F ++**	**148.0**	**F ++**	**186.9**	**F ++**	**169.2**	**F ++**	**208.9**	**F ++**				
16. Riggin Avenue / Mooney Boulevard	D	AM	33.0	C	35.8	D	33.3	C	36.5	D	33.8	C	37.1	D				
		PM	41.5	D	46.6	D	43.6	D	48.9	D	51.2	D	55.0	D				
17. Riggin Avenue / Giddings Street	D	AM	**264.5**	**F ++**	**312.0**	**F ++**	**309.9**	**F ++**	**358.7**	**F ++**	**322.5**	**F ++**	**370.0**	**F ++**				
		PM	**193.0**	**F ++**	**240.6**	**F ++**	**232.3**	**F ++**	**281.6**	**F ++**	**277.5**	**F ++**	**328.9**	**F ++**				
18. Ferguson Avenue / Mooney Boulevard	D	AM	14.1	B	16.4	C	15.4	C	18.4	C	15.8	C	18.7	C				
		PM	**86.3**	**F ++**	**135.1**	**F ++**	**114.3**	**F ++**	**171.4**	**F ++**	**153.8**	**F ++**	**206.5**	**F ++**				

DELAY is measured in seconds per vehicle

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

For signalized, roundabout, and all-way stop intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

1 - With the changes brought about by SB 743, Caltrans no longer uses level of service to determine the need for transportation improvements. Instead, the focus is on providing adequate facilities for pedestrians, bicycles, and transit as well as safety considerations for all transportation modes. Guidance is provided in the Transportation Impact Study Guide dated May 20, 2020 and the Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance dated July 2020. This guidance was used in determining the need for roadway improvements on Caltrans facilities.

++ Meets peak hour signal warrants.

MITIGATION

This section describes potential improvements to mitigate the traffic impacts of the Project. The potentially significant impacts resulting from the Project relate to the generation of unacceptable LOS at various intersections in the long term. Considering the criteria provided in Section 1.3 and the results presented above, the following improvements could be considered to alleviate project-specific impacts.

- ✓ Riggin Avenue at Dinuba Boulevard (SR-63)
  Recommended improvements to achieve acceptable levels of service:
  - 10-Year Horizon and 20-Year Horizon scenarios:
    - Widen the eastbound approach to 2 left turn lanes, 2 through lanes, and 1 right turn lane (adding 1 left turn lane)

  Although the improvements identified appear to be needed based on the traffic analysis, this intersection is in the jurisdiction of Caltrans and Caltrans has no plans to improve the intersection. Payment of City transportation impact fees is considered to satisfy this mitigation measure directly or indirectly by contributing to overall transportation funding in the City of Visalia.

- ✓ Riggin Avenue at County Center Street
  Recommended improvements to achieve acceptable levels of service:
  - Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios:
    - Install Traffic Signal

  The improvements identified above for the Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios are sufficient to meet the City of Visalia's acceptable LOS standard of 'D'. It should be noted that a traffic signal was recently installed at the intersection of Riggin Avenue and County Center Street and that satisfies this mitigation measure.

- ✓ Riggin Avenue at Giddings Street
  Recommended improvements to achieve acceptable levels of service:
  - Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios:
    - Install Traffic Signal

  The improvements identified above for the Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios are sufficient to meet the City of Visalia's acceptable LOS standard of 'D'. It should be noted that a traffic signal was recently installed at the intersection of Riggin Avenue and Giddings Street and that satisfies this mitigation measure.

- ✓ Ferguson Avenue at Mooney Boulevard
  Recommended improvements to achieve acceptable levels of service:
  - Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios:
    - Install Traffic Signal

Payment of City transportation impact fees is considered to satisfy this mitigation measure directly or indirectly by contributing to overall transportation funding in the City of Visalia.

✓ Riverway Drive at Mooney Boulevard

Proposed Project Improvements:

- Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios:
  - Install Roundabout
  - Northbound approach: 1 Through/Right (a separate right turn lane could be added if needed to support the transition to the cross-section of Mooney Boulevard to the south)
  - Southbound approach: 1 Through/Right
  - Westbound approach: 1 Through/Right

The proposed design concept has been analyzed in this traffic analysis and no level of service deficiencies are indicated in any of the future scenarios. A design concept for the Mooney Boulevard/Riverway Drive roundabout will need to include a transition to the cross-section of Mooney Boulevard to the south. Roadway striping changes and/or geometric design changes will be needed in the area between Glendale Avenue and Riverway Drive. It is recommended that later stages of the project approval process include the preparation of a design for the roundabout that is acceptable to the City of Visalia.

Post-Mitigation Level of Service

The level of service resulting from the potential improvements identified above is shown in Table E-2 for study area intersections.

Table E-2
Intersection Operations with Mitigation

INTERSECTION	TARGET LOS	PEAK HOUR	OPENING YEAR WITHOUT PROJECT		OPENING YEAR PLUS PROJECT		5-YEAR HORIZON WITHOUT PROJECT		5-YEAR HORIZON PLUS PROJECT		10-YEAR HORIZON WITHOUT PROJECT		10-YEAR HORIZON PLUS PROJECT		20-YEAR HORIZON WITHOUT PROJECT		20-YEAR HORIZON PLUS PROJECT	
			DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
9. Riggin Avenue / Dinuba Boulevard (SR-63)	-- [1]	AM									29.4	C	30.6	C	32.5	C	33.2	C
		PM									38.6	D	40.3	D	51.3	D	53.3	D
15. Riggin Avenue / County Center Street	D	AM	16.8	B	17.0	B	17.8	B	18.1	B	18.9	B	20.1	C				
		PM	18.1	B	17.9	B	17.8	B	20.0	B	19.0	B	21.1	C				
17. Riggin Avenue / Giddings Street	D	AM	24.3	C	28.5	C	32.1	C	38.3	D	33.9	C	41.0	D				
		PM	17.3	B	19.4	B	19.3	B	22.7	C	22.4	C	27.1	C				
18. Ferguson Avenue / Mooney Boulevard	D	AM	14.3	B	14.5	B	14.8	B	15.1	B	15.0	B	15.3	B				
		PM	19.8	B	21.6	C	21.6	C	24.7	C	24.6	C	29.3	C				

DELAY is measured in seconds per vehicle

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

For signalized, roundabout, and all-way stop intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

1 - With the changes brought about by SB 743, Caltrans no longer uses level of service to determine the need for transportation improvements. Instead, the focus is on providing adequate facilities for pedestrians, bicycles, and transit as well as safety considerations for all transportation modes. Guidance is provided in the Transportation Impact Study Guide dated May 20, 2020 and the Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance dated July 2020. This guidance was used in determining the need for roadway improvements on Caltrans facilities.

Project Percentage of Future Traffic

This section of the report provides analysis of the percentage of future traffic generated by the project at key study area locations. This information can be used in evaluating the need for improvements to be provided by the Project. The formulas used to calculate the Project percentage of future traffic to City of Visalia/Caltrans facilities is as follows:

Project Percentage of Future Traffic = (Project Trips)/(20-Year Horizon Plus Project Traffic – Existing Traffic)

Table E-3
20-Year Horizon Project Percentage of Future Traffic

INTERSECTION	PEAK HOUR	EXISTING	PROJECT TRIPS	10-YEAR HORIZON PLUS PROJECT	FAIR SHARE PERCENTAGE
Riggin Avenue / Dinuba Boulevard (SR-63) [1]	AM	1,813	90	3,716	4.7%
	PM	2,314	121	4,896	4.7%
Riggin Avenue / County Center Street	AM	1,462	160	2,423	16.6%
	PM	1,429	214	2,571	18.7%
Riggin Avenue / Giddings Street	AM	1,283	99	2,340	9.4%
	PM	1,122	132	2,422	10.2%
Ferguson Avenue / Mooney Boulevard	AM	723	119	1,269	21.8%
	PM	1,505	160	2,338	19.2%

1 - Fair-Share based on 20-Year Horizon

1.0 Introduction

1.1 Description of the Region/Project

This Transportation Impact Study (TIS) has been prepared for the purpose of analyzing traffic conditions related to the Pratt Family Ranch development (Project). The Project site is generally located at the northwest quadrant of the Riverway Drive and Mooney Boulevard intersection. Regional access to the site is provided by State Route (SR) 198 and SR 63. The Project seeks to develop approximately 555 single family dwelling units. Figure 1-1 shows the site's regional context. Figure 1-2 shows the Project location within the City of Visalia. Figure 1-3 shows the tentative layout of the proposed Project.

1.1.1 *Project Access*

Vehicular access to the site would be provided by Pratt Road, Mooney Boulevard, and Avenue 320. The extension of these roadways would be constructed to City standards and would be dedicated as public right of way. The proposed project would also construct a roundabout at the Riverway Drive and Mooney Boulevard intersection, which would also be dedicated as public right of way and would be constructed to Caltrans or City-approved standards.

1.1.2 *Study Area*

The study intersections included in this TIS are listed below and shown in Figure 1-2. The study intersections were developed in consultation with City of Visalia staff. The intersections of Riverway Drive at Dinuba Boulevard and Riverway Drive at Giddings Street were not included in the analysis since Riverway Drive is transitioning to no longer have thru access to Dinuba Boulevard. Riverway Drive will terminate and become a cul-de-sac approximately 900 feet east of Giddings Street. The intersection of Shannon Parkway at Dinuba Boulevard was not included in the analysis given the minimal amount of Project traffic that would impact the intersection.

Intersections

- ✓ Avenue 320 / Demaree Street
- ✓ Pratt Road / Demaree Street
- ✓ Riggin Avenue-Avenue 312 / Demaree Street
- ✓ Riggin Avenue / County Center Drive
- ✓ Pratt Road / Mooney Boulevard
- ✓ Riverway Drive / Mooney Boulevard
- ✓ Shannon Parkway / Mooney Boulevard
- ✓ Riggin Avenue / Mooney Boulevard
- ✓ Shannon Parkway / Giddings Street
- ✓ Riggin Avenue / Giddings Street
- ✓ Riggin Avenue / Dinuba Boulevard-State Route (SR) 63
- ✓ Shannon Parkway / Demaree Avenue
- ✓ Riverway Drive/Demaree Avenue

- ✓ County Center Drive/Pratt Road
- ✓ County Center Drive/Shannon Parkway
- ✓ Ferguson Street / Mooney Boulevard
- ✓ Avenue 320 / Mooney Boulevard
- ✓ County Center Drive/Avenue 320

1.1.3 *Study Scenarios*

The TIS completed for the Project includes level of service (LOS) analysis for the following traffic scenarios.

- ✓ Existing Conditions
- ✓ Opening Year Without Project
- ✓ Opening Year Plus Project
- ✓ 5-Year Horizon Without Project
- ✓ 5-Year Horizon Plus Project
- ✓ 10-Year Horizon Without Project
- ✓ 10-Year Horizon Plus Project
- ✓ 20-Year Horizon Without Project (Riggin Avenue / Dinuba Boulevard Only)
- ✓ 20-Year Horizon Plus Project (Riggin Avenue / Dinuba Boulevard Only)

1.2 Methodology

When preparing a TIS, guidelines set by affected agencies are followed. In analyzing street and intersection capacities the Level of Service (LOS) methodologies are applied. LOS standards are applied by transportation agencies to quantitatively assess a street and highway system's performance. In addition, safety concerns are analyzed to determine the need for appropriate mitigation resulting from increased traffic near sensitive uses, the need for dedicated ingress and egress access lanes to the project, and other evaluations such as the need for signalized intersections or other improvements. Guidelines incorporated in the Highway Capacity Manual (HCM), 6th Edition, published in 2016 were also used in the development of this TIS.

1.2.1 *Intersection Analysis*

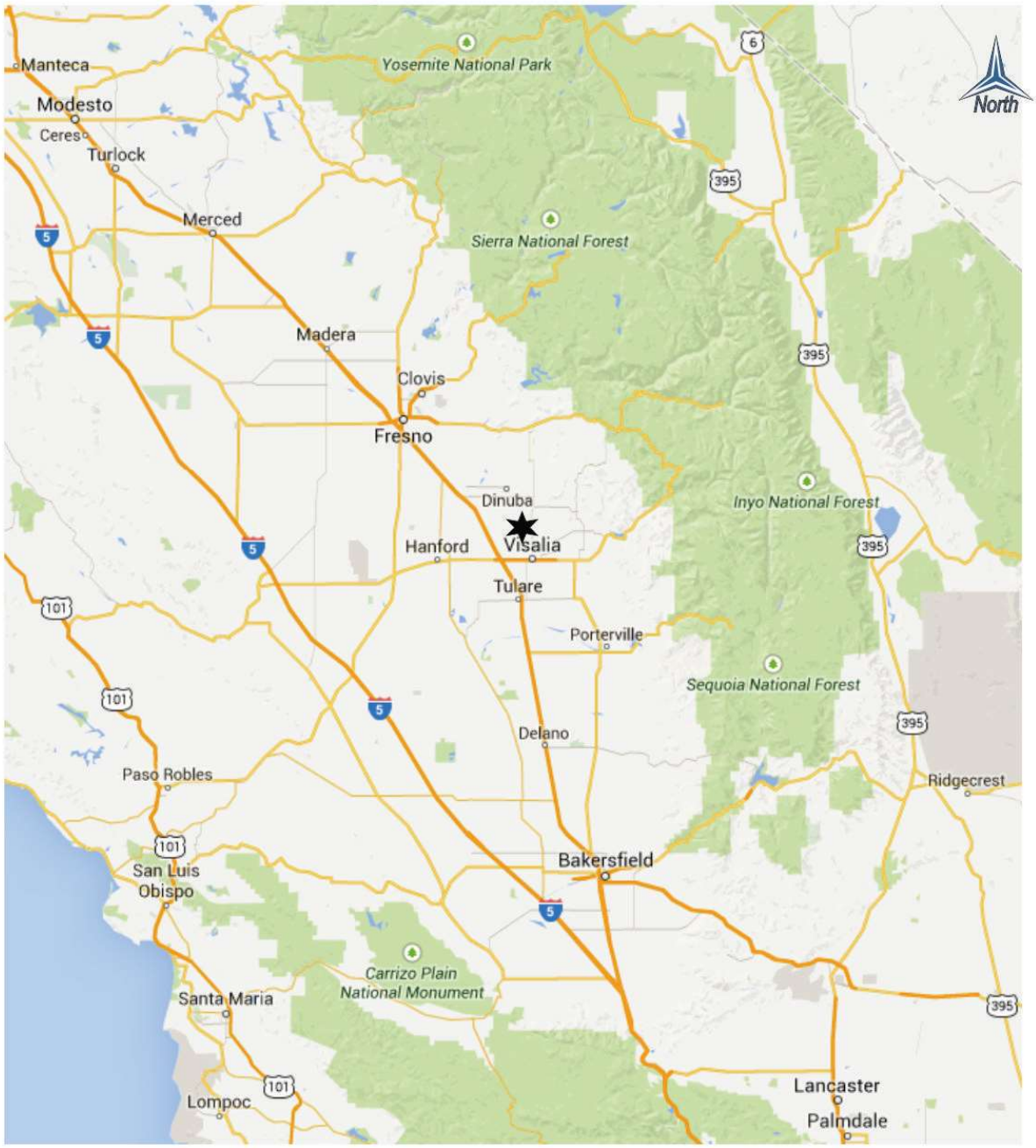
Intersection LOS analysis was conducted using the Synchro software program. Synchro supports HCM methodologies and is deemed an acceptable program by City of Visalia staff for assessment of traffic impacts. Levels of Service can be determined for both signalized and unsignalized intersections.

Tables 1-1 and 1-2 indicate the ranges in the amounts of average delay for a vehicle at signalized and unsignalized intersections for the various levels of service ranging from LOS "A" to "F".

The signalized LOS standards applied to calculate intersection LOS are in accordance with the current edition of the HCM. Intersection turning movement counts and roadway geometrics used to develop LOS calculations were obtained from field review findings and count data provided from the traffic count sources identified in Section 2.1.

Pratt Family (Gunning) Development
Regional Location

Figure 1-1

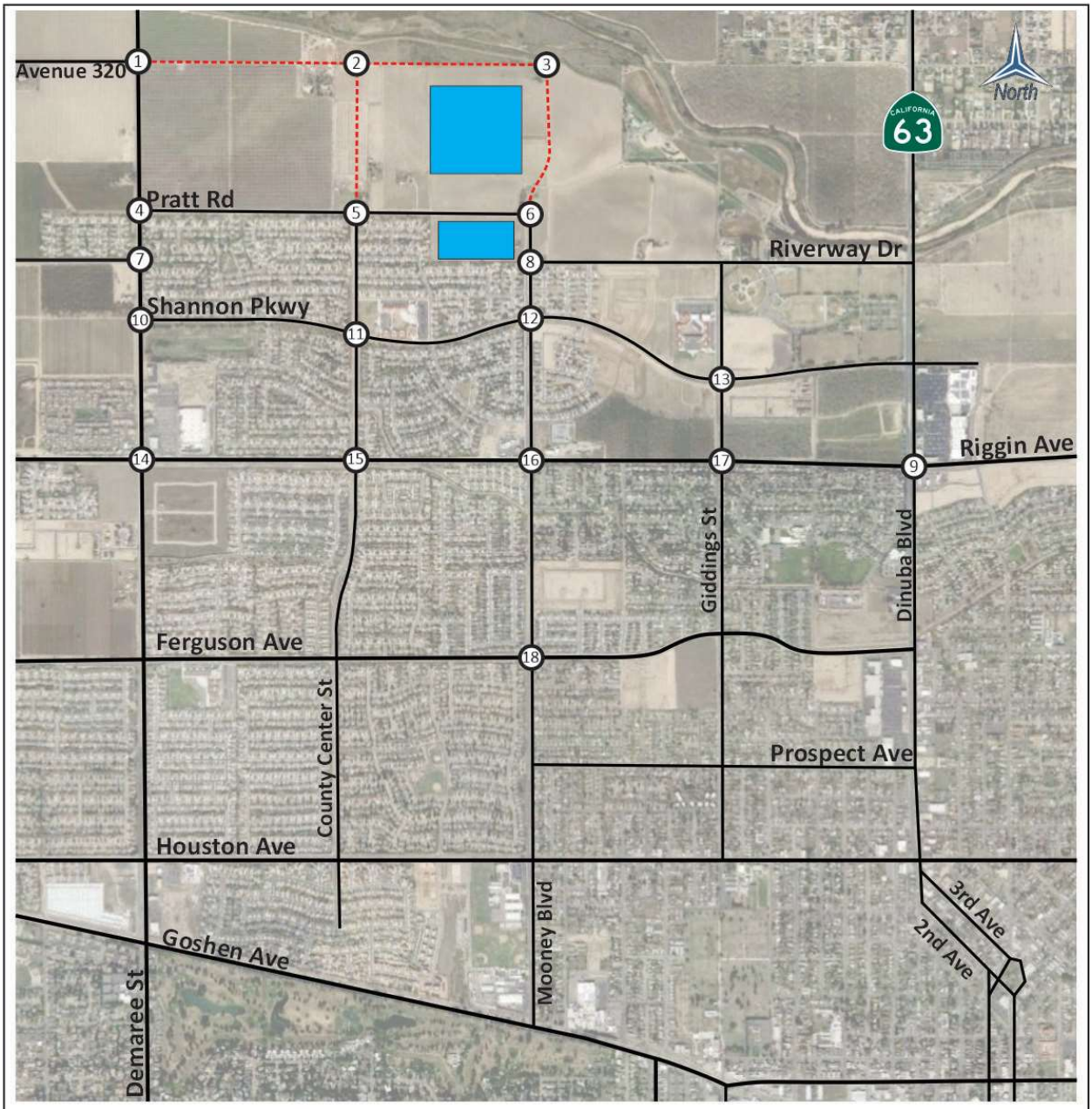


LEGEND

★ Project Location

Pratt Family (Gunning) Development
Project Location

Figure 1-2



Pratt Family (Gunning) Development
Project Site Plan

Figure 1-3

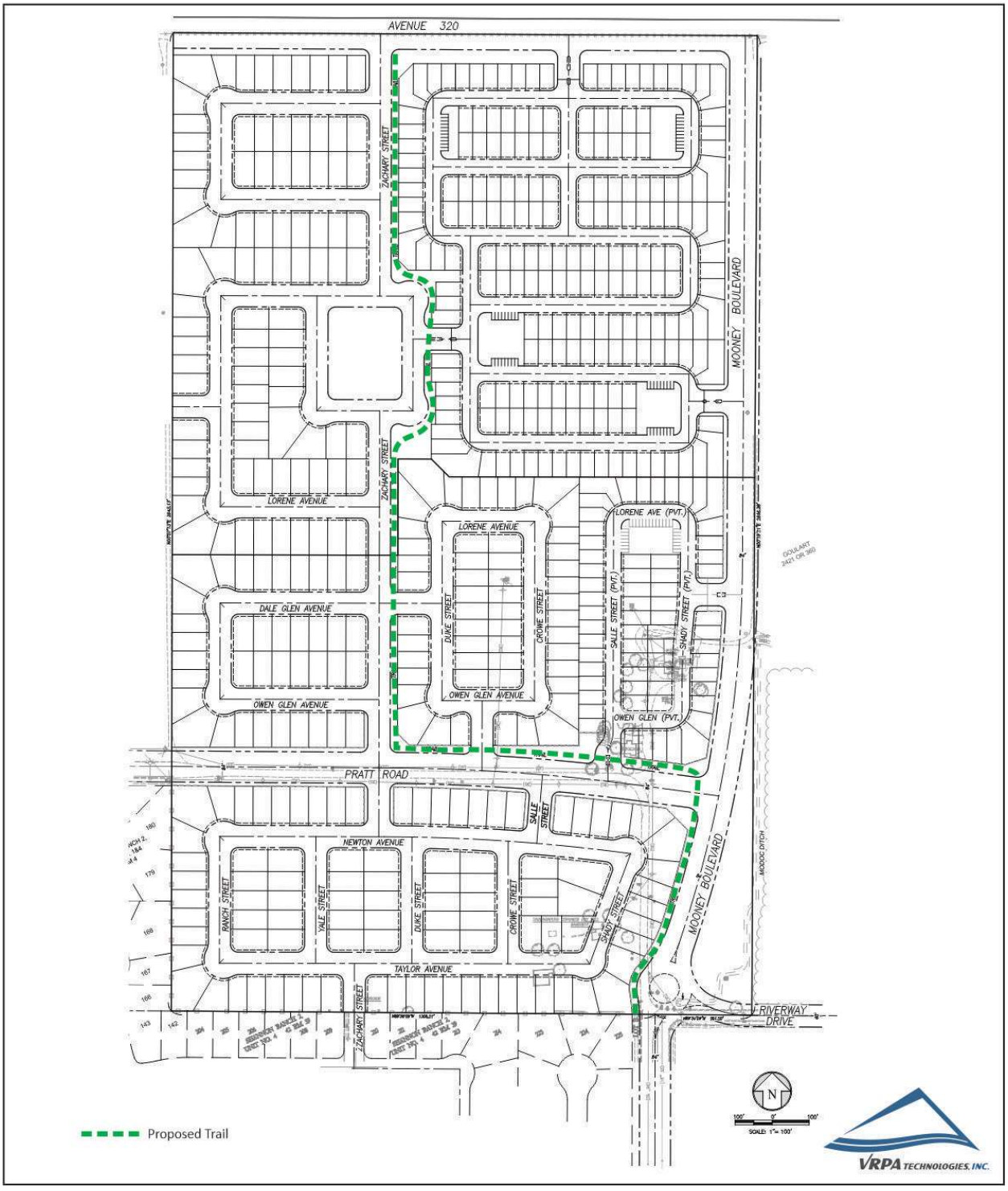


Table 1-1
Signalized Intersections
Level of Service Definitions (Highway Capacity Manual)

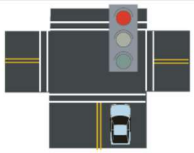
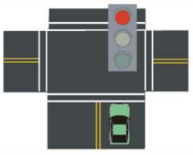
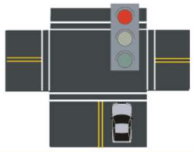
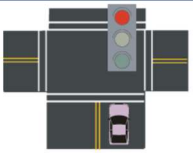
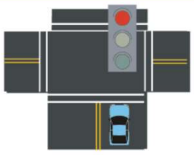
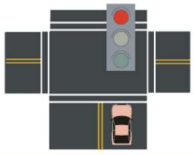
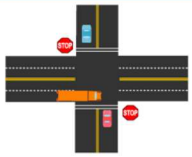
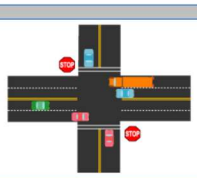
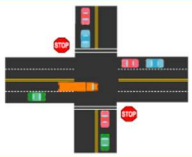
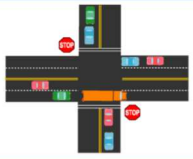
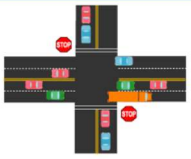
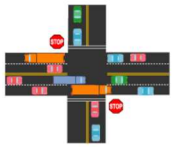
LEVEL OF SERVICE	DEFINITION		AVERAGE TOTAL DELAY (sec/veh)
A	Describes operations with very low delay. This level of service occurs when there is no conflicting traffic for a minor street.		≤ 10.0
B	Describes operations with moderately low delay. This level generally occurs with a small amount of conflicting traffic causing higher levels of average delay.		> 10.0 - 20.0
C	Describes operations with average delays. These higher delays may result from a moderate amount of minor street traffic. Queues begin to get longer.		> 20.0 - 35.0
D	Describes a crowded operation, with below average delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from shorter gaps on the mainline and an increase of minor street traffic. The queues of vehicles are increasing.		> 35.0 - 55.0
E	Describes operations at or near capacity. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor gaps for the minor street to cross and large queues.		> 55.0 - 80.0
F	Describes operations that are at the failure point. This level, considered to be unacceptable to most drivers, often occurs with over- saturation, that is, when arrival flow rates exceed the capacity of the intersection. Insufficient gaps of suitable size exist to allow minor traffic to cross the intersection safely.		> 80.0

Table 1-2
Unsignalized Intersections
Level of Service Definitions (Highway Capacity Manual)

LEVEL OF SERVICE	DEFINITION	AVERAGE TOTAL DELAY (sec/veh)
A	No delay for stop-controlled approaches. 	0 - 10.0
B	Describes operations with minor delay. 	> 10.0 - 15.0
C	Describes operations with moderate delays. 	> 15.0 - 25.0
D	Describes operations with some delays. 	> 25.0 - 35.0
E	Describes operations with high delays and long queues. 	> 35.0 - 50.0
F	Describes operations with extreme congestion, with very high delays and long queues unacceptable to most drivers. 	> 50.0

When an unsignalized intersection does not meet acceptable LOS standards, the investigation of the need for a traffic signal shall be evaluated. The latest edition of the California Manual on Uniform Traffic Control Devices for Streets and Highways (California MUTCD) introduces standards for determining the need for traffic signals. The California MUTCD indicates that the satisfaction of one or more traffic signal warrants does not in itself require the installation of a traffic signal. In addition to the warrant analysis, an engineering study of the current or expected traffic conditions should be conducted to determine whether the installation of a traffic signal is justified. The City of Visalia uses the California MUTCD Eight-Hour Vehicular Volume Signal Warrant (Warrant 1) when evaluating the need for signalization at an intersection. The California MUTCD Peak Hour Warrant (Warrant 3) was solely used to illustrate peak hour conditions at unsignalized intersections that do not meet the City of Visalia's acceptable level of service criteria.

1.3 Policies to Maintain Level of Service

1.3.1 *City of Visalia*

The City of Visalia General Plan states the City will plan for LOS "D" for street segments and intersections.

1.3.2 *Tulare County*

The Tulare County General Plan states the minimum LOS is "D" for street segments and intersections.

1.3.3 *California Department of Transportation (Caltrans)*

With the changes brought about by SB 743, Caltrans no longer uses level of service to determine the need for transportation improvements. Instead, the focus is on providing adequate facilities for pedestrians, bicycles, and transit as well as safety considerations for all transportation modes. Guidance is provided in the Transportation Impact Study Guide dated May 20, 2020, and the Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance dated July 2020. This guidance was used in determining the need for roadway improvements on Caltrans facilities.

1.4 VMT Analysis

Senate Bill 743 (SB 743) went into effect throughout California on July 1, 2020. This legislation changed the performance measure for CEQA transportation studies from level of service to vehicle miles traveled (VMT). An assessment of potential VMT impacts associated with the Project is provided in Chapter 3 to address changes in CEQA requirements.

2.0 Existing Conditions

2.1 Existing Traffic Counts and Roadway Geometrics

The first step toward assessing Project traffic impacts is to assess existing traffic conditions. This report reflects existing conditions as of the time of the most recent counts in late summer/early fall of 2021.

Existing AM and PM peak hour turning movements were collected at each study intersection by National Data and Surveying Services. Intersection turning movement counts were conducted for the peak hour periods of 7:00-9:00 AM and 4:00-6:00 PM for study intersections on Tuesday, January 5th and August 24th of 2021. Traffic count data worksheets are provided in Appendix A. Existing traffic counts collected on January 5th were adjusted considering the Tulare County Association of Government (TCAG) travel model and historic traffic counts in the study area given the on-going COVID-19 pandemic. Following is the methodology used for adjusting turning movement counts collected on January 5th:

- ✓ A 2% per year growth rate was applied to historical peak hour counts collected in the study area (SR 63) to estimate Year 2021 pre-COVID conditions (Year 2021 peak hour values in non-COVID conditions).

- ✓ The estimated pre-COVID year 2021 peak hour values (obtained using the 2% per year growth rate) were compared to January 2021 values. Results of the comparison indicated that traffic counts taken in January 2021 (i.e., during COVID) should be increased by a factor of 1.37 to estimate 2021 pre-COVID levels (Year 2021 peak hour values in non-COVID conditions).

2.2 Existing Functional Roadway Classification System

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and highways do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads.

The current hierarchical system of roadways within the study area consists of the following four (4) basic classifications:

- ✓ **State Freeways and Highways** – provide for the ability to carry large traffic volumes at high speeds for long distances. Access points are fully controlled. Freeways connect points within the City/County and link the City/County to other parts of the State.

- ✓ **Arterials** – provide for mobility within the City/County, carrying through traffic on continuous routes and joining major traffic generators, freeways, and other arterials. Access to abutting private property and intersecting local streets shall generally be restricted.

- ✓ **Collectors** – provide for internal traffic movement within communities and connect local roads to arterials. Direct access to abutting private property shall generally be permitted.
- ✓ **Local Streets** – Roadways which provide direct access to abutting property and connect with other local roads, collectors, and arterials. Local roads are typically developed as two-lane undivided roadways. Access to abutting private property and intersecting streets shall be permitted.

2.3 Affected Streets and Highways

Street and highway intersections and segments near and adjacent to the Project site were analyzed to determine levels of service utilizing HCM-based methodologies described previously. The study intersections included in this TIS are listed below. The study intersections were developed in consultation with City of Visalia staff. The intersections of Riverway Drive at Dinuba Boulevard and Riverway Drive at Giddings Street were not included in the analysis since Riverway Drive is transitioning to no longer have thru access to Dinuba Boulevard. Riverway Drive will terminate and become a cul-de-sac approximately 900 feet east of Giddings Street. The intersection of Shannon Parkway at Dinuba Boulevard was not included in the analysis given the minimal amount of Project traffic that would impact the intersection.

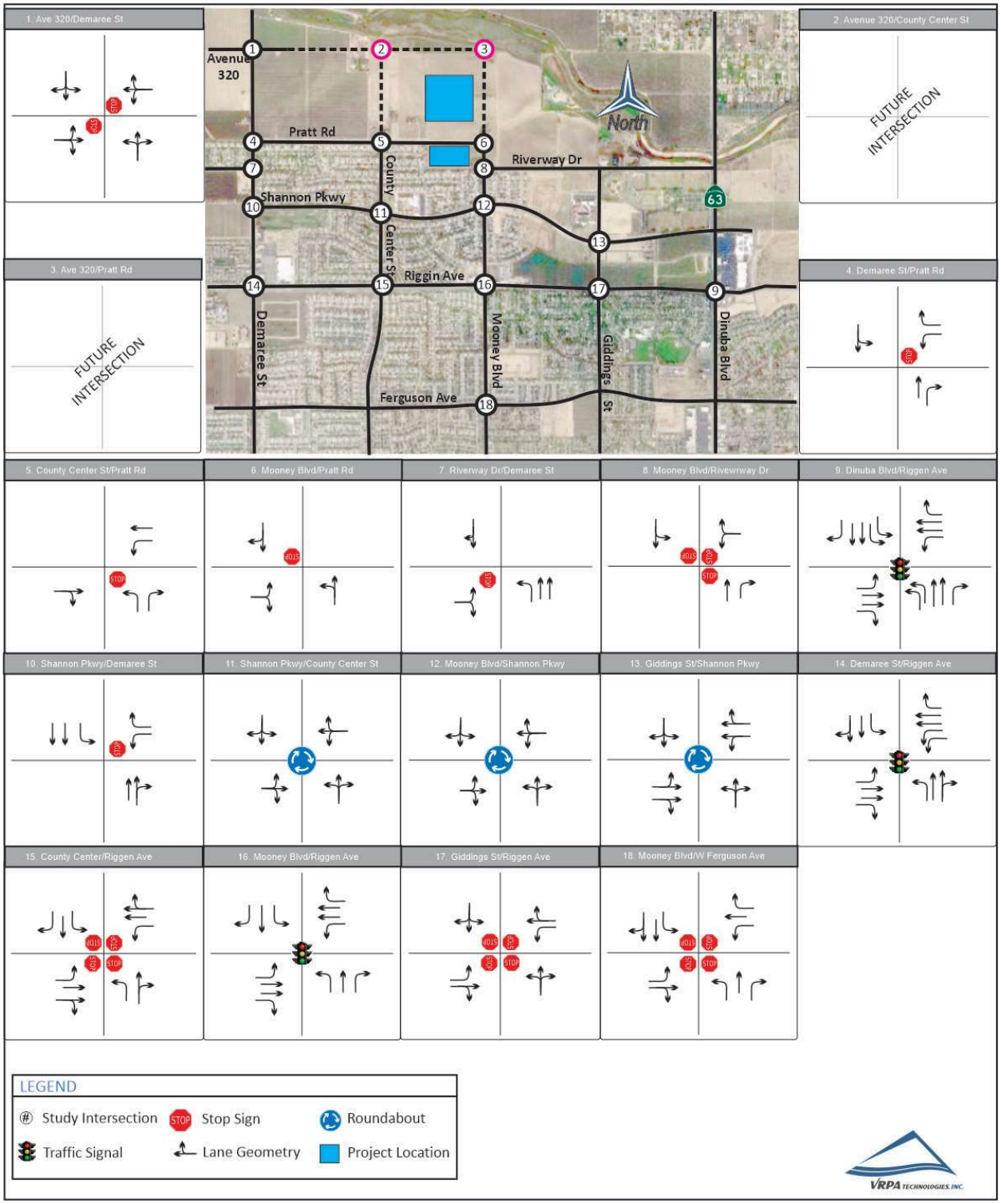
Intersections

- ✓ Avenue 320 / Demaree Street
- ✓ Pratt Road / Demaree Street
- ✓ Riggin Avenue-Avenue 312 / Demaree Street
- ✓ Riggin Avenue / County Center Drive
- ✓ Pratt Road / Mooney Boulevard
- ✓ Riverway Drive / Mooney Boulevard
- ✓ Shannon Parkway / Mooney Boulevard
- ✓ Riggin Avenue / Mooney Boulevard
- ✓ Shannon Parkway / Giddings Street
- ✓ Riggin Avenue / Giddings Street
- ✓ Riggin Avenue / Dinuba Boulevard-State Route (SR) 63
- ✓ Shannon Parkway / Demaree Avenue
- ✓ Riverway Drive/Demaree Avenue
- ✓ County Center Drive/Pratt Road
- ✓ County Center Drive/Shannon Parkway
- ✓ Ferguson Street / Mooney Boulevard
- ✓ Avenue 320 / Mooney Boulevard
- ✓ County Center Drive/Avenue 320

The existing lane geometry at study area intersections is shown in Figure 2-1. Figures 2-2 and 2-3 show existing traffic volumes for the AM and PM peak hours in the study area.

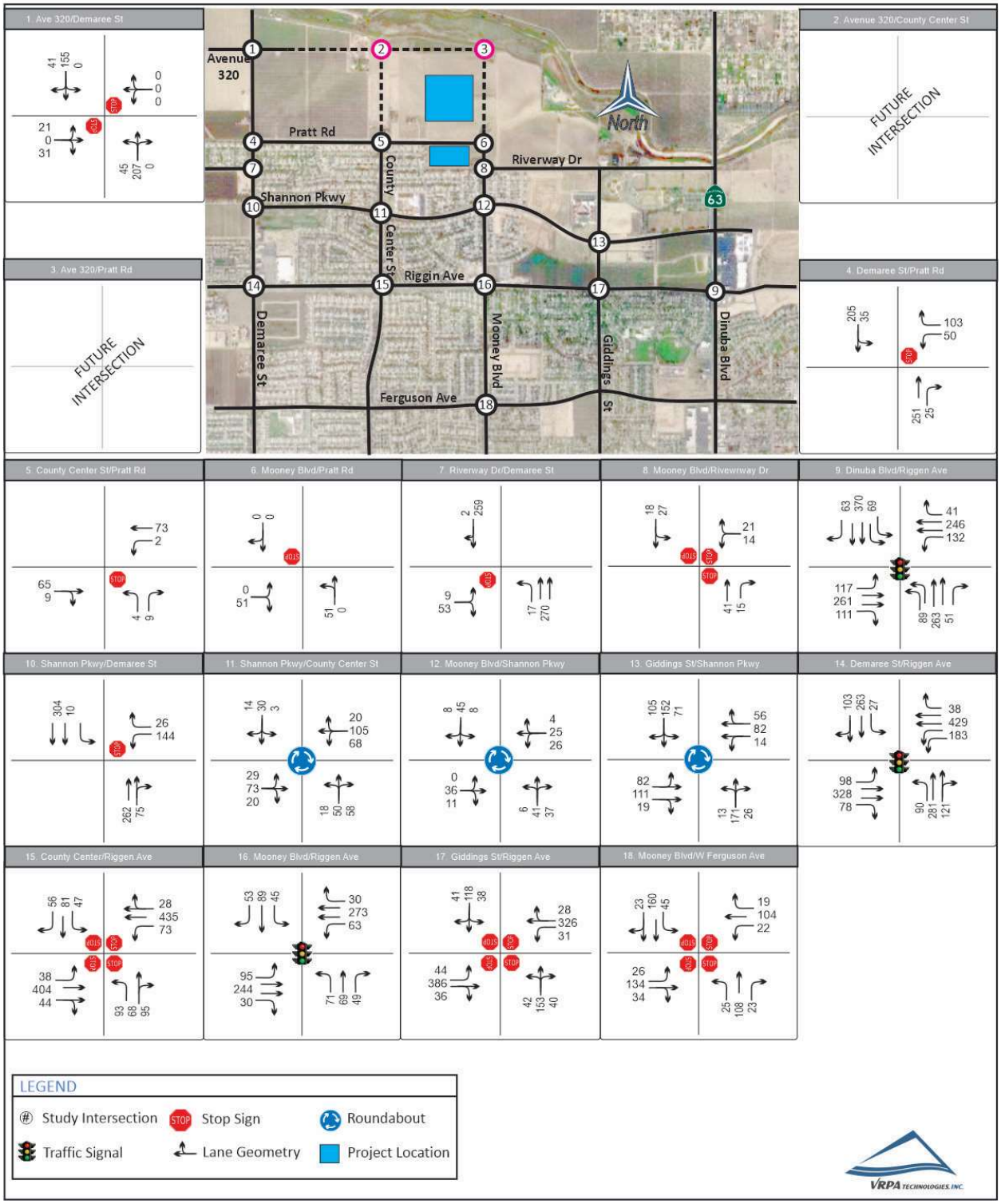
Pratt Family (Gunning) Development
Existing Lane Geometry

Figure 2-1



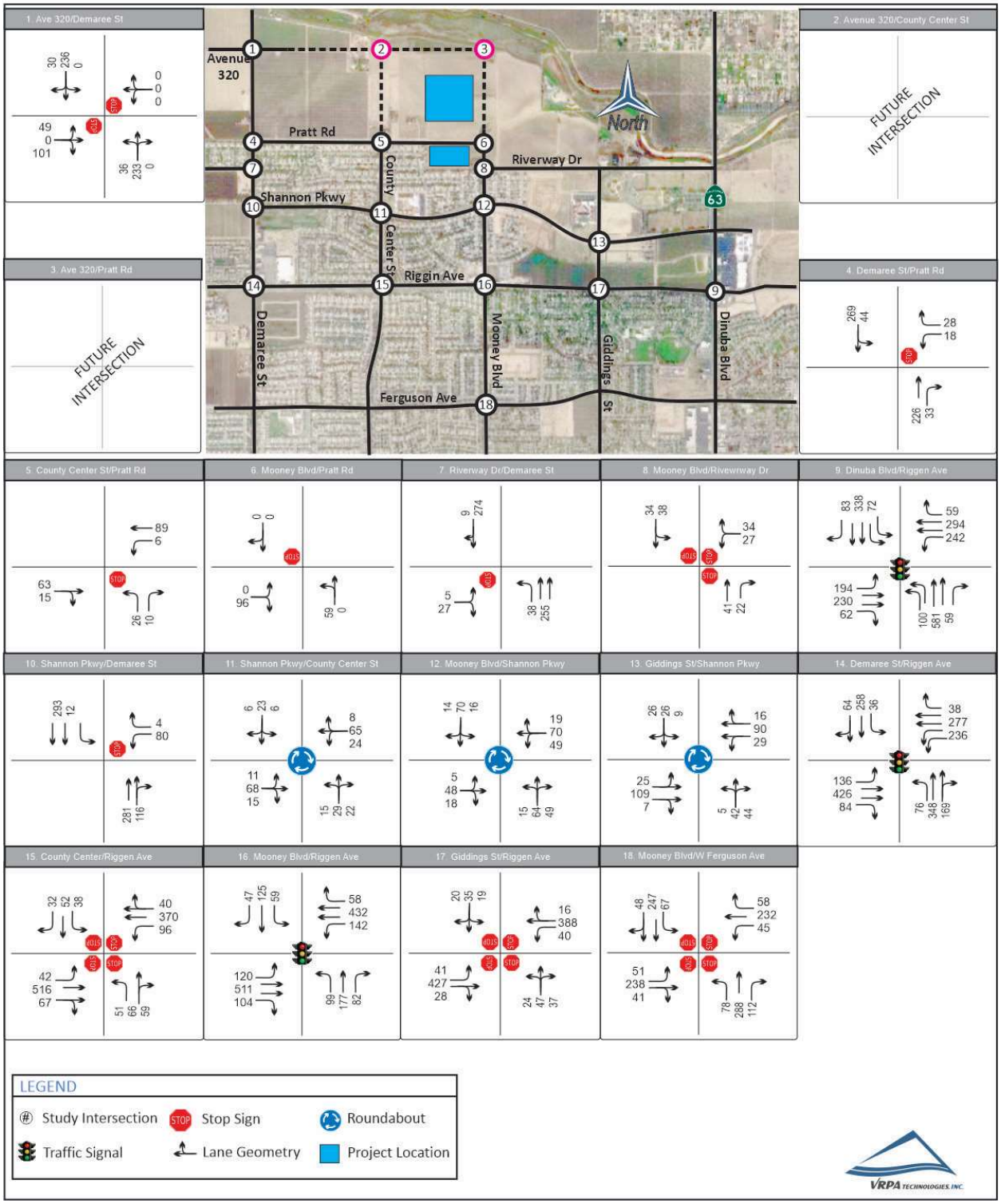
Pratt Family (Gunning) Development
Existing AM Peak Hour Traffic

Figure 2-2



Pratt Family (Gunning) Development
Existing PM Peak Hour Traffic

Figure 2-3



2.4 Level of Service

2.4.1 *Intersection Capacity Analysis*

All intersection LOS analyses were estimated using Synchro 10 Software. Various roadway geometrics, traffic volumes, and properties (peak hour factors, storage pocket length, etc.) were input into the Synchro 10 Software program to accurately determine the travel delay and LOS for each Study scenario. The intersection LOS and delays reported represent the 6th Edition HCM outputs. Synchro assumptions, listed below, show the various Synchro inputs and methodologies used in the analysis.

✓ **Lane Geometry**
- Storage lengths for turn lanes for existing intersections were obtained from aerial photos and rounded to the nearest 25 feet
- VRPA conducted a field study of the specified intersections and segments to verify lane geometry and intersection control as well as to obtain other pertinent data such as signal timing and phasing, where applicable

✓ **Traffic Conditions**
- Peak hour factors (PHF) for each intersection approach was obtained from traffic counts in the study area and were utilized for Existing, Opening Day, and 5-Year Horizon conditions. For 10-Year Horizon and 20-Year Horizon conditions, a PHF of 0.92 was applied unless the existing PHF was greater than 0.92
- Heavy vehicle percentages were based on the HCM default
- Roadway link speed limits were observed in the field and input into the Synchro network to determine roadway link speeds

Results of the analysis show that all of the study intersections currently meet the City of Visalia's minimum level of service criteria with the exception of the Riggin Avenue at Giddings Street intersection (AM Peak hour). It should be noted that peak hour traffic at the Riggin Avenue and Giddings Street intersection does not meet the California MUTCD Peak Hour Warrant (Warrant 3). As indicated in Chapter 1, the City of Visalia uses the California MUTCD Eight-Hour Vehicular Volume Signal Warrant (Warrant 1) when evaluating the need for signalization at an intersection. Table 2-1 shows the intersection LOS for the existing conditions. Synchro 10 (HCM 6th Edition) Worksheets are provided in Appendix B.

2.4.2 *Queuing Analysis*

Table 2-2 provides a queue length summary for left and right turn lanes at the study intersections for Existing Conditions. Queuing analysis for City of Visalia intersections was completed using the queuing formulas presented in the City of Visalia "Procedures For Traffic Impact Analysis (TIA)", dated March 2021. Queuing analysis for Caltrans intersections was completed using Index 405.2 of the Highway Design Manual (HDM). As shown in Table 2-2, there are a few locations where queuing currently exceeds the existing queue lane storage length.

Table 2-1
Existing Intersection Operations

INTERSECTION	CONTROL	TARGET LOS	PEAK HOUR	EXISTING	
				DELAY	LOS
1. Avenue 320 / Demaree Street	Two-Way Stop Sign	D	AM	11.1	B
			PM	13.1	B
4. Pratt Road / Demaree Street	One-Way Stop Sign	D	AM	14.1	B
			PM	14.2	B
5. Pratt Road / County Center Street	One-Way Stop Sign	D	AM	9.4	A
			PM	9.8	A
6. Pratt Road / Mooney Boulevard	One-Way Stop Sign	D	AM	0.0	A
			PM	0.0	A
7. Riverway Drive / Demaree Street	One-Way Stop Sign	D	AM	10.9	B
			PM	10.8	B
8. Riverway Drive / Mooney Boulevard	All-Way Stop Sign	D	AM	7.4	A
			PM	7.5	A
9. Riggin Avenue / Dinuba Boulevard (SR-63)	Signalized	-- [1]	AM	25.4	C
			PM	27.3	C
10. Shannon Parkway / Demaree Street	One-Way Stop Sign	D	AM	16.3	C
			PM	15.9	C
11. Shannon Parkway / County Center Street	Roundabout	D	AM	4.9	A
			PM	3.4	A
12. Shannon Parkway / Mooney Boulevard	Roundabout	D	AM	3.3	A
			PM	4.0	A
13. Shannon Parkway / Giddings Street	Roundabout	D	AM	6.3	A
			PM	3.7	A
14. Riggin Avenue / Demaree Street	Signalized	D	AM	30.5	C
			PM	31.9	C
15. Riggin Avenue / County Center Street	All-Way Stop Sign	D	AM	20.3	C
			PM	21.8	C
16. Riggin Avenue / Mooney Boulevard	Signalized	D	AM	28.0	C
			PM	33.5	C
17. Riggin Avenue / Giddings Street	All-Way Stop Sign	D	AM	**49.3**	**E +**
			PM	19.4	C
18. Ferguson Avenue / Mooney Boulevard	All-Way Stop Sign	D	AM	10.8	B
			PM	26.9	D

DELAY is measured in seconds per vehicle

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

For signalized, roundabout, and all-way stop intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

1 - With the changes brought about by SB 743, Caltrans no longer uses level of service to determine the need for transportation improvements. Instead, the focus is on providing adequate facilities for pedestrians, bicycles, and transit as well as safety considerations for all transportation modes. Guidance is provided in the Transportation Impact Study Guide dated May 20, 2020 and the Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance dated July 2020. This guidance was used in determining the need for roadway improvements on Caltrans facilities.

+ Does not meet peak hour signal warrants.

Table 2-2
Existing Queuing Operations

INTERSECTION	EXISTING QUEUE STORAGE LENGTH (ft)		EXISTING CONDITIONS	
			AM Queue	PM Queue
Pratt Road / Demaree Street	NB Right[1]	--	21	28
	WB Left	200	42	15
Pratt Road / County Center Street	NB Right	225	8	8
	WB Left	125	2	5
Riverway Drive / Demaree Street	NB Left	175	14	32
Riverway Drive / Mooney Boulevard	NB Right[1]	--	13	18
Riggin Avenue / Dinuba Boulevard (SR-63)	NB Left	2 @ 375	130	146
	NB Right	200	74	86
	SB Left	2 @ 375	101	105
	SB Right	325	92	121
	EB Left	250	171	**283**
	EB Right	300	162	90
	WB Left	275	193	**353**
	WB Right	300	60	86
Shannon Parkway / Demaree Street	SB Left	100	8	10
	WB Left	150	120	67
Riggin Avenue / Demaree Street	NB Left	250	131	111
	SB Left	200	39	53
	EB Left	275	143	198
	EB Right	150	114	123
	WB Left	2 @ 150	**267**	**344**
	WB Right	150	55	55
Riggin Avenue / County Center Street	NB Left	175	78	43
	SB Left	125	39	32
	SB Right	125	47	27
	EB Left	250	32	35
	WB Left	150	61	80
Riggin Avenue / Mooney Boulevard	NB Left	175	104	144
	NB Right	125	71	120
	SB Left	150	66	86
	SB Right[1]	--	77	69
	EB Left	300	139	175
	EB Right	150	44	152
	WB Left	125	92	**207**
	WB Right	150	44	85
Riggin Avenue / Giddings Street	EB Left	150	37	34
	WB Left	150	26	33
Ferguson Avenue / Mooney Boulevard	NB Left	150	21	65
	NB Right[1]	--	19	93
	SB Left	150	38	56
	EB Left	150	22	43
	WB Left	175	18	38
	WB Right	50	16	48

Queue is measured in feet / **BOLD** denotes exceedance

1: Through lane terminates as right turn at intersection

2.5 Study Area Collision Data

The Transportation Injury Mapping System (TIMS) provided by University of California, Berkeley was used to evaluate traffic collisions in the study area. TIMS utilizes geocoded data provided by the Statewide Integrated Traffic Records System (SWITRS). SWITRS is a tool used by California Highway Patrol (CHP) and other Allied Agencies throughout California and includes various types of statistical reports and data. The database serves as a means to collect and process data gathered from a collision scene. Information from the TIMS database shows that approximately 63 injury or fatal accidents have occurred throughout the study area in the past 3 years. A graphical representation of traffic collisions throughout the study area for the past 3 years is provided in Figure 2-4. Collision data worksheets are provided in Appendix C. The City of Visalia area had approximately 1,276 injury or fatal accidents over the same timeframe referenced above. Injury and fatal accidents in the study area represent 5% of incidents that occurred in the City of Visalia. Collision data in the study area shows that 'Broadside' collisions are the most common accidents in the study area.

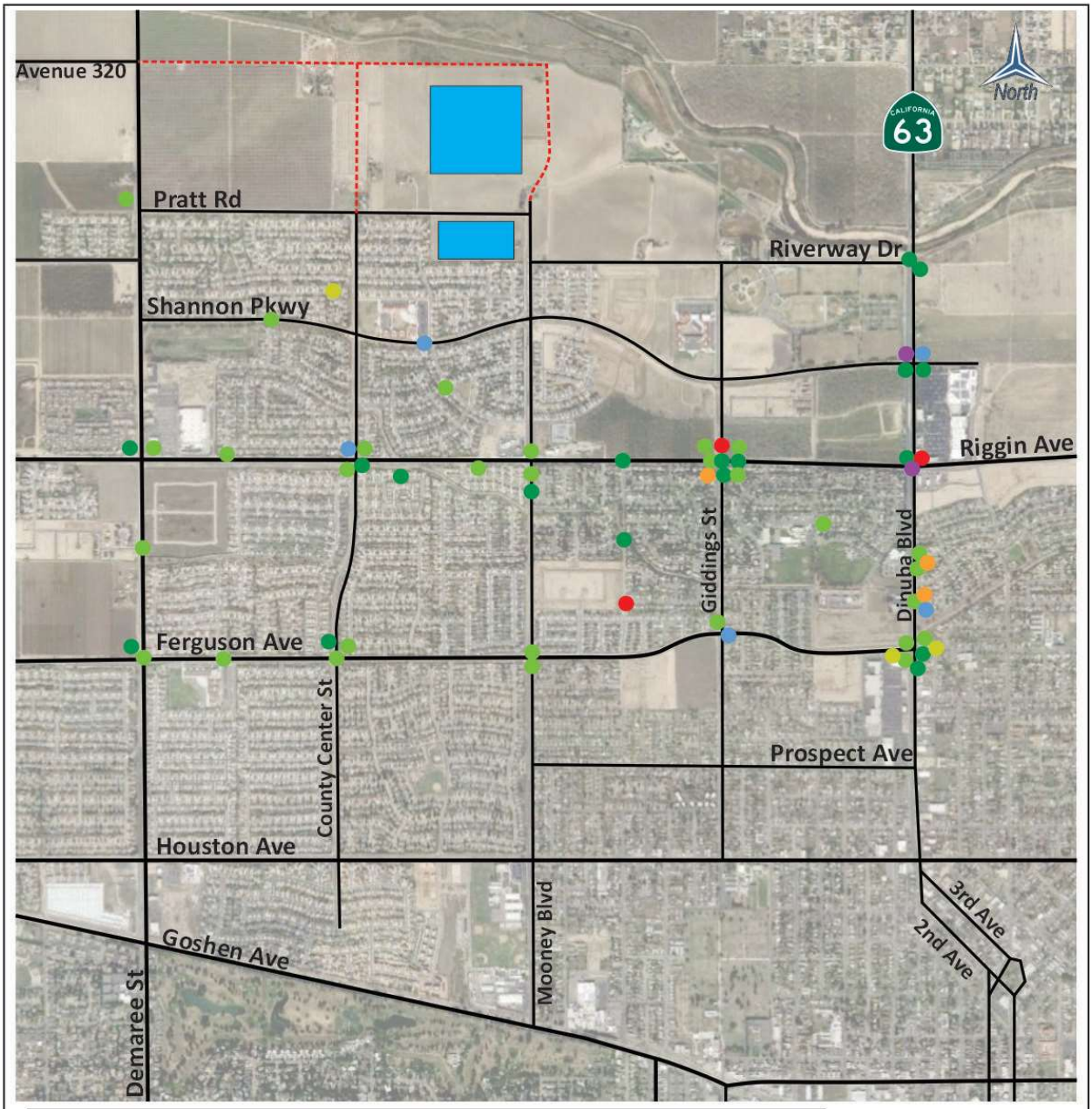
2.6 Pedestrian and Bicycle Facilities

The project site is located in a developing area of the City of Visalia. It is expected that facilities for pedestrians and bicycles that meet current design standards will be installed as the area develops. No existing deficiencies in pedestrian or bicycle facilities were noted in the vicinity of the project site.

2.7 Transit

The closest existing transit service is provided by Visalia Transit Route 16 at the Mooney Boulevard/Riggin Avenue intersection, approximately one-half mile from the nearest point on the project site. Visalia Transit Routes 7 and 8 traverse through the Dinuba Boulevard and Shannon Parkway and Riggin Avenue intersections.

Pratt Family (Gunning) Development **Figure 2-4**
Existing Study Area Collision Map (01/01/2018 - 12/31/2020)



3.0 Transportation Impacts

This chapter provides an assessment of the traffic the Project is expected to generate and the impact of that traffic on the surrounding street system.

3.1 Trip Generation

To assess the impacts that the Project may have on the surrounding roadway network, the first step is to determine Project trip generation. Project trip generation was determined using trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition) and the ITE Trip Generation Handbook (3rd Edition). The considerations described above led to the recommended trip generation for weekday AM (7:00-9:00am) and PM (4:00-6:00pm) peak hours shown in Table 3-1.

Table 3-1
Project Trip Generation

LAND USE	Quantity	DAILY TRIP ENDS (ADT)		WEEKDAY AM PEAK HOUR					WEEKDAY PM PEAK HOUR				
		RATE	VOLUME	RATE	IN:OUT SPLIT	VOLUME			RATE	IN:OUT SPLIT	VOLUME		
						IN	OUT	TOTAL			IN	OUT	TOTAL
Single Family Residential (210)	555 D.U.	9.44	5,239	0.74	25:75	103	308	411	0.99	63:37	346	203	549
TOTAL TRIP GENERATION			**5,239**			**103**	**308**	**411**			**346**	**203**	**549**

Source: Generation factors from ITE Trip Generation Manual, 10th Edition.
Trip ends are one-way traffic movements, entering or leaving.
The numbers in parenthesis are ITE land use codes.

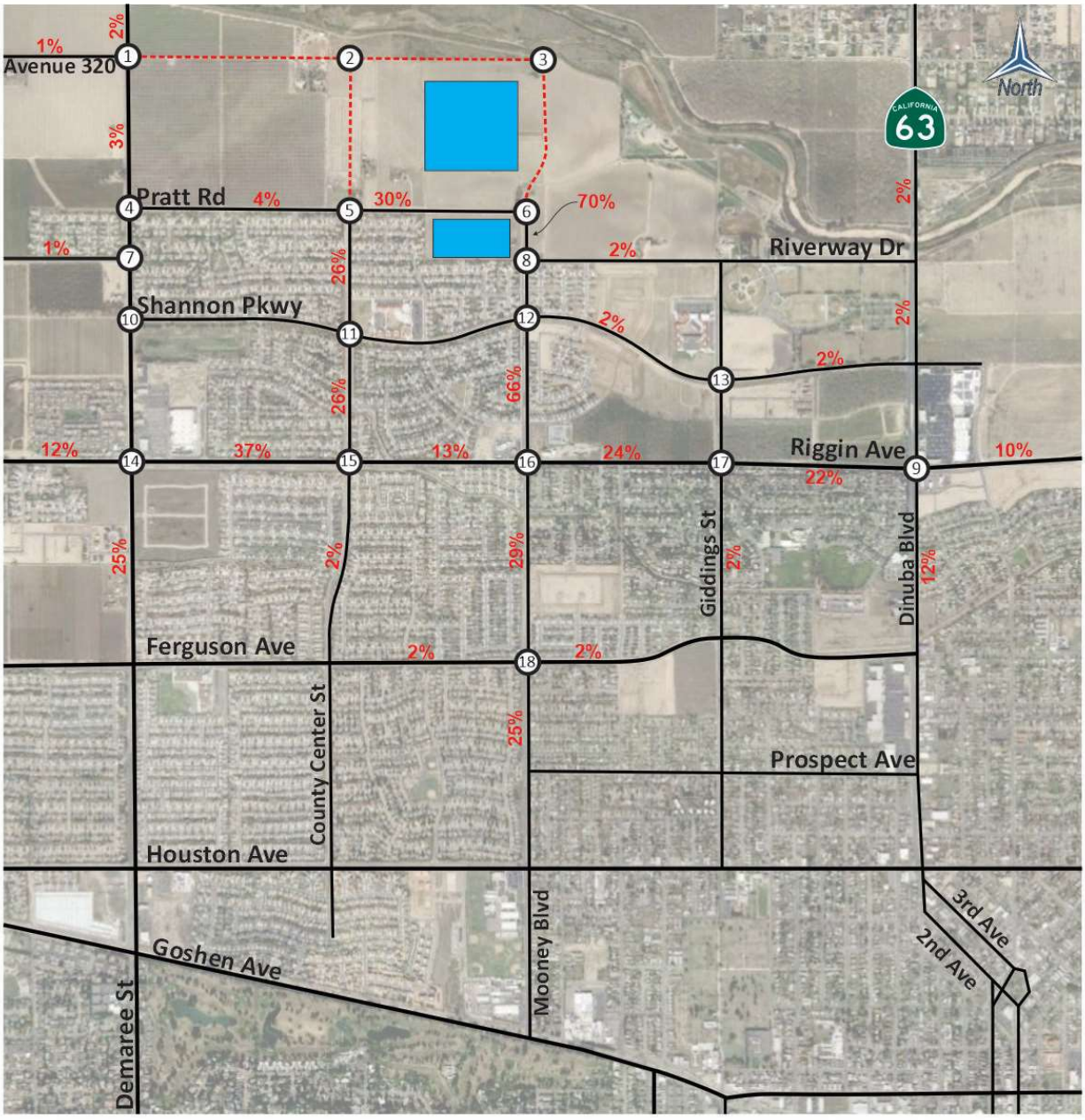
3.2 Trip Distribution

Project trip distribution percentages for the Opening Year, 5-Year Horizon, 10-Year Horizon, and 20-Year Horizon scenarios are shown in Figure 3-1a and 3-1b. These percentages are based upon knowledge of the study area, engineering judgement, prevailing traffic patterns in the study area, major routes, population centers, and other existing development.

Vehicular access to the site would be provided by Pratt Road, Mooney Boulevard, and Avenue 320. The extension of these roadways would be constructed to City standards and would be dedicated as public right of way. The proposed project would also construct a roundabout at the Riverway Drive and Mooney Boulevard intersection, which would also be dedicated as public right of way and would be constructed to Caltrans or City-approved standards.

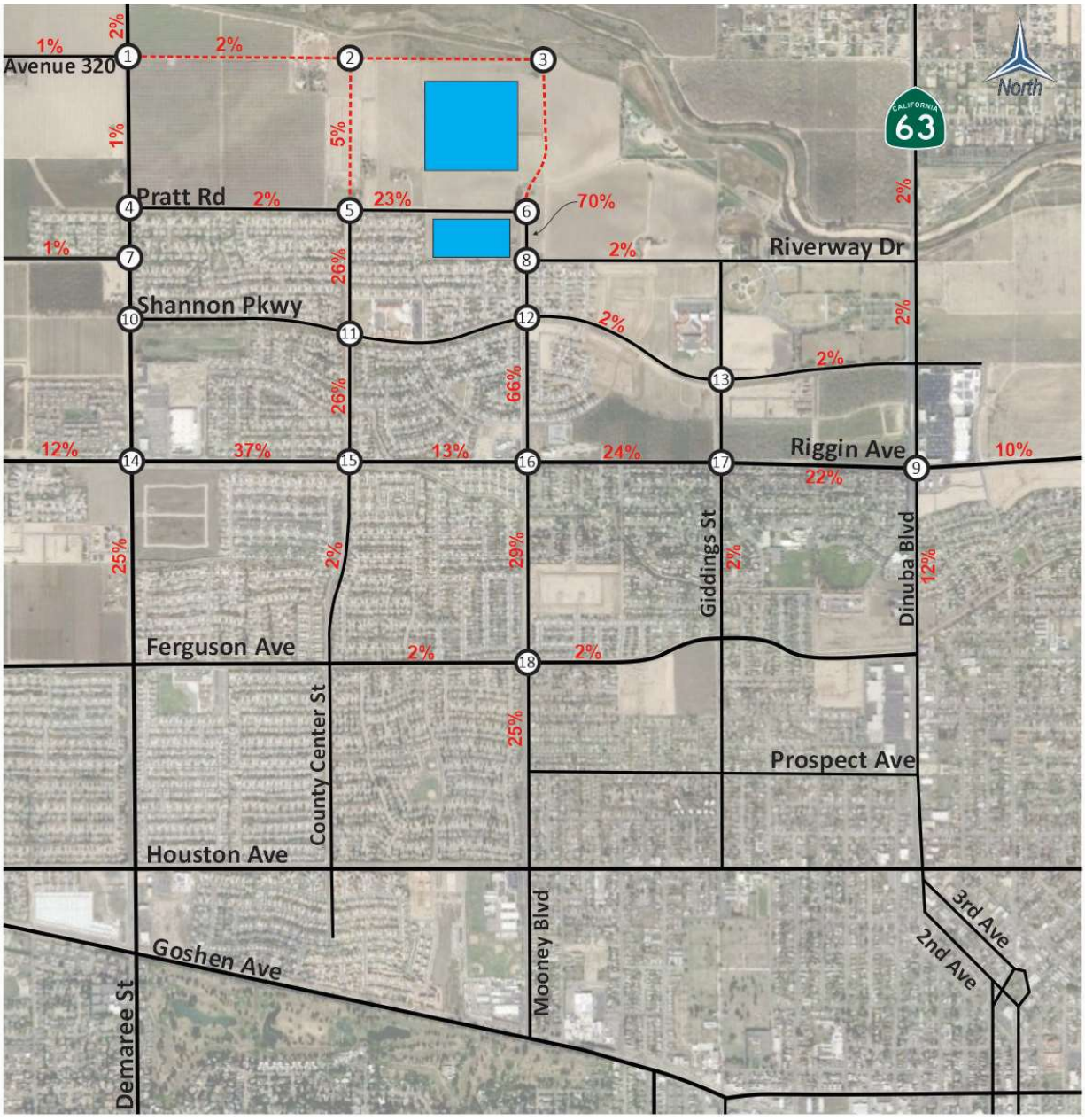
Based on the projected trips, the project will generate 549 PM peak hour trips. A project of this size is considered a moderate development and therefore requires a Category lll analysis. VRPA has prepared an analysis consistent with Table 1 in the City of Visalia Procedures for Traffic Impact Analysis (TIA).

Pratt Family (Gunning) Development — **Figure 3-1a**
Project Trip Distribution (Opening Year/5-Year Horizon)



Pratt Family (Gunning) Development
Project Trip Distribution (10/20-Year Horizon)

Figure 3-1b



LEGEND

Project Location ------- Future Roadway (#) Study Intersection

VRPA TECHNOLOGIES, INC.

3.3 Project Traffic

Project traffic as shown in Table 3-1 was distributed to the roadway system using the trip distribution percentages shown in Figures 3-1a and 3-1b. A graphical representation of the resulting AM and PM peak hour Project trips used is shown in Figures 3-2a, 3-2b, 3-3a and 3-3b.

3.4 Approved/Pending Project Traffic

Traffic impact analyses typically require the analysis of approved or pending developments that have not yet been built in the vicinity of the Project. There are several development projects in the Project's vicinity that will add new trips to the intersections and roadway segments being evaluated in this TIS. The approved or pending projects included in this TIS are graphically displayed in Figure 3-4. Trip generation and distribution information for the approved and pending developments was estimated using trip generation rates from the ITE Trip Generation Manual (10th Edition) and engineering judgement and prevailing traffic patterns. Trip generation for the approved and pending developments is shown in Table 3-2. Figures 3-5 and 3-6 show the AM and PM peak hour trips for Approved and Pending project traffic. The peak hour trips for approved and pending project traffic was applied to the Opening Year, 5-Year Horizon, 10-Year Horizon, and 20-Year Horizon conditions discussed later in the report.

3.5 Opening Year Traffic Conditions

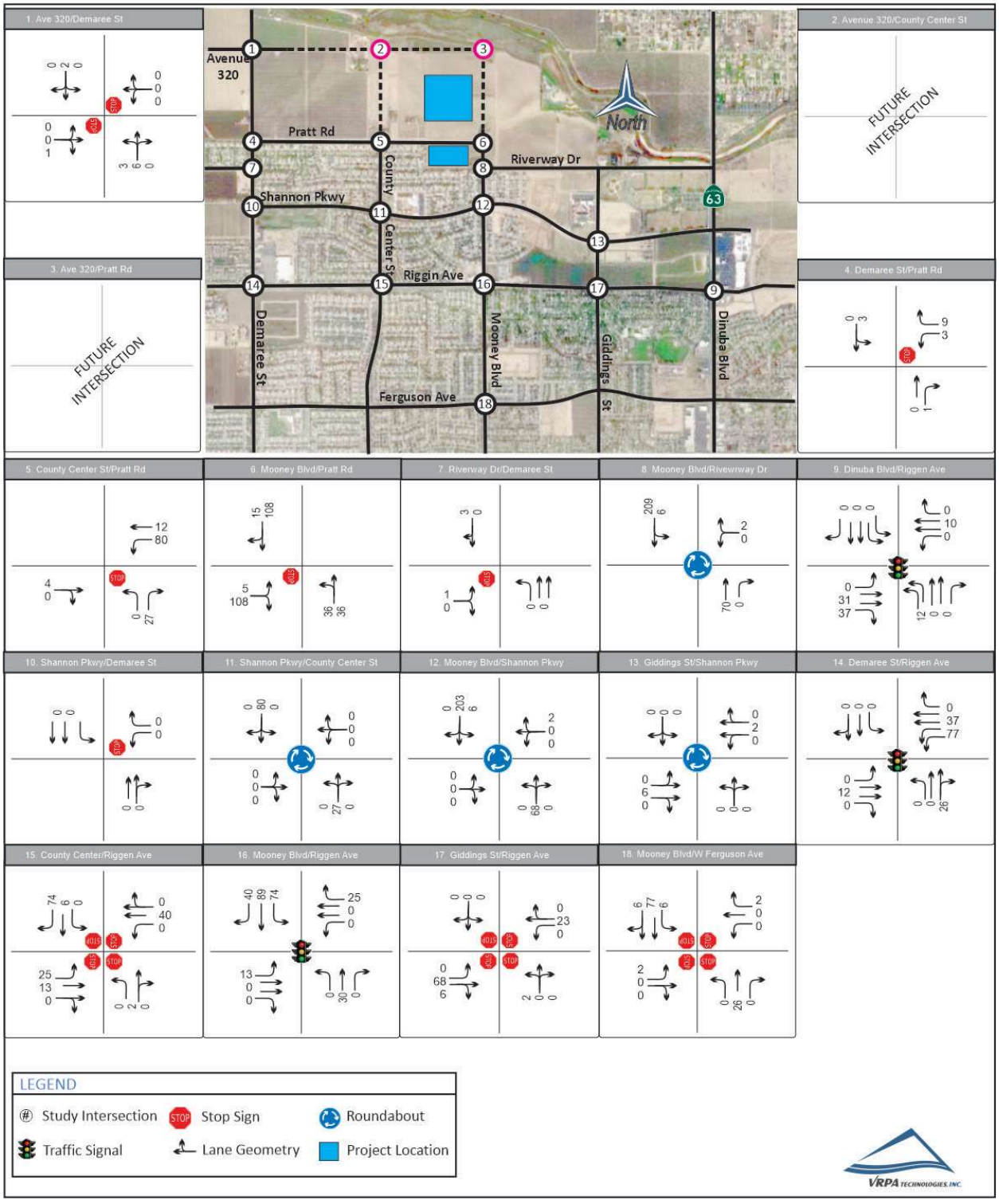
Traffic conditions with and without the Project in the Year 2022 were estimated by applying a growth rate of 2% per year to the existing traffic volumes. A comparison of the TCAG base year and future year travel model showed that the growth in the study area is approximately 2% per year. The resulting traffic for the Opening Year scenario is shown in Figures 3-7, 3-8, 3-9 and 3-10.

3.6 5-Year Horizon Traffic Conditions

Traffic conditions with and without the Project in the Year 2027 (5 years after Opening conditions) were estimated by applying a growth rate of 2% per year to the existing traffic volumes. A comparison of the TCAG base year and future year travel model showed that the growth in the study area is approximately 2% per year. The resulting traffic for the Opening Year scenario is shown in Figures 3-11, 3-12, 3-13 and 3-14.

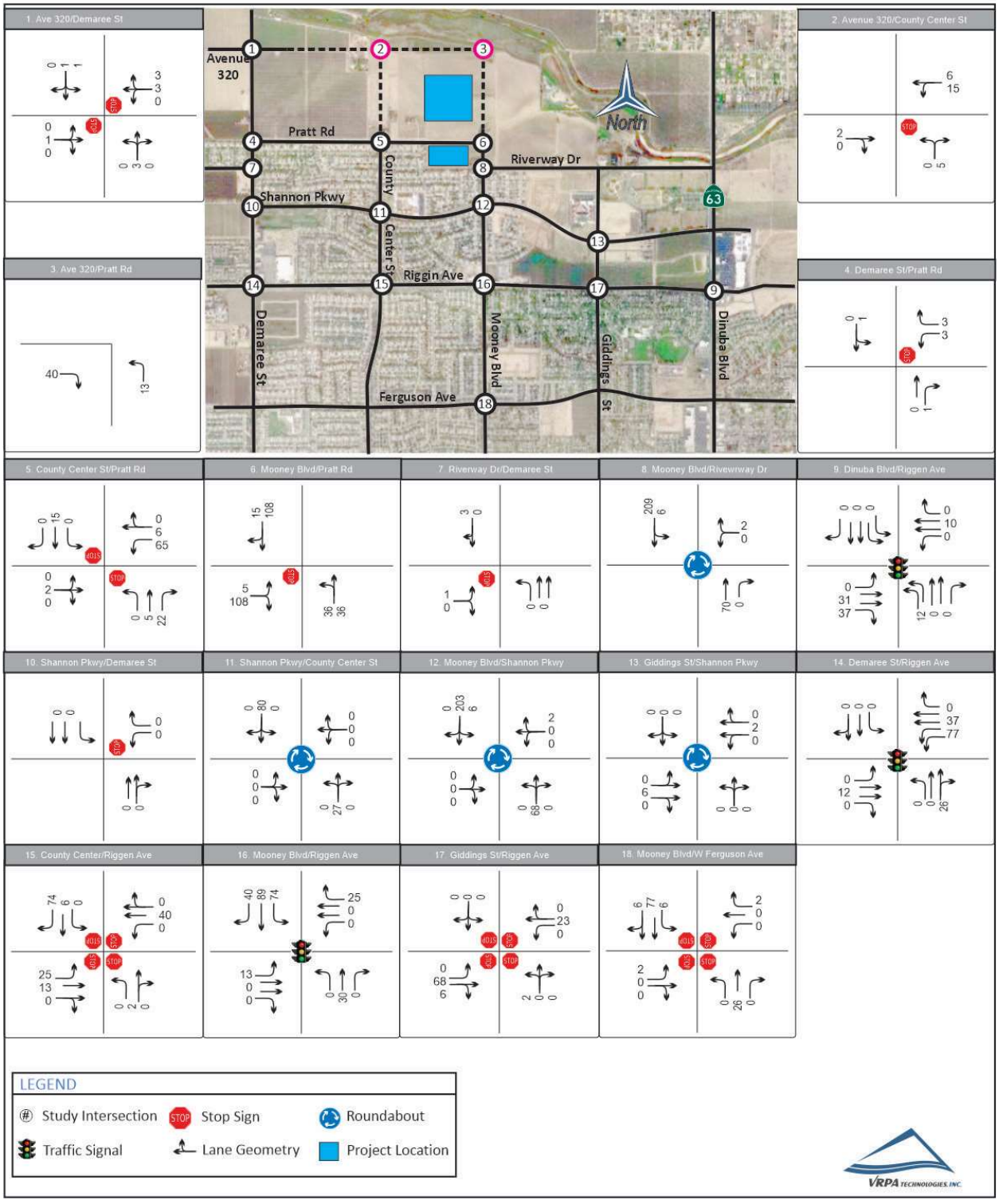
Pratt Family (Gunning) Development
Project AM Peak Hour Traffic (Opening Year/5-Year Horizon)

Figure 3-2a



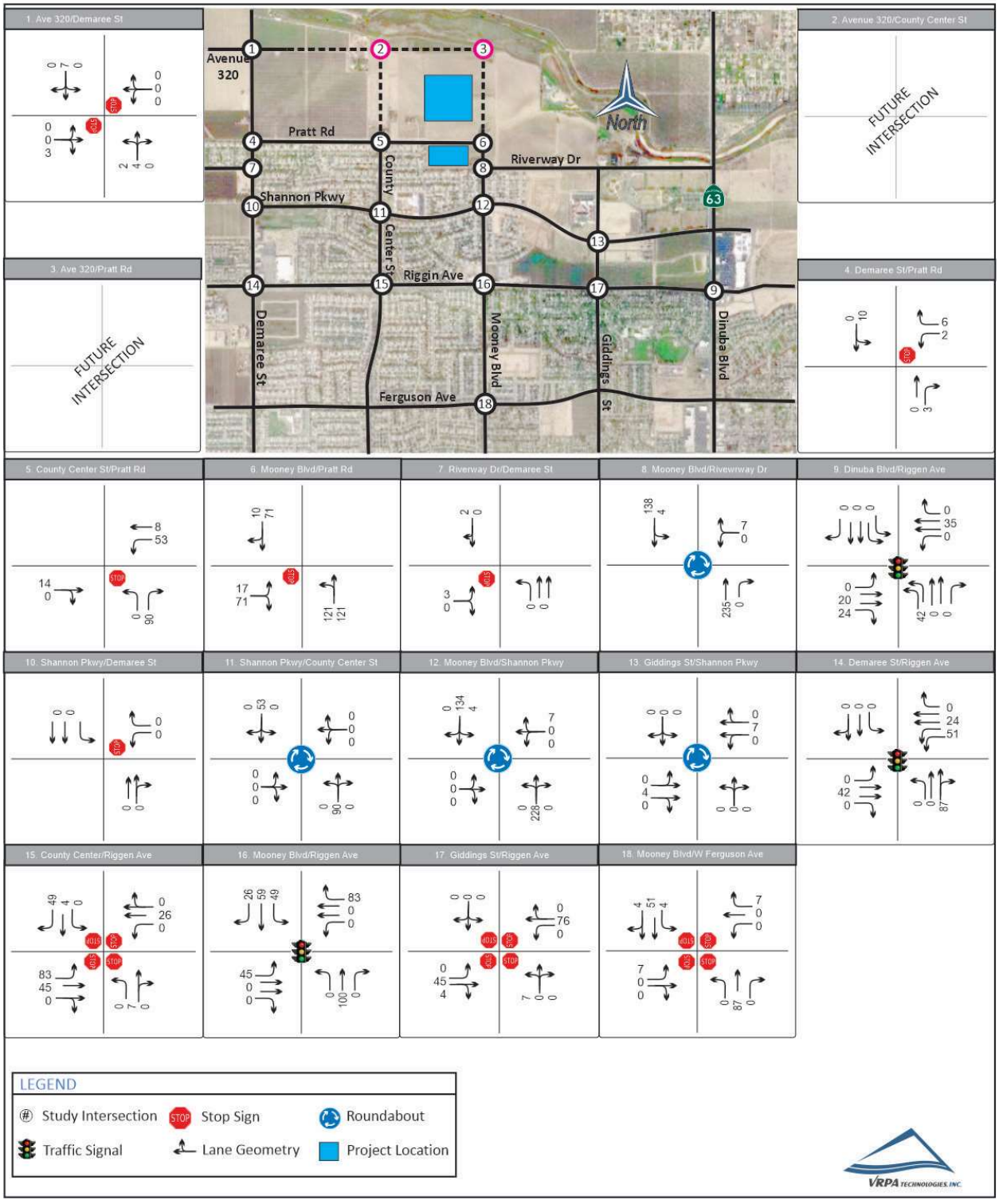
Pratt Family (Gunning) Development
Project AM Peak Hour Traffic (10/20-Year Horizon)

Figure 3-2b



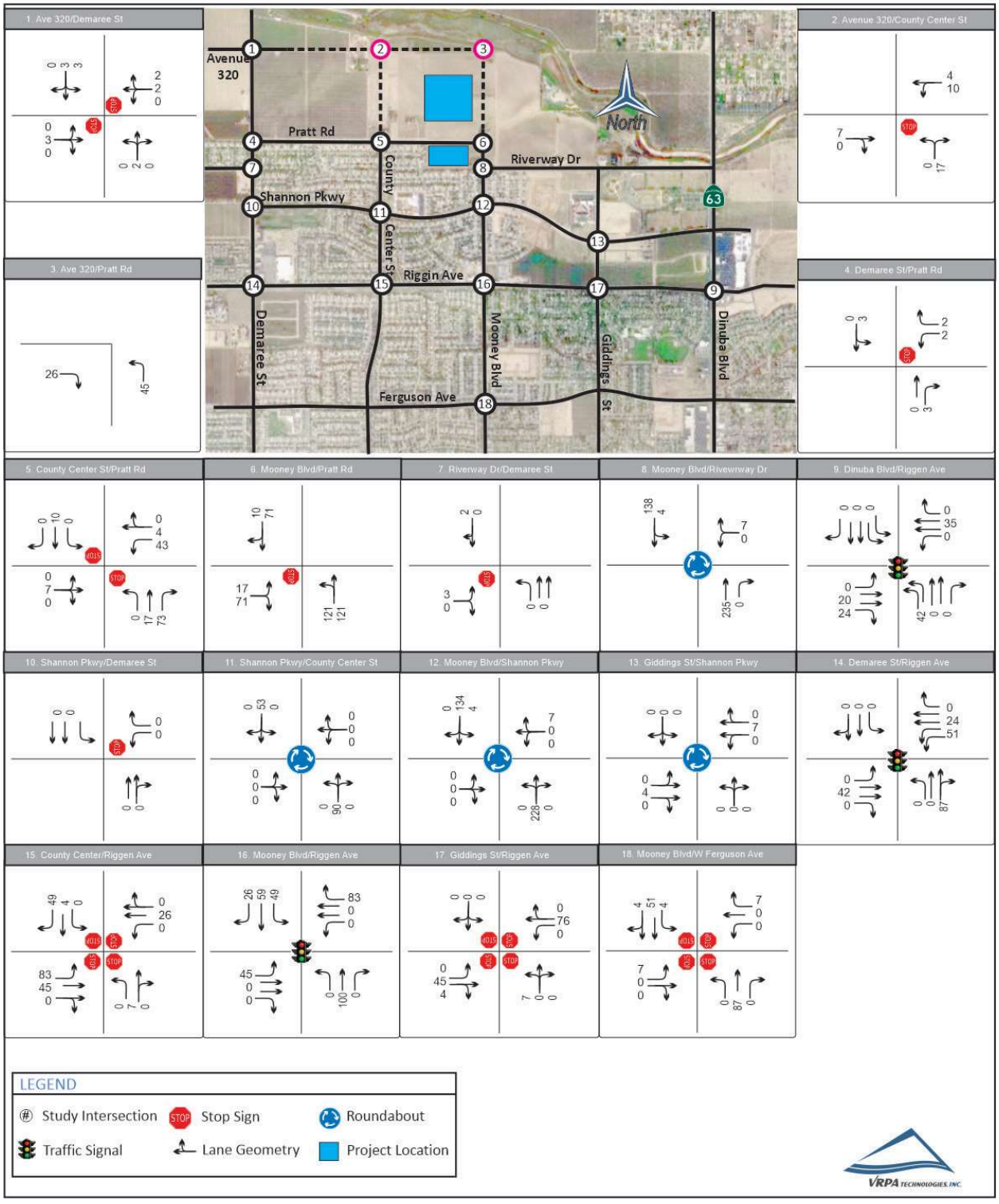
Pratt Family (Gunning) Development
Project PM Peak Hour Traffic (Opening Year/5-Year Horizon)

Figure 3-3a



Pratt Family (Gunning) Development
Project PM Peak Hour Traffic (10/20-Year Horizon)

Figure 3-3b



Pratt Family (Gunning) Development **Figure 3-4**
Approved/Pending Project Location

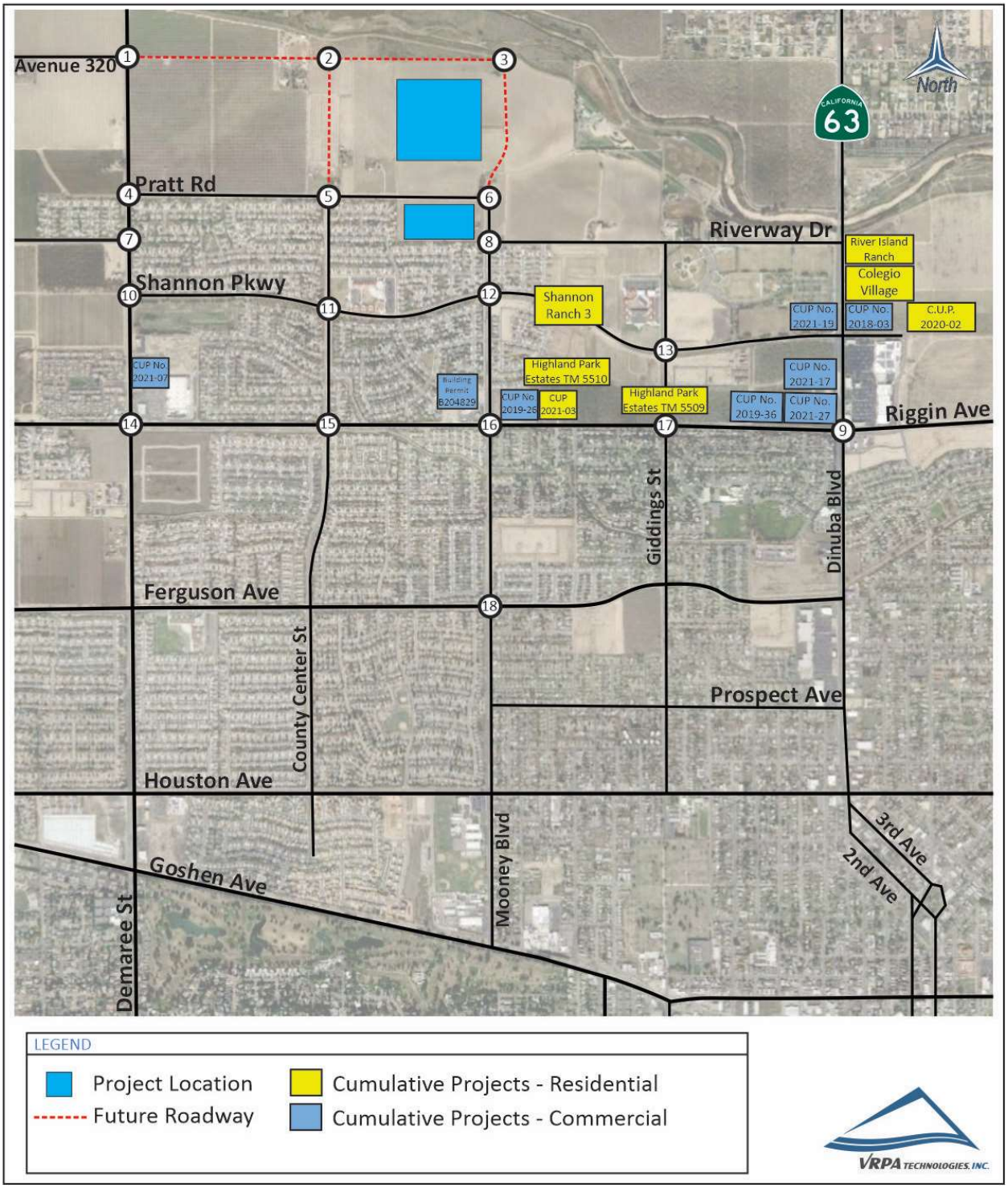


Table 3-2
Approved/Pending Project Trip Generation

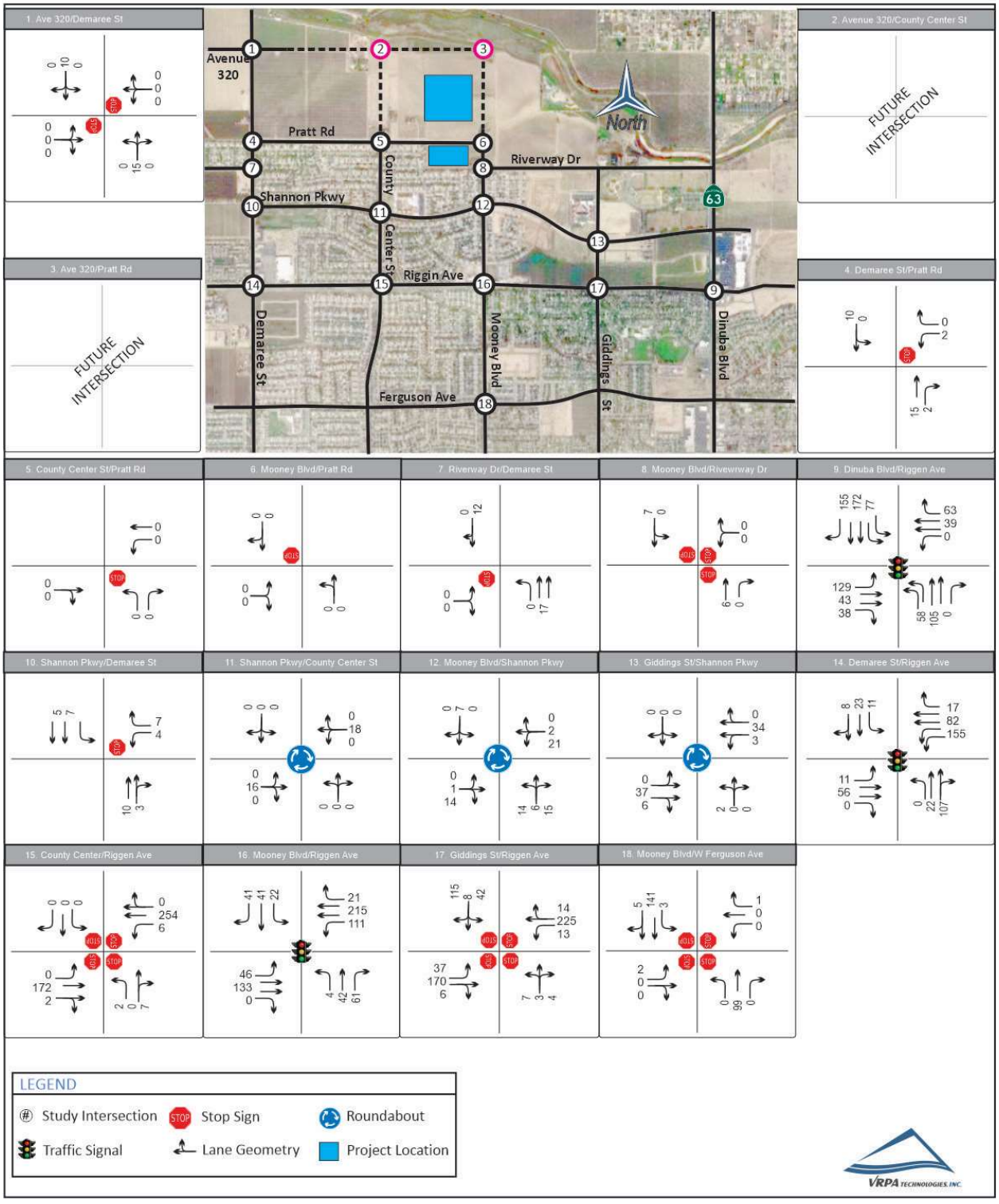
PROJECT NAME	LAND USE	Quantity	DAILY TRIP ENDS (ADT)		WEEKDAY AM PEAK HOUR				WEEKDAY PM PEAK HOUR			
			RATE	VOLUME	RATE	VOLUME			RATE	VOLUME		
						IN	OUT	TOTAL		IN	OUT	TOTAL
Shannon Ranch 3 Tentative Map 5506	Single Family Residential (210)	30 D.U.	9.44	283	0.74	5	17	22	0.99	19	11	30
River Island Ranch Tentative Map 5569	Single Family Residential (210)	136 D.U.	9.44	1,284	0.74	25	76	101	0.99	85	50	135
Highland Park Estates Tentative Map 5509	Single Family Residential (210)	223 D.U.	9.44	2,105	0.74	41	124	165	0.99	139	82	221
Highland Park Estates Tentative Map 5510	Single Family Residential (210)	54 D.U.	9.44	510	0.74	10	30	40	0.99	33	20	53
C.U.P. 2021-03 (4 Duplexes)	Single Family Residential (210)	8 D.U.	9.44	76	0.74	1	5	6	0.99	5	3	8
Colegio Village	Multi-Family Residential (220)	252 D.U.	7.32	1,845	0.46	28	88	116	0.56	89	52	141
	100-Bed Shelter (231)	100 D.U.	3.44	344	0.30	8	22	30	0.36	25	11	36
C.U.P. 2020-02	Multi-Family Residential (220)	216 D.U.	7.32	1,581	0.46	24	75	99	0.56	76	45	121
C.U.P. 2018-03	Gas-Station w/ Conv. Store (945)	12 Fueling Stations	205.36	2,464	12.47	76	74	150	13.99	86	82	168
	QSR w/ Drive-Thru (934)	2.739 ksf	470.95	1,290	40.19	56	54	110	32.67	47	43	90
	QSR w/ Drive-Thru (935)	1.400 ksf	459.20	643	33.76	22	25	47	42.65	30	30	60
	Car Wash [1] (948)	4.400 ksf	--	620	8.98	20	20	40	14.20	31	31	62
	WITH INTERNAL TRIP REDUCTION (5%)			**4,766**		**165**	**164**	**330**		**184**	**177**	**361**
C.U.P. 2021-19	Mini-Storage (151)	74.401 ksf	1.51	112	0.10	4	3	7	0.17	6	7	13
C.U.P. 2019-36 & C.U.P. 2021-17	In-N-Out [2] (934)	3.900 ksf	470.95	1,837	--	0	0	0	32.67	66	61	127
	El Pollo Loco (934)	2.600 ksf	470.95	1,224	--	0	0	0	32.67	44	41	85
	Tommy's Car Wash [1] (948)	5.215 ksf	--	740	8.98	24	23	47	14.20	37	37	74
C.U.P. 2021-27	Retail Use (820)	60.000 ksf	37.75	2,265	0.94	35	21	56	3.81	110	119	229
	QSR w/ Drive-Thru (934)	3.000 ksf	470.95	1,413	40.19	61	60	121	32.67	51	47	98
	Gas-Station w/ Conv. Store (945)	12 Fueling Stations	205.36	2,464	12.47	76	74	150	13.99	86	82	168
	WITH INTERNAL TRIP REDUCTION (5%)			**5,835**		**163**	**147**	**311**		**235**	**236**	**470**
C.U.P. 2019-26	Starbucks (937)	1.500 ksf	820.38	1,231	88.99	68	65	133	43.38	32	33	65
	Burger King (934)	3.000 ksf	470.95	1,413	40.19	61	60	121	32.67	51	47	98
Building Permit B204829	Commercial (820)	11.800 ksf	37.75	445	0.94	7	4	11	3.81	22	23	45
C.U.P 2021-07	Dutch Bros Coffee (937)	0.950 ksf	820.38	779	88.99	43	42	85	43.38	20	21	41
TOTAL TRIP GENERATION				**26,410**		**678**	**946**	**1623**		**1168**	**956**	**2124**

Source: Generation factors from ITE Trip Generation Manual, 10th Edition.
Trip ends are one-way traffic movements, entering or leaving.
The numbers in parenthesis are ITE land use codes.

1: Land Use 948 does not include AM Peak Hour Rate. AM Peak Hour Rate is based upon ratio of AM and PM peak hour rate for Land Use 949 (Car Wash and Detail Center). Daily Trips estimated to be 10 times PM peak hour trips.
2: In-N-Out was completed in September 2021. Existing traffic counts were conducted prior to the completion of In-N-Out completion.

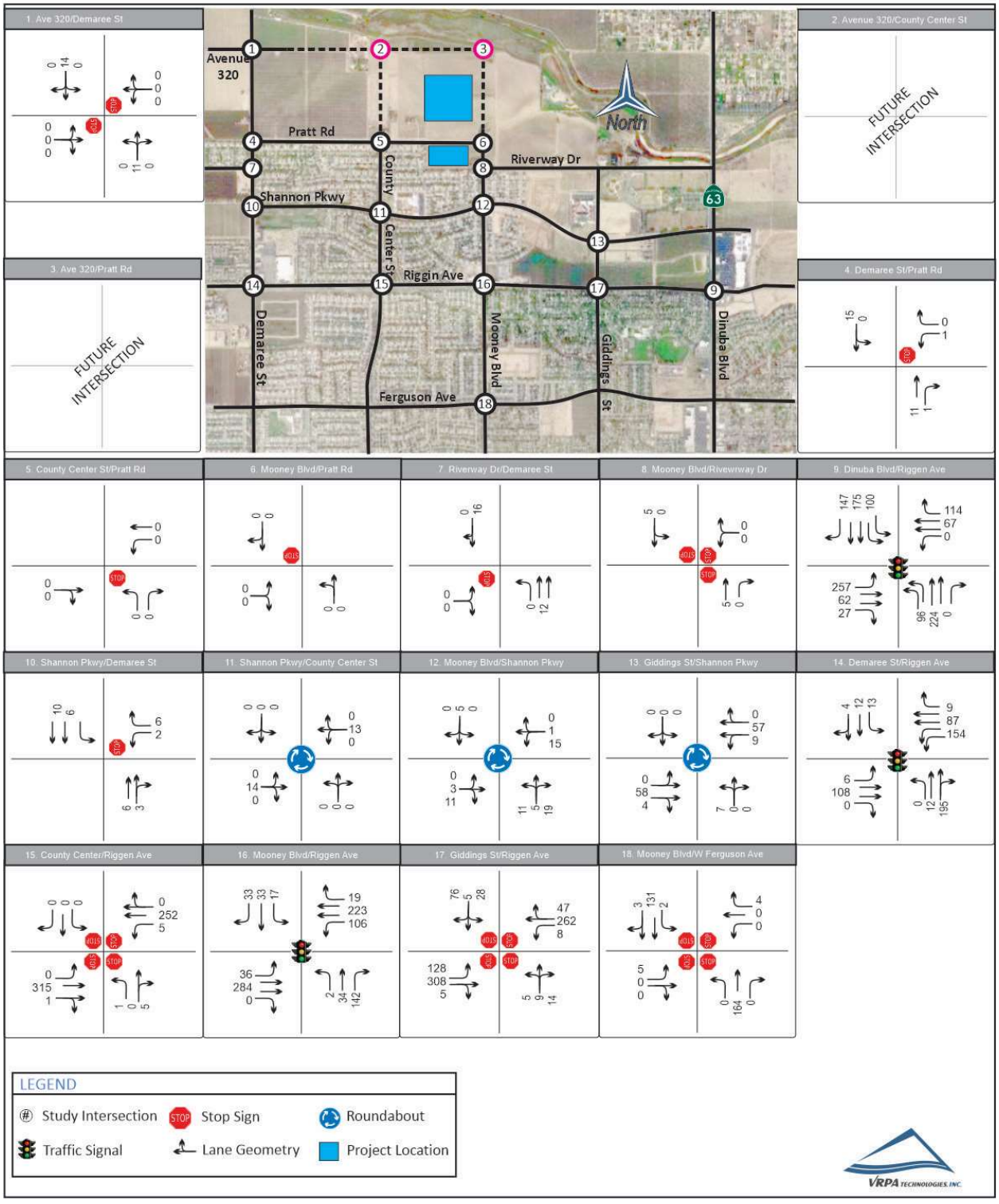
Pratt Family (Gunning) Development
Approved-Pending Project AM Peak Hour Traffic

Figure 3-5



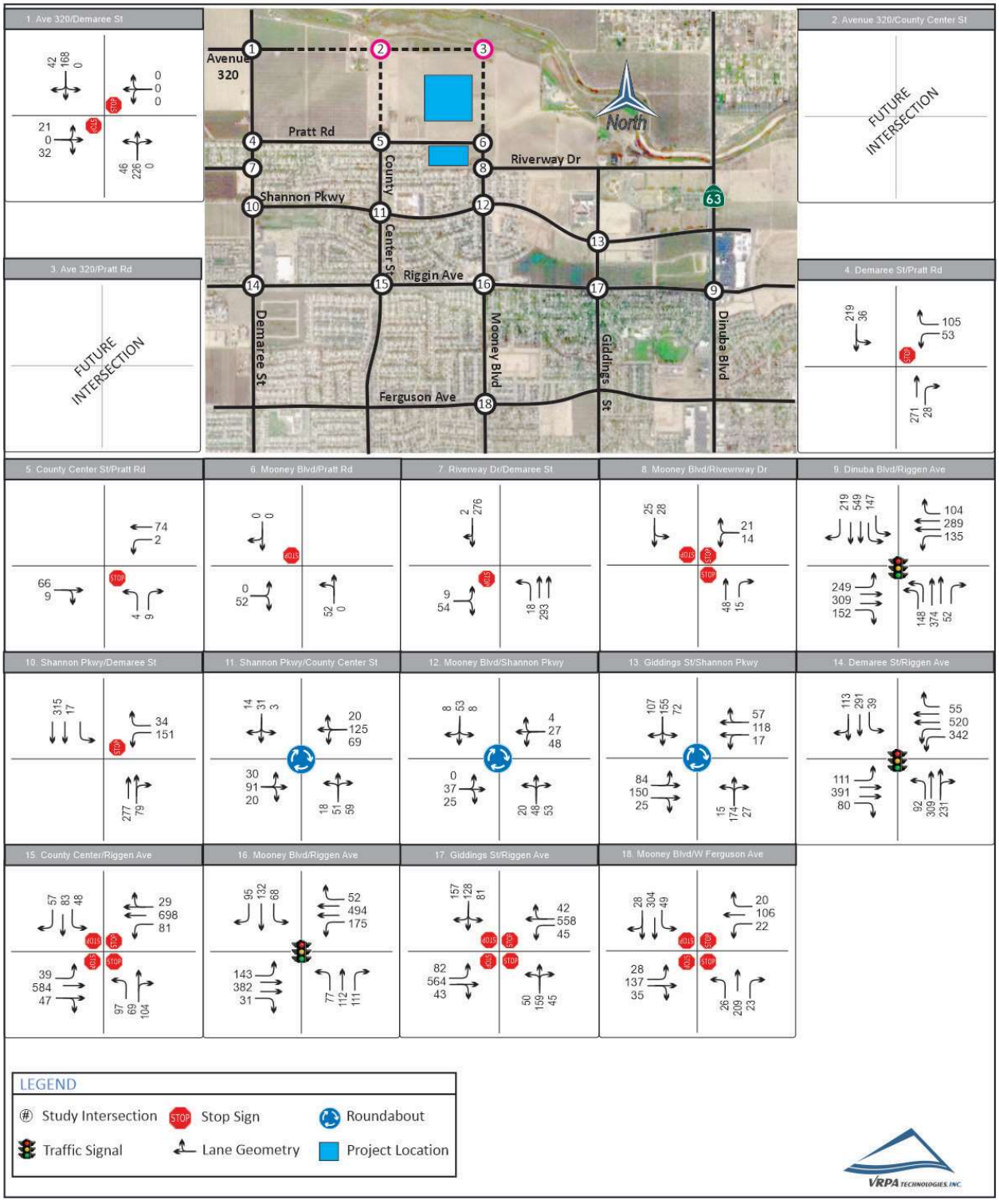
Pratt Family (Gunning) Development
Approved-Pending Project PM Peak Hour Traffic

Figure 3-6



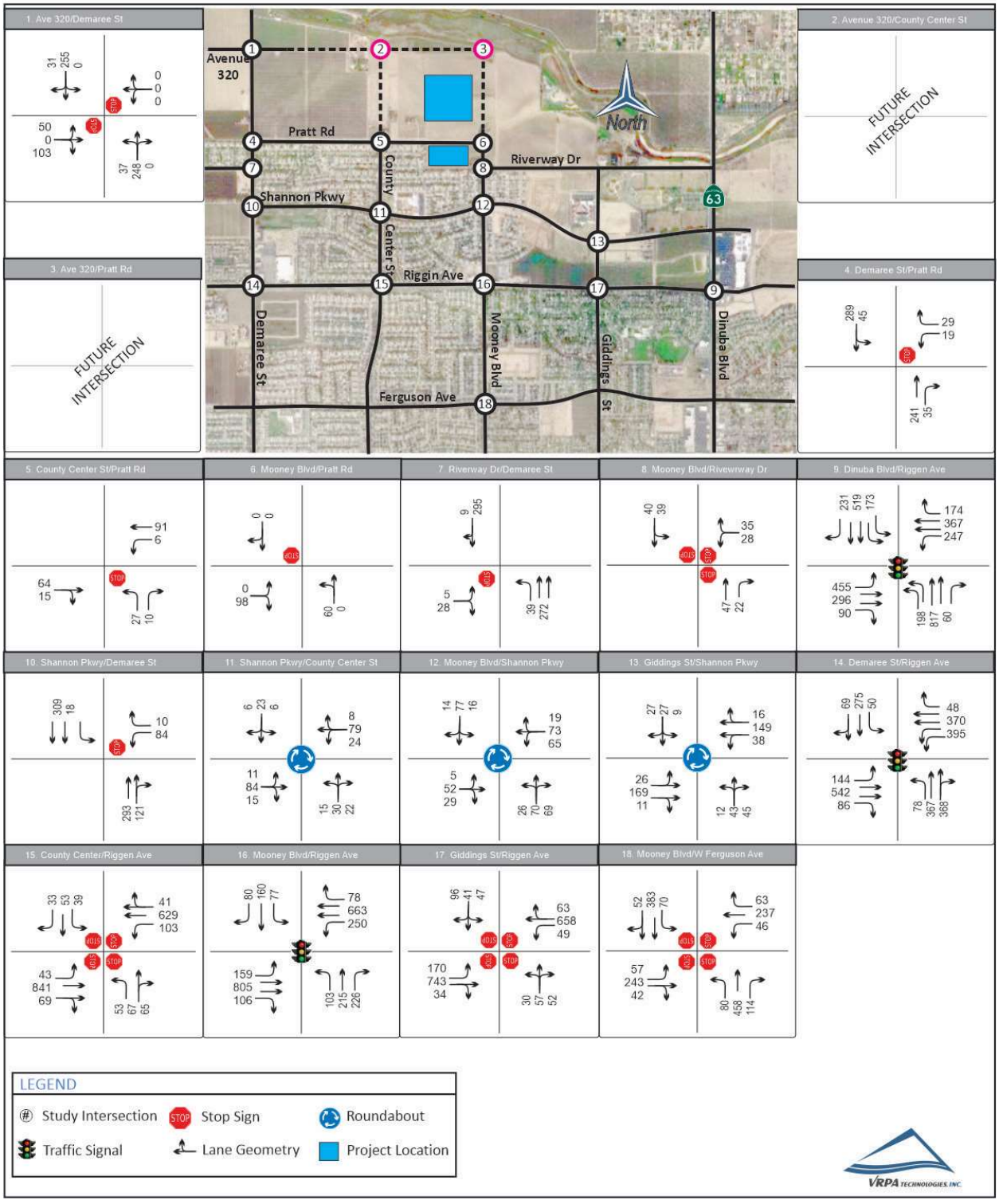
Pratt Family (Gunning) Development
Opening Year Witout Project AM Peak Hour Traffic

Figure 3-7



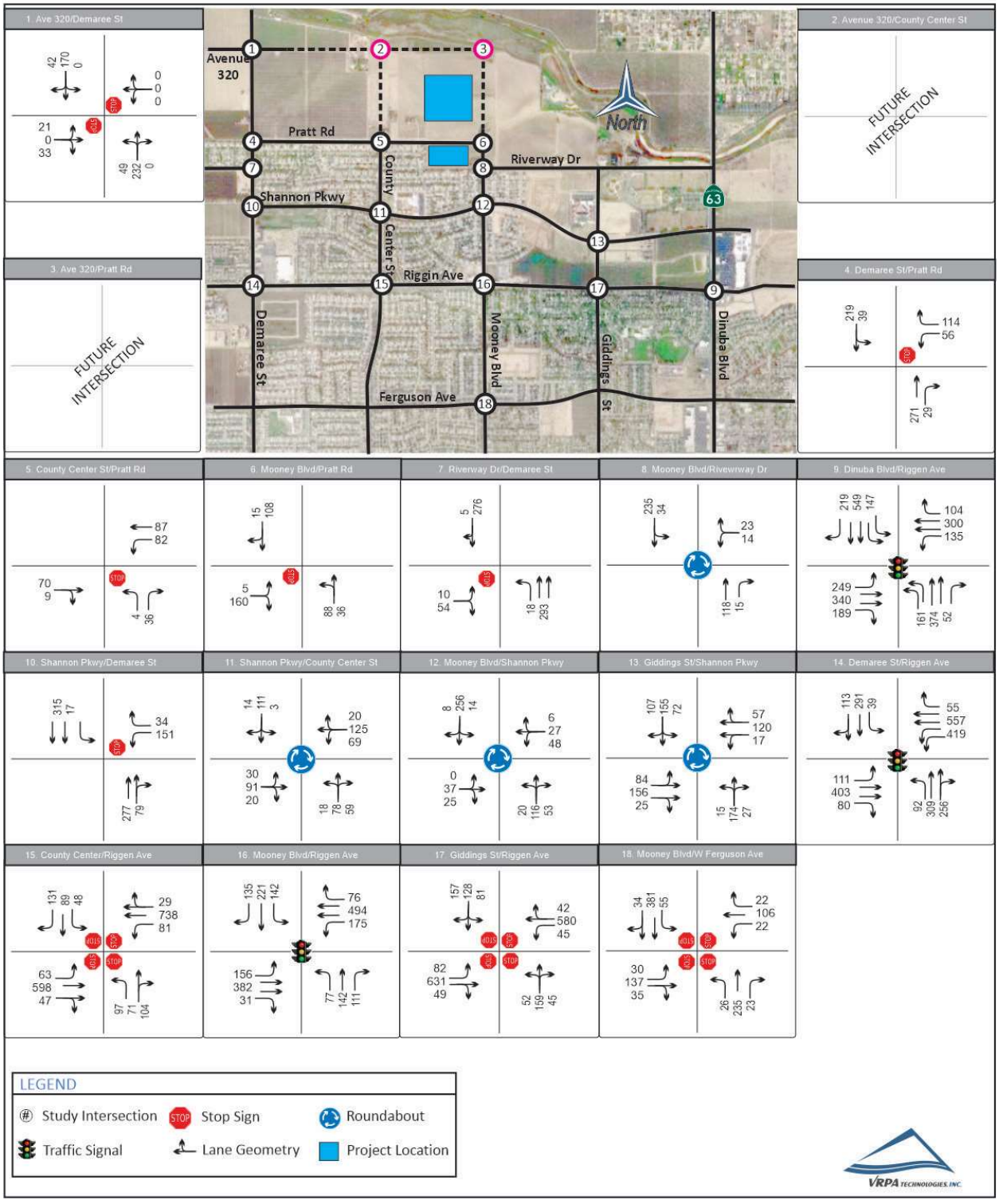
Pratt Family (Gunning) Development
Opening Year Witout Project PM Peak Hour Traffic

Figure 3-8



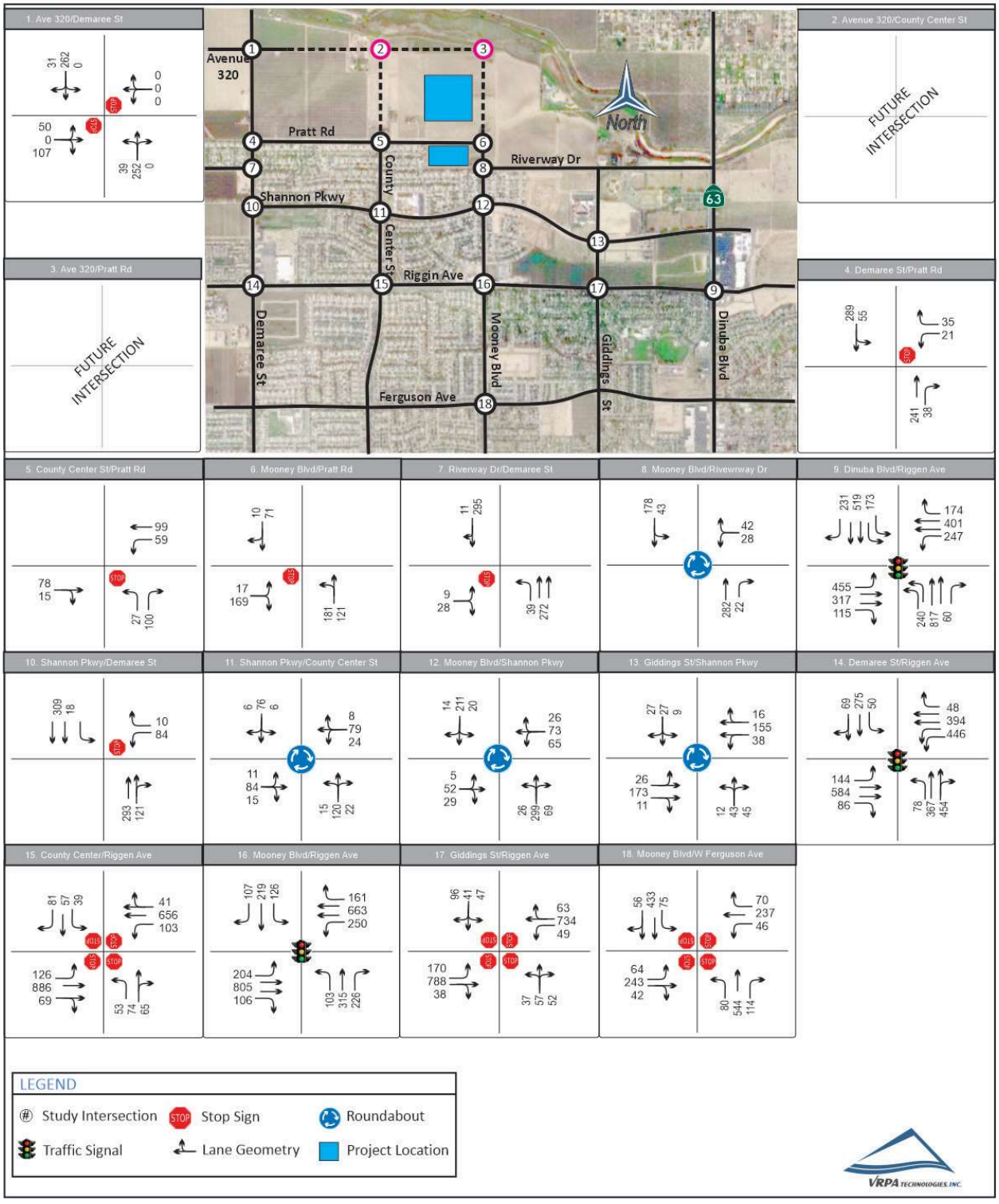
Pratt Family (Gunning) Development
Opening Year Plus Project AM Peak Hour Traffic

Figure 3-9



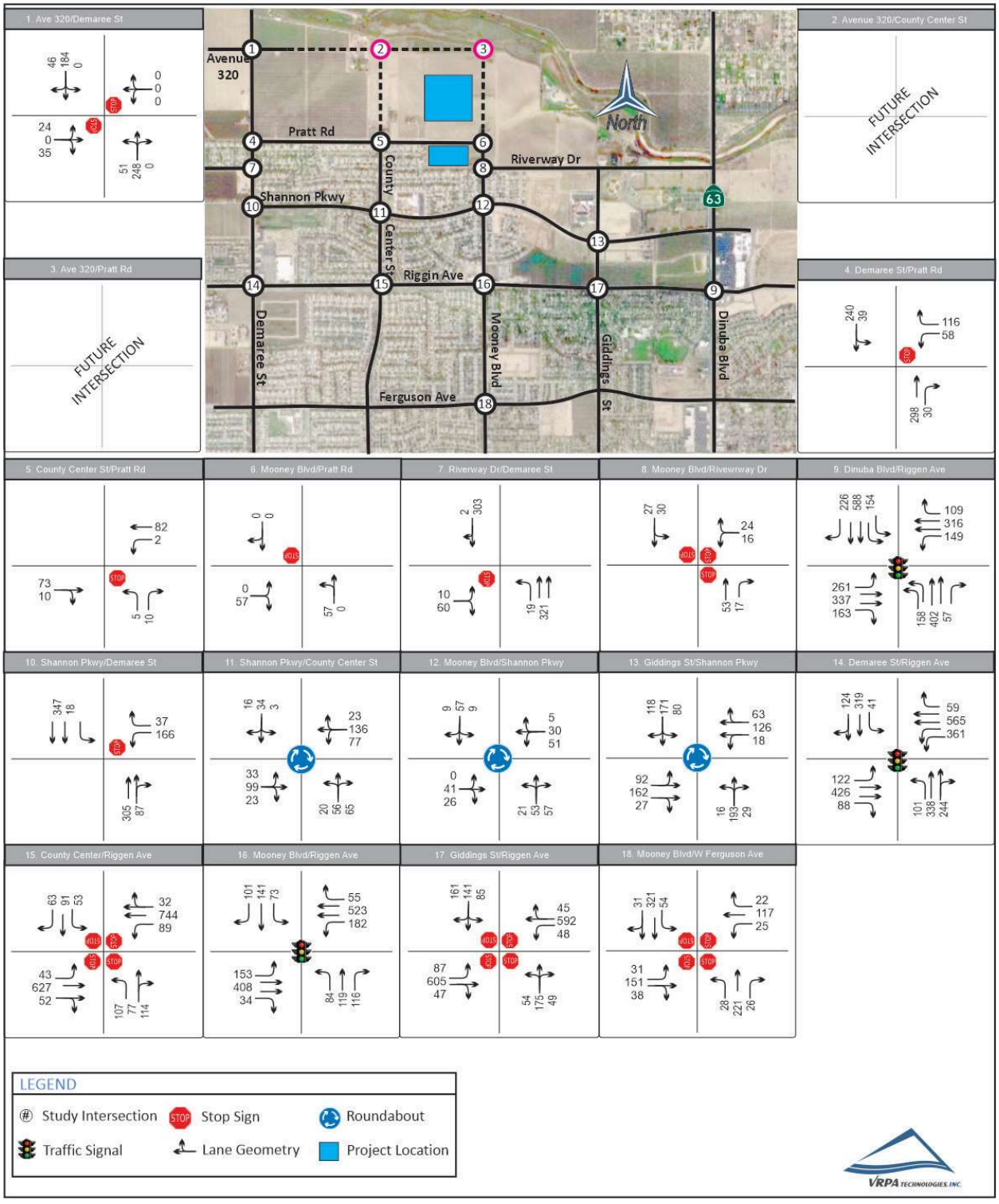
Pratt Family (Gunning) Development
Opening Year Plus Project PM Peak Hour Traffic

Figure 3-10



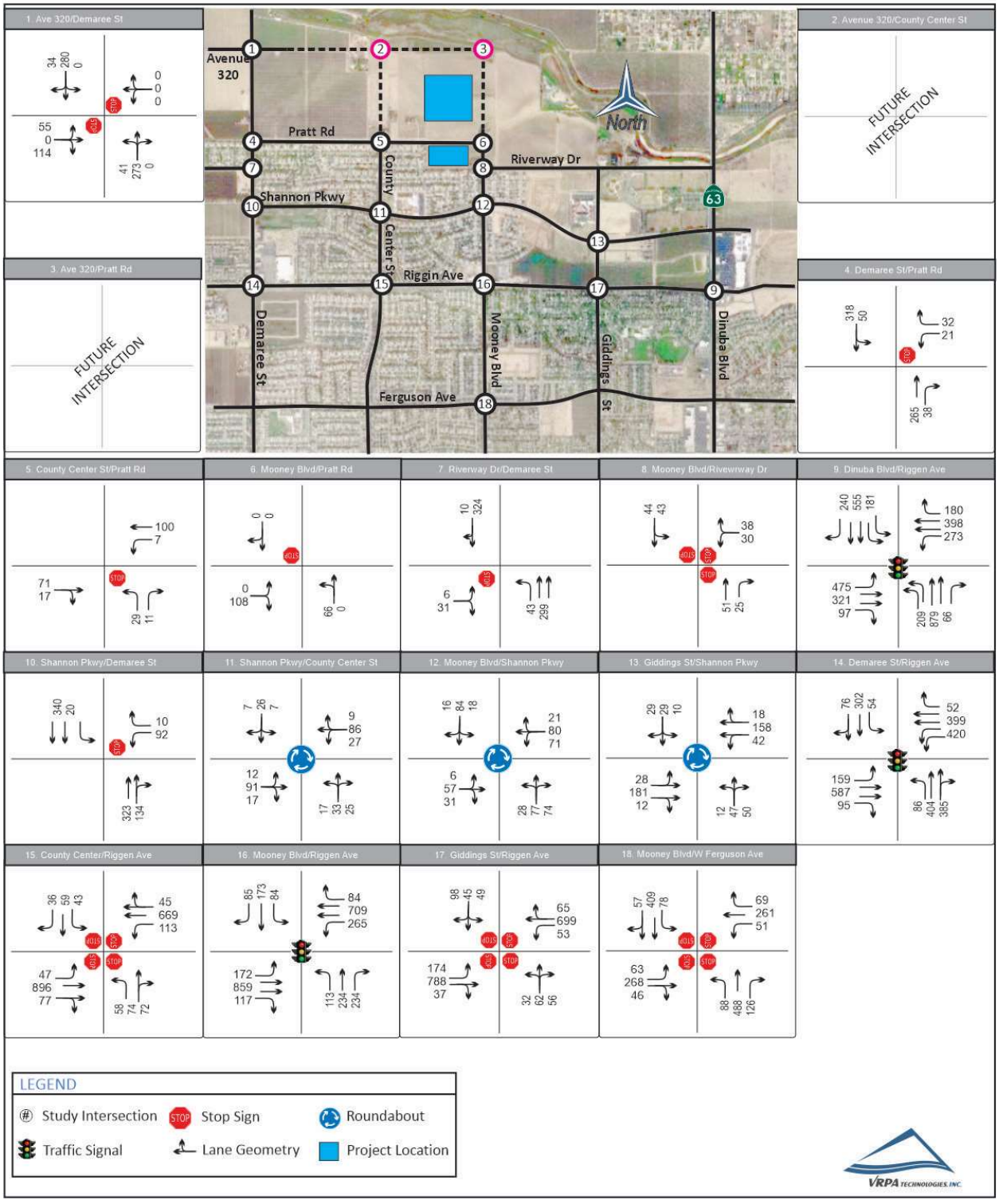
Pratt Family (Gunning) Development
5-Year Horizon Witout Project AM Peak Hour Traffic

Figure 3-11



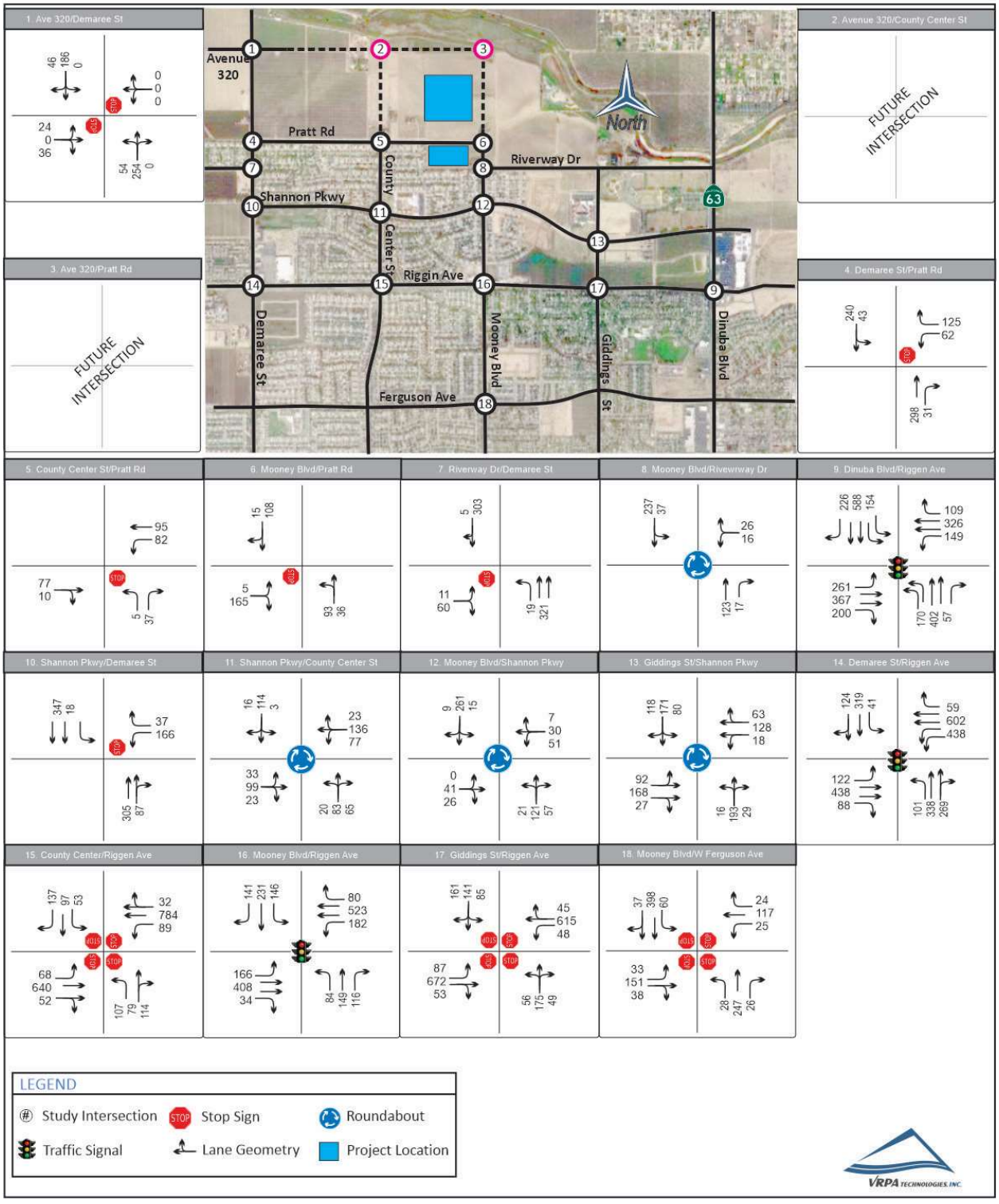
Pratt Family (Gunning) Development
5-Year Horizon Witout Project PM Peak Hour Traffic

Figure 3-12



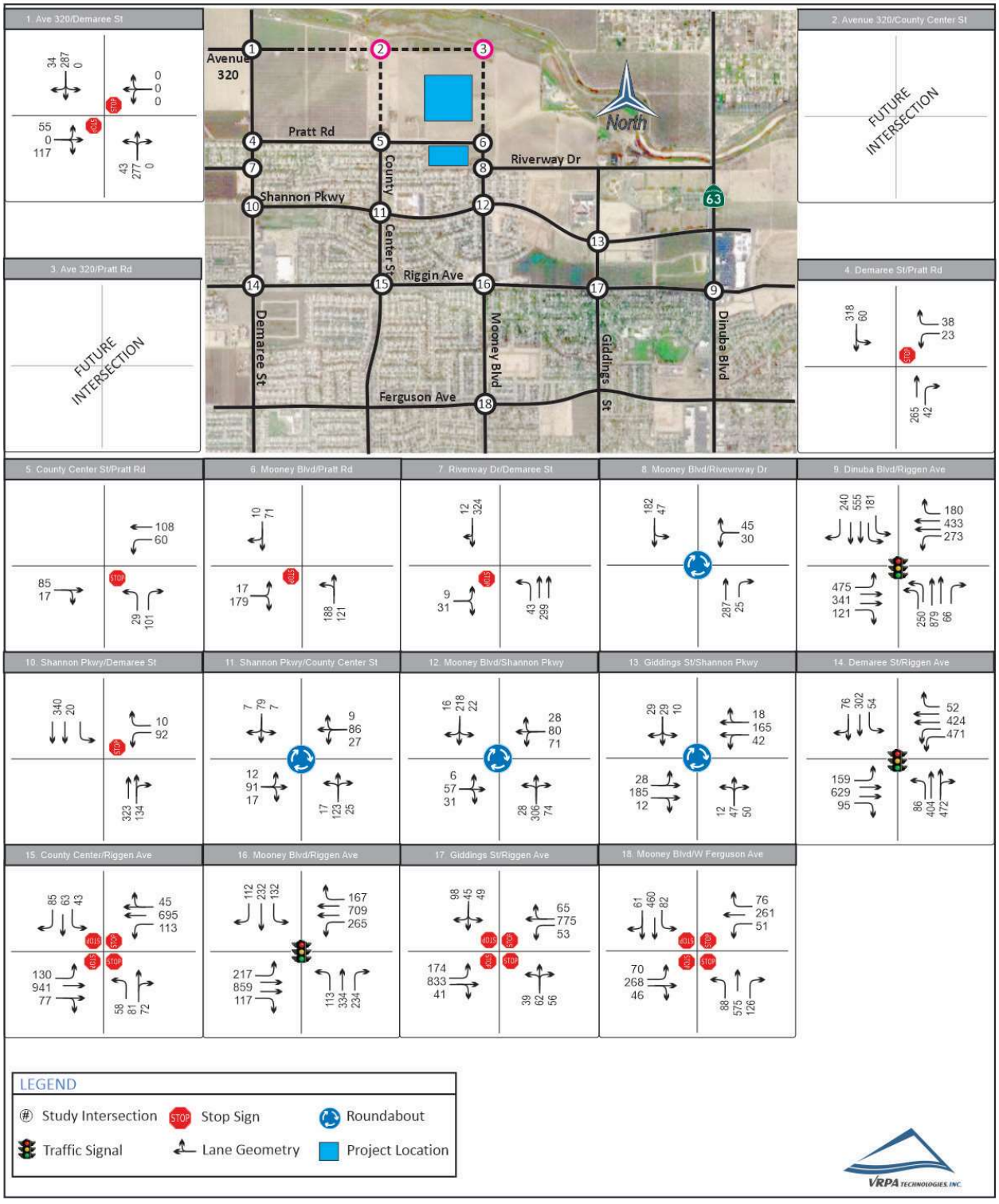
Pratt Family (Gunning) Development
5-Year Horizon Plus Project AM Peak Hour Traffic

Figure 3-13



Pratt Family (Gunning) Development
5-Year Horizon Plus Project PM Peak Hour Traffic

Figure 3-14



3.7 10-Year and 20-Year Horizon Traffic Conditions

The impacts of the Project were analyzed considering future traffic conditions in the year 2032 and 2042. It should be noted that 2042 conditions were only evaluated for the Riggin Avenue and Dinuba Boulevard intersection. The levels of traffic expected in 2032 and 2042 relate to the cumulative effect of traffic increases resulting from the implementation of the General Plans of local agencies, including the City of Visalia and Tulare County. Traffic conditions without the Project in the Year 2032 and 2042 were estimated by applying a growth rate of 2% per year to the existing traffic volumes. A comparison of the TCAG base year and future year travel model showed that the growth in the study area is approximately 2% per year. The resulting traffic for the 10-Year and 20-Year conditions is shown in Figures 3-15, 3-16, 3-17, 3-18, and 3-19.

3.8 Impacts

3.8.1 *Intersection Capacity Analysis*

Table 3-3 provides the intersection level of service analysis for the study intersections considering the study scenarios discussed above. Potential mitigation measures are discussed in Chapter 4 of this report. Results of the analysis show that the Project will contribute to an unacceptable LOS at three (3) of the study intersections when comparing the 10-Year Horizon scenarios.

3.8.2 *Queuing Analysis*

Table 3-4 provides a queue length summary for left and right turn lanes at study intersections. Queuing analysis for City of Visalia intersections was completed using the queuing formulas presented in the City of Visalia "Procedures For Traffic Impact Analysis (TIA)", dated March 2021. Queuing analysis for Caltrans intersections was completed using Index 405.2 of the Highway Design Manual (HDM). The queue presented in Table 3-4 represents the approximate queue lengths for the respective lane movements. Results of the queuing analysis show that several movements exceed the existing queue lane storage lengths.

3.9 Project Access

As noted previously, vehicular access to the site would be provided by Pratt Road, Mooney Boulevard, and Avenue 320. The extension of these roadways would be constructed to City standards and would be dedicated as public right of way. There are two (2) driveways located along Avenue 320 and Mooney Boulevard, and four (4) driveways located along Pratt Road. Figures 3-20 and 3-21 show AM and PM peak hour trips at Project driveways. Table 3-5 provides the intersection level of service analysis for Project driveways considering the 10-Year Horizon scenario. Results of the analysis show that all of the Project intersections will operate below the City of Visalia's minimum level of service criteria.

The project driveways are proposed to be gated. In order to function properly, gated driveways need to have sufficient storage space to minimize queuing of vehicles that would extend into the roadway system. The following analysis applies to this situation:

- ✓ Each gated driveway is proposed to have sufficient space for one queued vehicle.
- ✓ Based on Figures 3-20 and 3-21, the maximum number of vehicles entering a gated driveway is 63 vehicles per hour. This occurs on the north side of Access Driveway G in the PM peak hour.
- ✓ The processing time for vehicles at gated driveways was conservatively estimated at 10 seconds per vehicle or 360 vehicles per hour.
- ✓ The design standard selected for the gated driveways was the accommodation of the 95th percentile queue. In other words, the expectation is that a queue will occur no more than 5% of the time. This is a commonly used value in traffic engineering queuing analysis.
- ✓ Equation 20-68 of the Highway Capacity Manual was used to estimate the 95th percentile queue. Given the values described above, the 95th percentile queue is expected to be 0.68 vehicles. Therefore, the queue storage area of one vehicle will accommodate traffic demand more than 95% of the time.

Based on the analysis described above, the queuing area at the proposed gates is considered to be adequate.

3.10 Mooney Boulevard Alignment and Mooney Boulevard/Riverway Drive Roundabout

The segment of Mooney Boulevard between Riverway Drive and Avenue 320 is identified as an 84' Collector per current City standards. The project proposes to build Mooney Boulevard to this standard and shift the roadway slightly to the east. In addition, the project proposes to build a roundabout at the Mooney Boulevard/Riverway Drive intersection. The recommended design concept for the roundabout is shown in Figure 3-22. The following additional recommendations apply to this proposed design concept:

- ✓ The proposed design concept has been analyzed in the traffic analysis and no level of service deficiencies are indicate in any of the future scenarios.
- ✓ A detailed design concept including a proposed cross-section for this segment of Mooney Boulevard will need to be submitted and approved by the City of Visalia prior to approval of the environmental document.

- ✓ Design details such as drainage and coordination with future development east of Mooney Boulevard will need to be addressed.

- ✓ A detailed design for the Mooney Boulevard/Riverway Drive roundabout will need to be submitted and approved by the City of Visalia at the appropriate point in the approval process. The recommended lane geometry for the Mooney Boulevard/Riverway Drive roundabout is as follows:

  - Northbound: 1 Through/Right (a separate right turn lane could be added if needed to support the transition to the cross-section of Mooney Boulevard to the south)

  - Southbound: 1 Through/Right

  - Westbound: 1 Through/Right

- ✓ The design of the northbound Mooney Drive approach to the Mooney Boulevard/Riverway Drive roundabout will need to include a transition to the cross-section of Mooney Boulevard to the south. Roadway striping changes and/or geometric design changes will be needed in the area between Glendale Avenue and Riverway Drive.

3.11 VMT Analysis

The VMT analysis was conducted according to the City of Visalia's VMT Thresholds and Implementation Guidelines (City of Visalia 2021).

For residential projects, VMT analysis is conducted by comparing the project's expected VMT/capita to regional averages. The Project's VMT impacts are considered to be less than significant if the Project's VMT per capita is 16% below regional averages (or lower).

The City of Visalia's VMT Thresholds and Implementation Guidelines provide the following documentation for the selection of a significance threshold of VMT per capita 16% below the regional average:

"CARB establishes GHG targets for each of the 18 MPOs in the State, reviews the SCSs, and makes a determination of whether the SCSs would achieve GHG reduction targets if implemented. In the spring of 2018, CARB adopted new GHG targets for all the 18 MPOs in the State based on the 2017 Scoping Plan and other new data as illustrated in Figure 9. CARB established a 16 percent GHG reduction target for 2035 for the Tulare region. The State recognizes that Tulare County's contribution to the aggregate 15 percent statewide GHG emission reduction is 16 percent. Other regions may achieve lower reductions to achieve the aggregate statewide goal.4 As such, reduction in GHG directly corresponds to reduction in VMT. In order to reach the statewide GHG reduction goal of 15 percent, the Tulare region must reduce GHG by 16 percent. The method of reducing GHG by 16 percent is to reduce VMT by 16 percent as well.

Therefore, the City has established a threshold for land use developments, specifically residential and office, of exceeding 16 percent below the existing regional VMT per capita or VMT per employee as indicative of a significant environmental impact."

A model run of the Tulare Council of Governments (TCAG) regional travel demand model was used in making this calculation. The results are as follows:

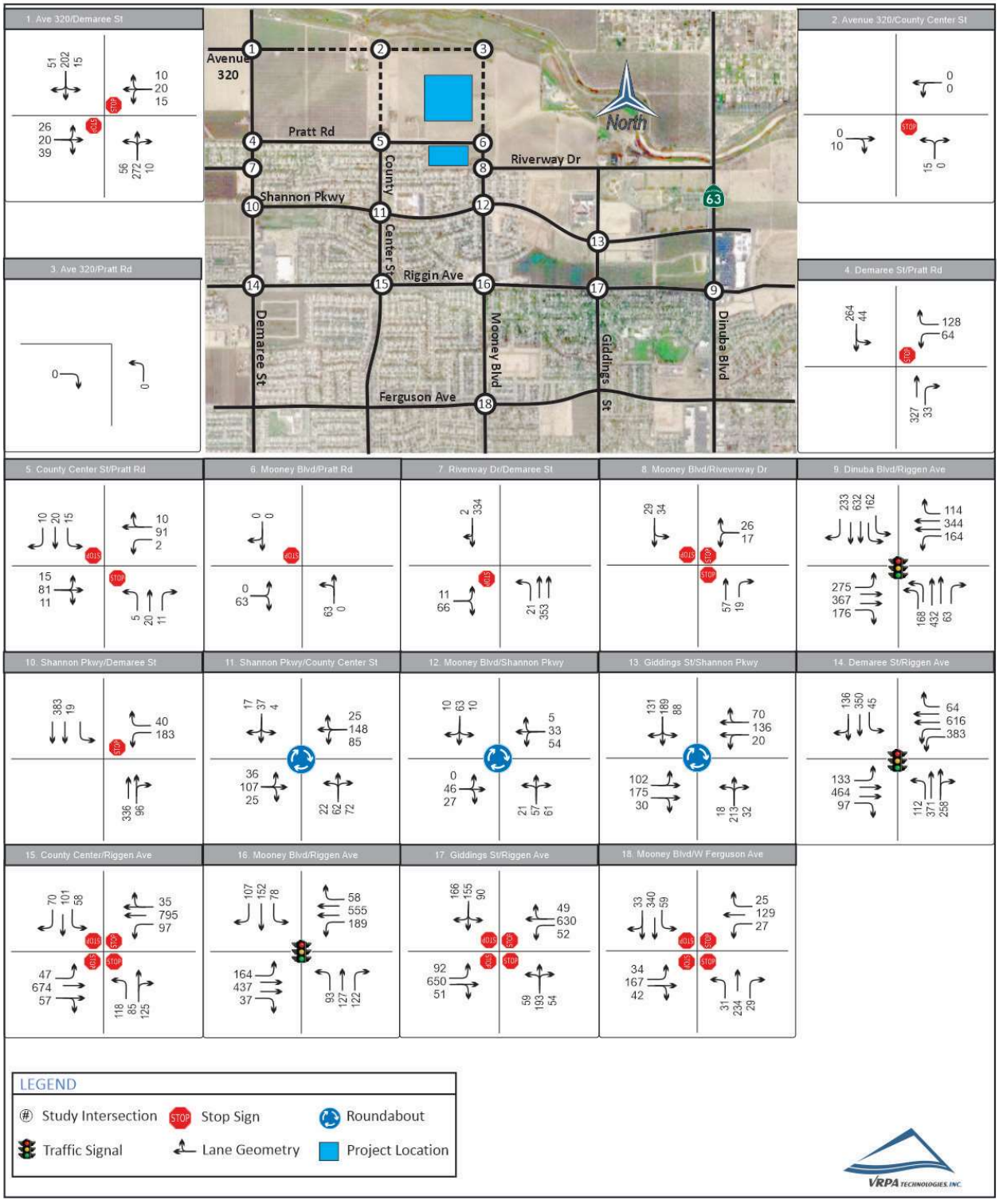
Project VMT/capita: 8.4

Regional VMT/capita: 11.7

The project's VMT/capita is 28.2% less than the regional average. Therefore, the project's VMT impacts are less than significant. A copy of the results of the model run is included in Appendix E.

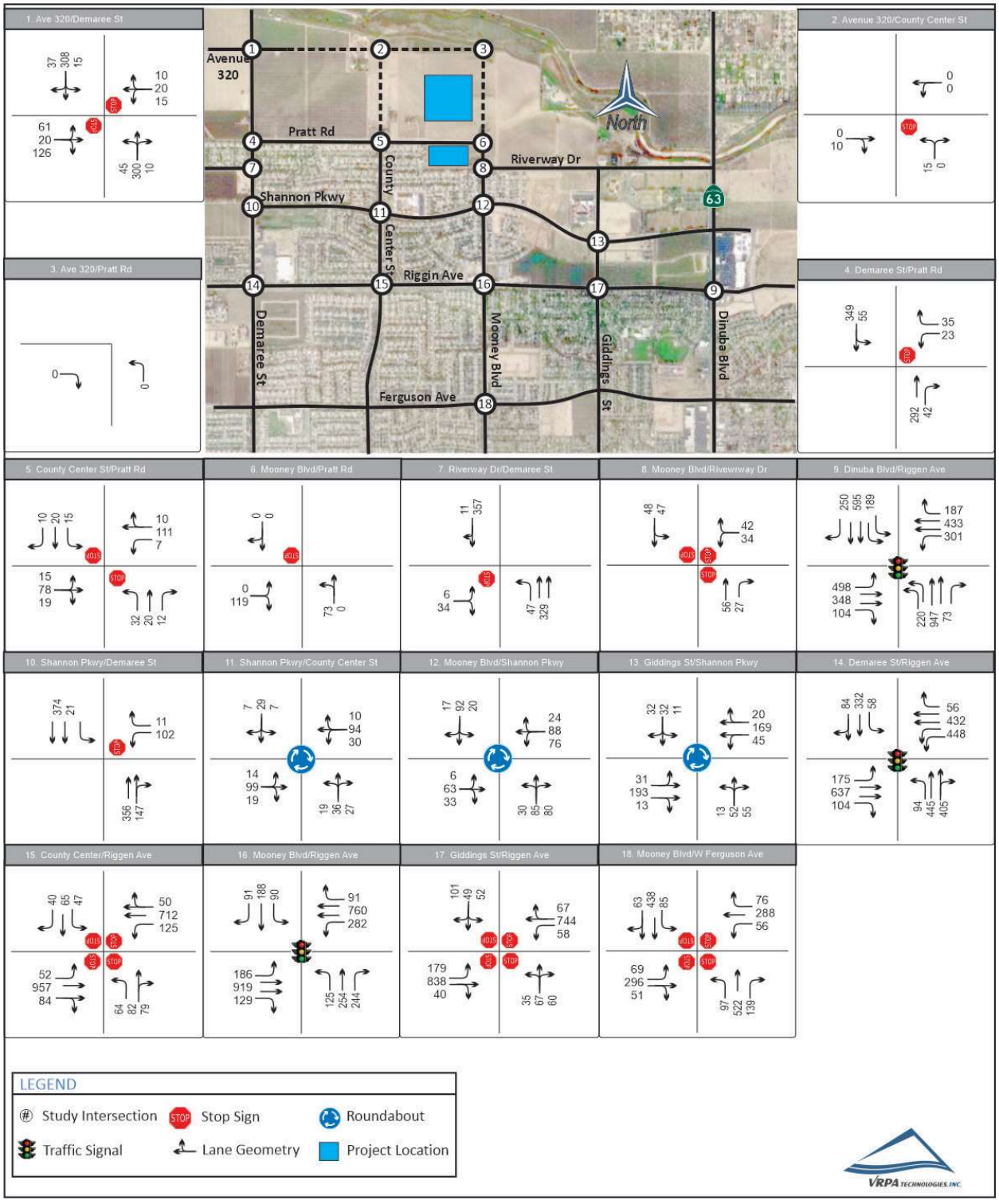
Pratt Family (Gunning) Development
10-Year Horizon Witout Project AM Peak Hour Traffic

Figure 3-15



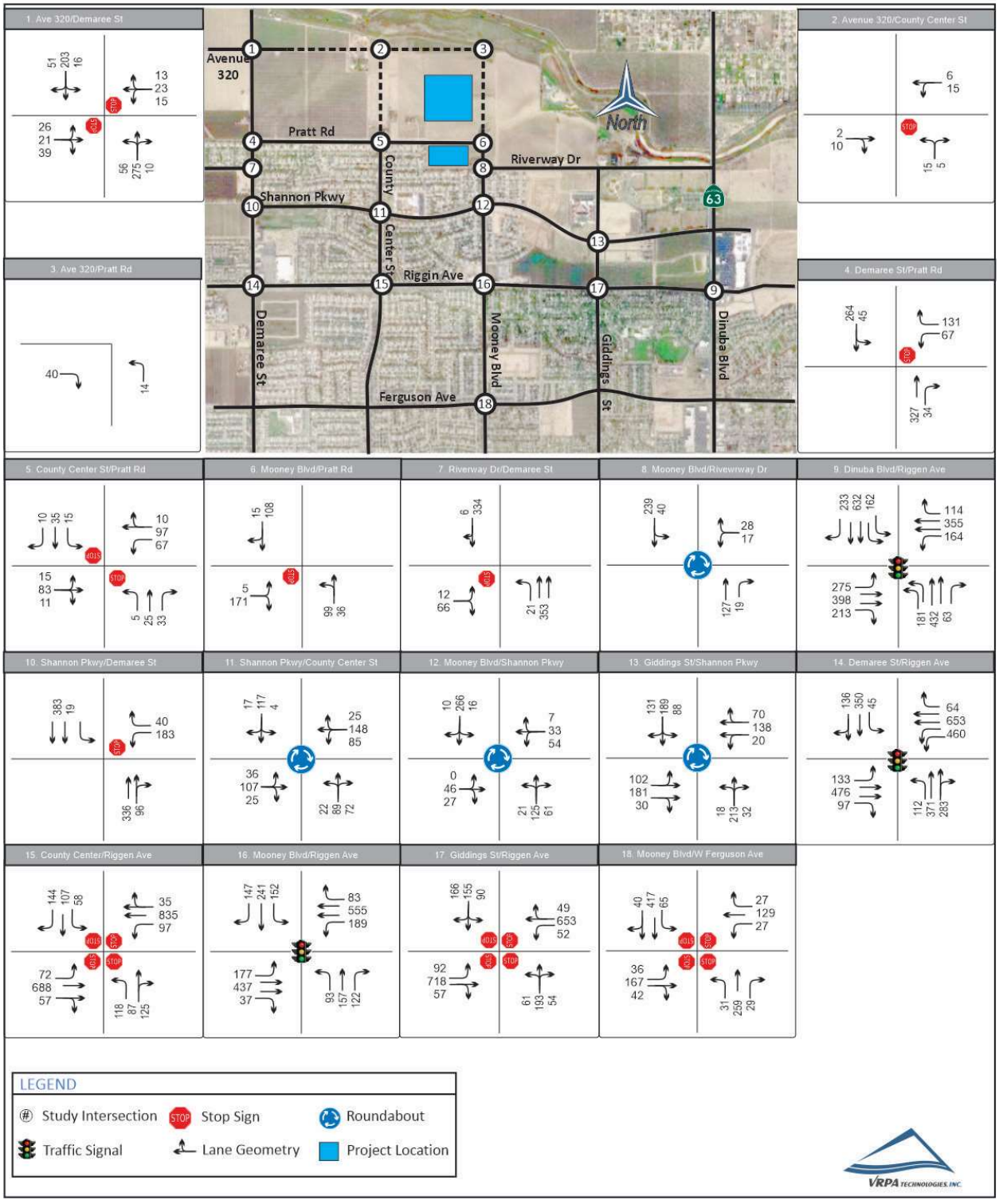
Pratt Family (Gunning) Development
10-Year Horizon Witout Project PM Peak Hour Traffic

Figure 3-16



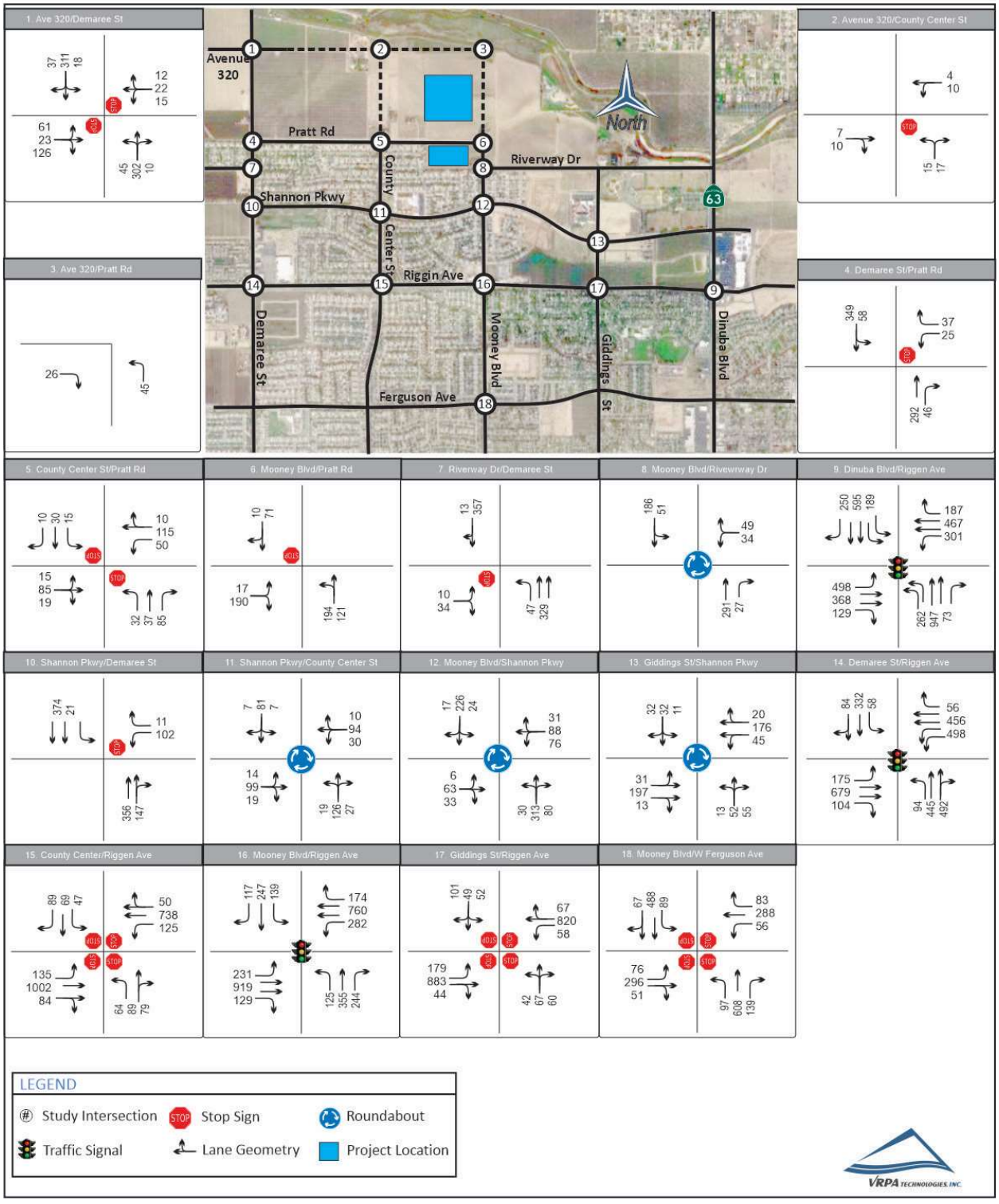
Pratt Family (Gunning) Development
10-Year Horizon Plus Project AM Peak Hour Traffic

Figure 3-17



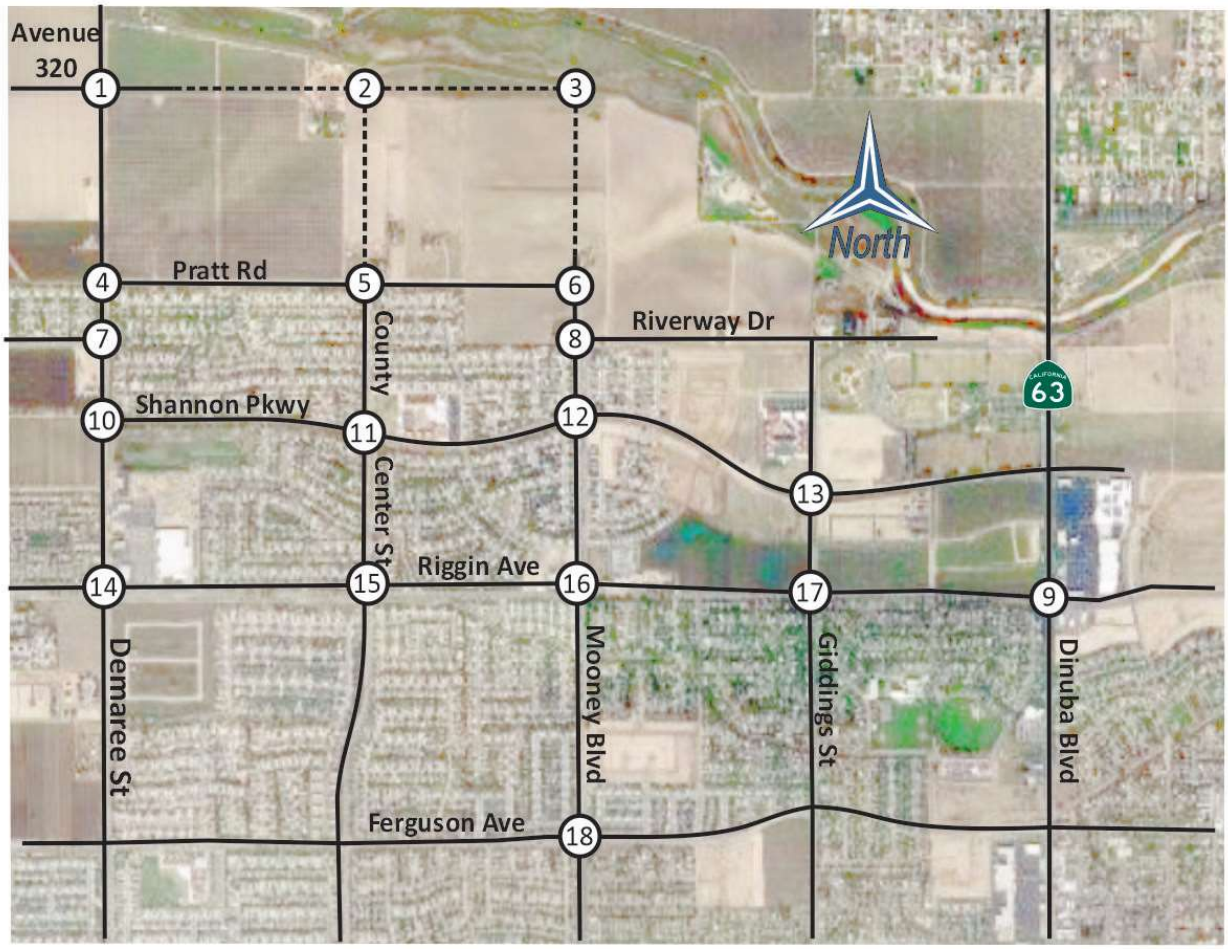
Pratt Family (Gunning) Development
10-Year Horizon Plus Project PM Peak Hour Traffic

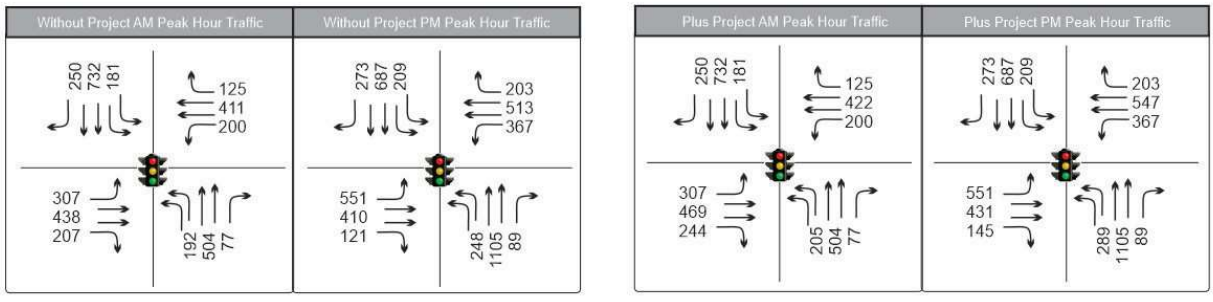
Figure 3-18



Pratt Family (Gunning) Development
20-Year Horizon Peak Hour Traffic

Figure 3-19





LEGEND

# Study Intersection	xxx AM Peak Hour Trips		
Traffic Signal	Lane Geometry	STOP	Stop Sign

VRPA TECHNOLOGIES, INC.

Table 3-3
Intersection Operations

INTERSECTION	TARGET LOS	PEAK HOUR	OPENING YEAR WITHOUT PROJECT		OPENING YEAR PLUS PROJECT		5-YEAR HORIZON WITHOUT PROJECT		5-YEAR HORIZON PLUS PROJECT		10-YEAR HORIZON WITHOUT PROJECT		10-YEAR HORIZON PLUS PROJECT		20-YEAR HORIZON WITHOUT PROJECT		20-YEAR HORIZON PLUS PROJECT	
			DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
1. Avenue 320 / Demaree Street	D	AM	11.4	B	11.5	B	11.9	B	12.0	B	17.0	C	17.0	C				
		PM	13.7	B	13.9	B	15.0	C	15.2	C	23.1	C	24.7	C				
2. Avenue 320 / County Center Street (Future)	D	AM									8.6	A	8.8	A				
		PM									8.6	A	8.7	A				
3. Avenue 320 / Mooney Boulevard (Future)	D	AM									0.0	A	0.0	A				
		PM									0.0	A	0.0	A				
4. Pratt Road / Demaree Street	D	AM	14.8	B	15.0	C	16.1	C	16.4	C	17.2	C	17.3	C				
		PM	14.9	B	15.4	C	16.1	C	16.7	C	17.1	C	17.3	C				
5. Pratt Road / County Center Street	D	AM	9.4	A	11.1	B	9.5	A	11.2	B	10.7	B	12.8	B				
		PM	9.9	A	11.3	B	10.0	B	11.5	B	11.1	B	13.7	B				
6. Pratt Road / Mooney Boulevard	D	AM	0.0	A	10.3	B	0.0	A	10.4	B	0.0	A	10.0	B				
		PM	0.0	A	11.0	B	0.0	A	11.2	B	0.0	A	10.7	B				
7. Riverway Drive / Demaree Street	D	AM	11.1	B	11.2	B	11.5	B	11.6	B	11.6	B	11.7	B				
		PM	11.0	B	11.4	B	11.5	B	11.9	B	11.6	B	12.0	B				
8. Riverway Drive / Mooney Boulevard	D	AM	7.5	A	4.2	A	7.5	A	4.3	A	7.5	A	4.2	A				
		PM	7.6	A	4.5	A	7.7	A	4.5	A	7.8	A	4.6	A				
9. Riggin Avenue / Dinuba Boulevard (SR-63)	--[1]	AM	28.2	C	28.8	C	29.4	C	30.0	C	30.8	C	31.5	C	35.0	D	35.6	D
		PM	45.3	D	49.1	D	49.8	D	54.2	D	**57.5**	**E**	**61.2**	**E**	**90.5**	**F**	**93.9**	**F**
10. Shannon Parkway / Demaree Street	D	AM	17.9	C	17.9	C	20.8	C	20.8	C	24.1	C	24.1	C				
		PM	17.0	C	17.0	C	19.3	C	19.3	C	19.7	C	19.7	C				
11. Shannon Parkway / County Center Street	D	AM	5.2	A	5.7	A	5.5	A	6.0	A	4.8	A	5.1	A				
		PM	3.5	A	4.0	A	3.7	A	4.1	A	3.8	A	4.2	A				
12. Shannon Parkway / Mooney Boulevard	D	AM	3.6	A	4.7	A	3.7	A	4.8	A	3.7	A	4.9	A				
		PM	4.3	A	6.2	A	4.5	A	6.5	A	4.5	A	6.3	A				
13. Shannon Parkway / Giddings Street	D	AM	6.9	A	6.9	A	7.6	A	7.7	A	6.7	A	6.8	A				
		PM	4.2	A	4.3	A	4.4	A	4.4	A	4.4	A	4.4	A				
14. Riggin Avenue / Demaree Street	D	AM	35.1	D	37.1	D	36.7	D	38.7	D	37.2	D	39.3	D				
		PM	37.7	D	42.0	D	40.8	D	46.1	D	43.9	D	51.1	D				
15. Riggin Avenue / County Center Street	D	AM	**75.0**	**F ++**	**99.8**	**F ++**	**99.0**	**F ++**	**130.0**	**F ++**	**135.9**	**F ++**	**168.7**	**F ++**				
		PM	**113.8**	**F ++**	**152.7**	**F ++**	**148.0**	**F ++**	**186.9**	**F ++**	**169.2**	**F ++**	**208.9**	**F ++**				
16. Riggin Avenue / Mooney Boulevard	D	AM	33.0	C	35.8	D	33.3	C	36.5	D	33.8	C	37.1	D				
		PM	41.5	D	46.6	D	43.6	D	48.9	D	51.2	D	55.0	D				
17. Riggin Avenue / Giddings Street	D	AM	**264.5**	**F ++**	**312.0**	**F ++**	**309.9**	**F ++**	**358.7**	**F ++**	**322.5**	**F ++**	**370.0**	**F ++**				
		PM	**193.0**	**F ++**	**240.6**	**F ++**	**232.3**	**F ++**	**281.6**	**F ++**	**277.5**	**F ++**	**328.9**	**F ++**				
18. Ferguson Avenue / Mooney Boulevard	D	AM	14.1	B	16.4	C	15.4	C	18.4	C	15.8	C	18.7	C				
		PM	**86.3**	**F ++**	**135.1**	**F ++**	**114.3**	**F ++**	**171.4**	**F ++**	**153.8**	**F ++**	**206.5**	**F ++**				

DELAY is measured in seconds per vehicle

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

For signalized, roundabout, and all-way stop intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

1 - With the changes brought about by SB 743, Caltrans no longer uses level of service to determine the need for transportation improvements. Instead, the focus is on providing adequate facilities for pedestrians, bicycles, and transit as well as safety considerations for all transportation modes. Guidance is provided in the Transportation Impact Study Guide dated May 20, 2020 and the Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance dated July 2020. This guidance was used in determining the need for roadway improvements on Caltrans facilities.

++ Meets peak hour signal warrants.

Table 3-4
Queuing Operations

INTERSECTION	EXISTING QUEUE STORAGE LENGTH (ft)		OPENING YEAR WITHOUT PROJECT		OPENING YEAR PLUS PROJECT		5-YEAR HORIZON WITHOUT PROJECT		5-YEAR HORIZON PLUS PROJECT		10-YEAR HORIZON WITHOUT PROJECT		10-YEAR HORIZON PLUS PROJECT		20-YEAR HORIZON WITHOUT PROJECT		20-YEAR HORIZON PLUS PROJECT	
			AM Queue	PM Queue	AM Queue	PM Queue	AM Queue	PM Queue	AM Queue	PM Queue	AM Queue	PM Queue	AM Queue	PM Queue	AM Queue	PM Queue	AM Queue	PM Queue
Pratt Road / Demaree Street	NB Right[1]	--	23	29	24	32	25	32	26	35	28	35	28	38				
	WB Left	200	44	16	47	18	48	18	52	19	53	19	56	21				
Pratt Road / County Center Street	NB Right	225	8	8	30	83	8	9	31	84	9	10	28	71				
	WB Left	125	2	5	68	49	2	6	68	50	2	6	56	42				
Riverway Drive / Demaree Street	NB Left	175	15	33	15	33	16	36	16	36	18	39	18	39				
Riverway Drive / Mooney Boulevard	NB Right[1]	--	13	18	13	18	14	21	14	21	16	23	16	23				
Riggin Avenue / Dinuba Boulevard (SR-63)	NB Left	2 @ 375	216	289	235	350	230	305	248	365	245	321	264	**382**	280	362	299	**421**
	NB Right	200	76	88	76	88	83	96	83	96	92	106	92	106	112	130	112	130
	SB Left	2 @ 375	214	252	214	252	225	264	225	264	236	276	236	276	264	305	264	305
	SB Right	325	319	**337**	319	**337**	**330**	**350**	**330**	**350**	**340**	**365**	**340**	**365**	**365**	**398**	**365**	**398**
	EB Left	250	**363**	**664**	**363**	**664**	**381**	**693**	**381**	**693**	**401**	**726**	**401**	**726**	**448**	**804**	**448**	**804**
	EB Right	300	222	131	276	168	238	141	292	176	257	152	**311**	188	**302**	176	**356**	211
	WB Left	275	197	**360**	197	**360**	217	**398**	217	**398**	239	**439**	239	**439**	**292**	**535**	**292**	**535**
	WB Right	300	152	254	152	254	159	263	159	263	166	273	166	273	182	296	182	296
Shannon Parkway / Demaree Street	SB Left	100	14	15	14	15	15	17	15	17	16	18	16	18				
	WB Left	150	126	70	126	70	138	77	138	77	**153**	85	**153**	85				
Riggin Avenue / Demaree Street	NB Left	250	134	114	134	114	147	125	147	125	163	137	163	137				
	SB Left	200	57	73	57	73	60	79	60	79	66	85	66	85				
	EB Left	275	162	210	162	210	178	232	178	232	194	255	194	255				
	EB Right	150	117	125	117	125	128	139	128	139	141	**152**	141	**152**				
	WB Left	2 @ 150	**499**	**576**	**611**	**650**	**526**	**613**	**639**	**687**	**559**	**653**	**671**	**726**				
	WB Right	150	80	70	80	70	86	76	86	76	93	82	93	82				
Riggin Avenue / County Center Street	NB Left	175	81	44	81	44	89	48	89	48	98	53	98	53				
	SB Left	125	40	33	40	33	44	36	44	36	48	39	48	39				
	SB Right	125	48	28	109	68	53	30	114	71	58	33	120	74				
	EB Left	250	33	36	53	105	36	39	57	108	39	43	60	113				
	WB Left	150	68	86	68	86	74	94	74	94	81	104	81	104				
Riggin Avenue / Mooney Boulevard	NB Left	175	112	150	112	150	123	165	123	165	136	**182**	136	**182**				
	NB Right	125	**162**	**330**	**162**	**330**	**169**	**341**	**169**	**341**	**178**	**356**	**178**	**356**				
	SB Left	150	99	112	**207**	**184**	106	123	**213**	**193**	114	131	**222**	**203**				
	SB Right[1]	--	139	117	197	156	147	124	206	163	156	133	214	171				
	EB Left	300	209	232	228	298	223	251	242	**316**	239	271	258	**337**				
	EB Right	150	45	**155**	45	**155**	50	**171**	50	**171**	54	**188**	54	**188**				
	WB Left	125	**255**	**365**	**255**	**365**	**265**	**386**	**265**	**386**	**276**	**411**	**276**	**411**				
	WB Right	150	76	114	111	**235**	80	123	117	**244**	85	133	121	**254**				
Riggin Avenue / Giddings Street	EB Left	150	68	142	68	142	73	145	73	145	77	149	77	149				
	WB Left	150	38	41	38	41	40	44	40	44	43	48	43	48				
Ferguson Avenue / Mooney Boulevard	NB Left	150	22	67	22	67	23	73	23	73	26	81	26	81				
	NB Right[1]	--	19	95	19	95	22	105	22	105	24	116	24	116				
	SB Left	150	41	58	46	63	45	65	50	68	49	71	54	74				
	EB Left	150	23	48	25	53	26	53	28	58	28	58	30	63				
	WB Left	175	18	38	18	38	21	43	21	43	23	47	23	47				
	WB Right	50	17	53	18	58	18	58	20	63	21	63	23	69				

Queue is measured in feet / **BOLD** denotes exceedance

1: Through lane terminates as right turn at intersection

Pratt Family (Gunning) Development
Project AM Peak Hour Trips at Driveways

Figure 3-20

Pratt Family (Gunning) Development
Project PM Peak Hour Trips at Driveways

Figure 3-21

Table 3-5
Intersection Operations at Project Driveways

INTERSECTION	CONTROL	TARGET LOS	PEAK HOUR	10-YEAR HORIZON PLUS PROJECT	
				DELAY	LOS
Avenue 320 / Driveway A	One-Way Stop Sign	D	AM	8.6	A
			PM	8.7	A
Avenue 320 / Driveway B	One-Way Stop Sign	D	AM	8.7	A
			PM	8.7	A
Mooney Boulevard / Driveway C	One-Way Stop Sign	D	AM	8.7	A
			PM	8.5	A
Mooney Boulevard / Driveway D	One-Way Stop Sign	D	AM	8.9	A
			PM	8.7	A
Pratt Road / Driveway E	One-Way Stop Sign	D	AM	10.0	B
			PM	11.0	B
Pratt Road / Driveway F	One-Way Stop Sign	D	AM	9.9	A
			PM	10.7	B
Pratt Road / Driveway G	Two-Way Stop Sign	D	AM	10.1	B
			PM	11.2	B
Pratt Road / Driveway H	One-Way Stop Sign	D	AM	9.5	A
			PM	10.1	B

DELAY is measured in seconds per vehicle
LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded
For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

3.12 Impacts to Public Transit, Bicycle, and Pedestrian Facilities

The Project does not conflict with any applicable adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. Visalia Transit (VT) operates 13 bus routes that serve Visalia, Farmersville, Exeter, Goshen, and Tulare. Route 7 operates along Riggin Avenue, Ferguson Avenue, and Dinuba Boulevard. Route 8 operates along Riggin Avenue, Shannon Parkway, and Dinuba Boulevard. Route 16 operates along Riggin Avenue, Dinuba Boulevard, and Shannon Parkway. Implementation of the Project will not hinder the operation of Route 7, 8, and 16 in the City of Visalia.

The City of Visalia's Active Transportation Plan (ATP) identifies goals and objectives to improve conditions for people walking, bicycling, or using other mobility devices throughout the City of Visalia. The proposed Project will not prohibit walking or bicycling throughout the study area or within the Project boundaries. As shown in Figure 1-3, the Project includes the development of multi-use trails which coincides with the goals and objectives of the ATP. The Project will also include the development of sidewalks throughout the Project site.

As a result, the Project will not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

3.13 Phasing of Transportation Improvements

From the point of view of the transportation analysis, the project has been analyzed assuming it will be built in a single phase. This means that if there were any CEQA mitigation measures relating to significant vehicle miles traveled (VMT) impacts, they would need to be implemented at the time that all or any part of the project opens. Since the project has a less than significant VMT impact, no mitigation measures are needed.

With the implementation of SB 743, recommended improvements related to level of service and delay are not related to CEQA transportation impacts and the phasing of on site and off site roadway improvements can be determined in any appropriate manner without affecting the CEQA transportation conclusion.

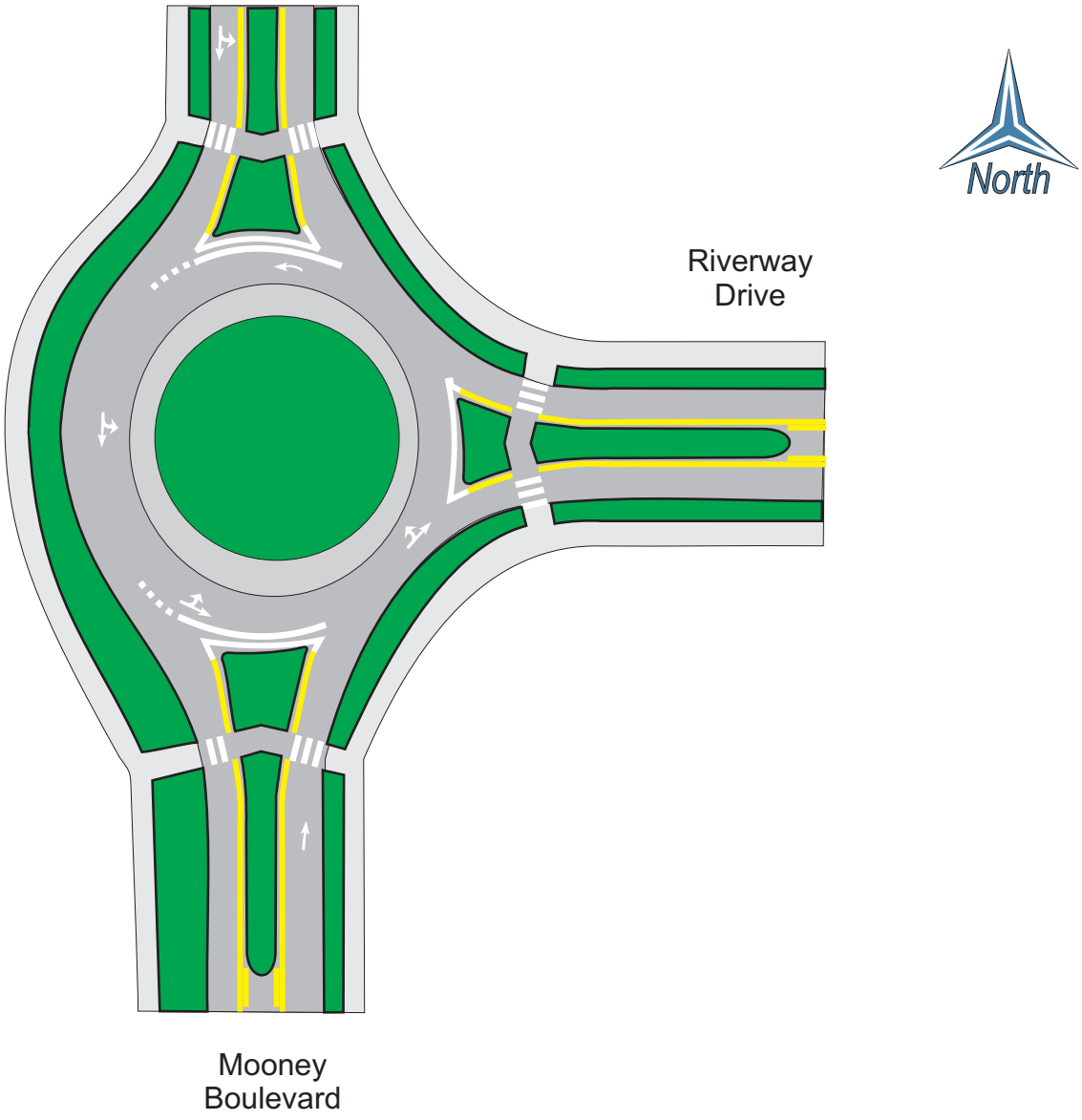
Figure 3-23 shows the proposed project phasing plan. Recommendations for roadway improvements are as follows:

- ✓ The segments of Pratt Road, Riverway Drive, and Mooney Boulevard from the Pratt Road intersection to the south should be built with TD 1 - Phase 1. In addition, the Mooney Boulevard/Riverway Drive roundabout should be built with Phase 1, TD 1.

- ✓ The remaining segments of Mooney Boulevard and Avenue 320 should be built as needed to provide access to the remainder of the project.

Pratt Family (Gunning) Development
Mooney Boulevard/Riverway Drive Roundabout

Figure 3-22



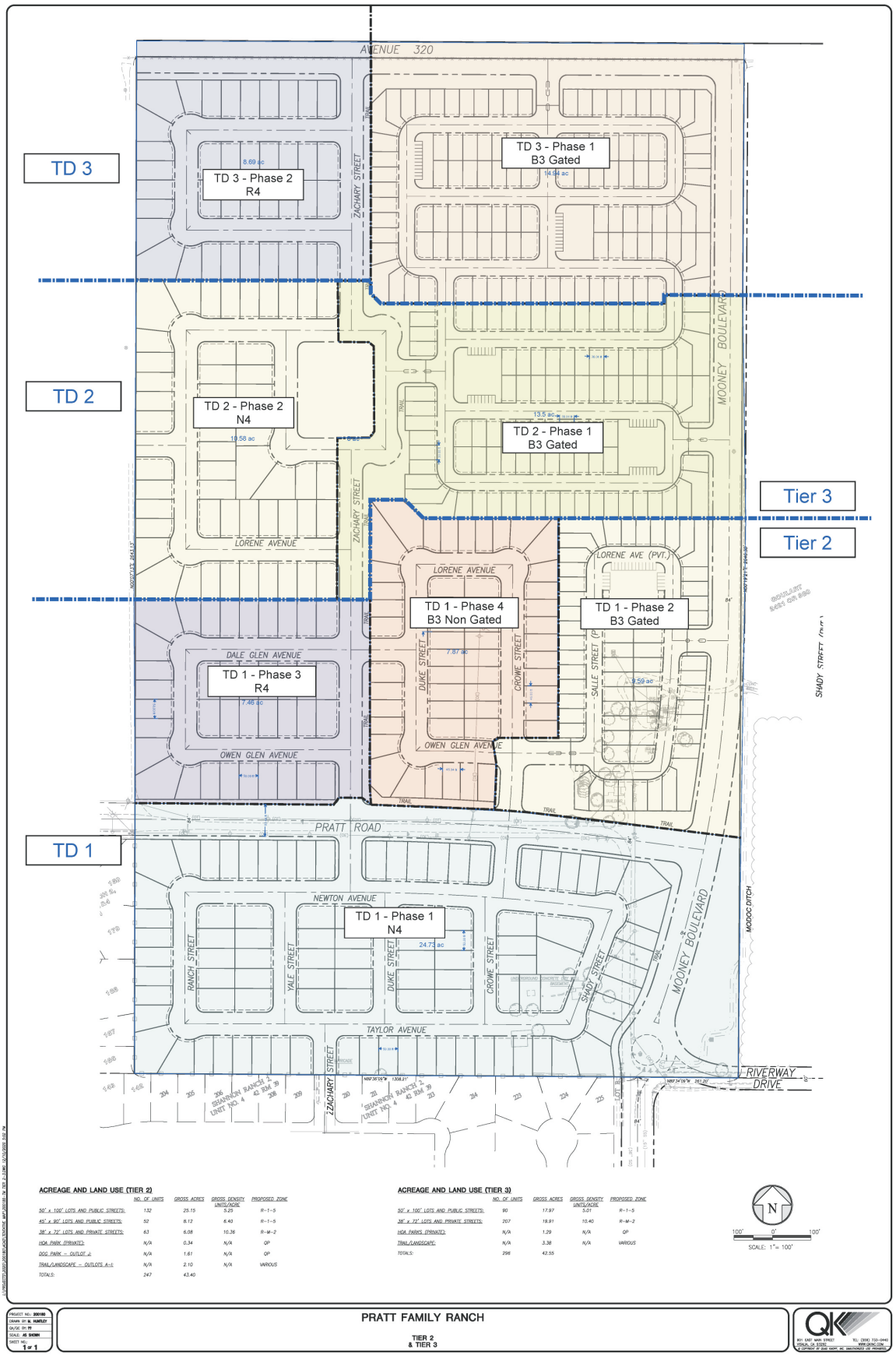
Notes:

1. This figure is shown for conceptual purposes only. Additional details, including entry deflection, will need to be determined during preliminary and final design.

VRPA TECHNOLOGIES, INC.

Pratt Family (Gunning) Development
Proposed Project Phasing

Figure 3-23



ACREAGE AND LAND USE (TIER 2)

	NO. OF UNITS	GROSS ACRES	GROSS DENSITY UNITS/ACRE	PROPOSED ZONE
50' x 100' LOTS AND PUBLIC STREETS:	132	25.15	5.25	R-1-5
40' x 90' LOTS AND PUBLIC STREETS:	52	8.12	6.40	R-1-5
38' x 72' LOTS AND PRIVATE STREETS:	63	6.08	10.36	R-M-2
HOA PARK (PRIVATE):	N/A	0.34	N/A	QP
DOG PARK – OUTLOT J:	N/A	1.61	N/A	QP
TRAIL/LANDSCAPE – OUTLOTS A-I:	N/A	2.10	N/A	VARIOUS
TOTALS:	247	43.40		

ACREAGE AND LAND USE (TIER 3)

	NO. OF UNITS	GROSS ACRES	GROSS DENSITY UNITS/ACRE	PROPOSED ZONE
50' x 100' LOTS AND PUBLIC STREETS:	90	17.97	5.01	R-1-5
38' x 72' LOTS AND PRIVATE STREETS:	207	19.91	10.40	R-M-2
HOA PARKS (PRIVATE):	N/A	1.29	N/A	QP
TRAIL/LANDSCAPE:	N/A	3.38	N/A	VARIOUS
TOTALS:	298	42.55		

PRATT FAMILY RANCH

TIER 2 & TIER 3

4.0 Mitigation

As discussed in Section 3.0 Impacts, the potentially significant impacts resulting from the Project relate to the generation of unacceptable LOS at various intersections in the long term. Considering the criteria provided in Section 1.3 and the results presented in Section 3.0, the following improvements are recommended to alleviate project-specific impacts.

4.1 Recommended Improvements

4.1.1 *Intersections*

✓ Riggin Avenue at Dinuba Boulevard (SR-63)
Recommended improvements to achieve acceptable levels of service:
- 10-Year Horizon and 20-Year Horizon scenarios:
  - Widen the eastbound approach to 2 left turn lanes, 2 through lanes, and 1 right turn lane (adding 1 left turn lane)

Although the improvements identified appear to be needed based on the traffic analysis, this intersection is in the jurisdiction of Caltrans and Caltrans has no plans to improve the intersection. Payment of City transportation impact fees is considered to satisfy this mitigation measure directly or indirectly by contributing to overall transportation funding in the City of Visalia.

✓ Riggin Avenue at County Center Street
Recommended improvements to achieve acceptable levels of service:
- Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios:
  - Install Traffic Signal

The improvements identified above for the Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios are sufficient to meet the City of Visalia's acceptable LOS standard of 'D'. It should be noted that a traffic signal was recently installed at the intersection of Riggin Avenue and County Center Street and that satisfies this mitigation measure.

✓ Riggin Avenue at Giddings Street
Recommended improvements to achieve acceptable levels of service:
- Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios:
  - Install Traffic Signal

The improvements identified above for the Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios are sufficient to meet the City of Visalia's acceptable LOS standard of 'D'. It should be noted that a traffic signal was recently installed at the intersection of Riggin Avenue and Giddings Street and that satisfies this mitigation measure.

✓ Ferguson Avenue at Mooney Boulevard
Recommended improvements to achieve acceptable levels of service:
- Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios:
  - Install Traffic Signal

Payment of City transportation impact fees is considered to satisfy this mitigation measure directly or indirectly by contributing to overall transportation funding in the City of Visalia.

✓ Riverway Drive at Mooney Boulevard
Proposed Project Improvements:
- Opening Year, 5-Year Horizon, and 10-Year Horizon scenarios:
  - Install Roundabout
  - Northbound approach: 1 Through/Right (a separate right turn lane could be added if needed to support the transition to the cross-section of Mooney Boulevard to the south)
  - Southbound approach: 1 Through/Right
  - Westbound approach: 1 Through/Right

The proposed design concept has been analyzed in this traffic analysis and no level of service deficiencies are indicated in any of the future scenarios. A design concept for the Mooney Boulevard/Riverway Drive roundabout will need to include a transition to the cross-section of Mooney Boulevard to the south. Roadway striping changes and/or geometric design changes will be needed in the area between Glendale Avenue and Riverway Drive. It is recommended that later stages of the project approval process include the preparation of a design for the roundabout that is acceptable to the City of Visalia.

Post-Mitigation Level of Significance

The level of service resulting from the potential improvements identified above is shown in Table 4-1. Figure 4-1 graphically displays the recommended improvements. Table 4-2 identifies the recommended left turn and right turn lane pocket lengths for the 10-Year Horizon scenario. Although the need for extended turn lane pockets would occur at some locations prior to the 10-Year Horizon scenario, this scenario provides the maximum length needed and therefore these lengths would also provide for projected traffic volumes under the Opening Year and 5-Year Horizon scenarios.

Table 4-1
Intersection Operations with Mitigation

INTERSECTION	TARGET LOS	PEAK HOUR	OPENING YEAR WITHOUT PROJECT		OPENING YEAR PLUS PROJECT		5-YEAR HORIZON WITHOUT PROJECT		5-YEAR HORIZON PLUS PROJECT		10-YEAR HORIZON WITHOUT PROJECT		10-YEAR HORIZON PLUS PROJECT		20-YEAR HORIZON WITHOUT PROJECT		20-YEAR HORIZON PLUS PROJECT	
			DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
9. Riggin Avenue / Dinuba Boulevard (SR-63)	-- [1]	AM									29.4	C	30.6	C	32.5	C	33.2	C
		PM									38.6	D	40.3	D	51.3	D	53.3	D
15. Riggin Avenue / County Center Street	D	AM	16.8	B	17.0	B	17.8	B	18.1	B	18.9	B	20.1	C				
		PM	18.1	B	17.9	B	17.8	B	20.0	B	19.0	B	21.1	C				
17. Riggin Avenue / Giddings Street	D	AM	24.3	C	28.5	C	32.1	C	38.3	D	33.9	C	41.0	D				
		PM	17.3	B	19.4	B	19.3	B	22.7	C	22.4	C	27.1	C				
18. Ferguson Avenue / Mooney Boulevard	D	AM	14.3	B	14.5	B	14.8	B	15.1	B	15.0	B	15.3	B				
		PM	19.8	B	21.6	C	21.6	C	24.7	C	24.6	C	29.3	C				

DELAY is measured in seconds per vehicle

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

For signalized, roundabout, and all-way stop intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

1 - With the changes brought about by SB 743, Caltrans no longer uses level of service to determine the need for transportation improvements. Instead, the focus is on providing adequate facilities for pedestrians, bicycles, and transit as well as safety considerations for all transportation modes. Guidance is provided in the Transportation Impact Study Guide dated May 20, 2020 and the Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance dated July 2020. This guidance was used in determining the need for roadway improvements on Caltrans facilities.

Pratt Family (Gunning) Development
Proposed Roadway Improvements

Figure 4-1

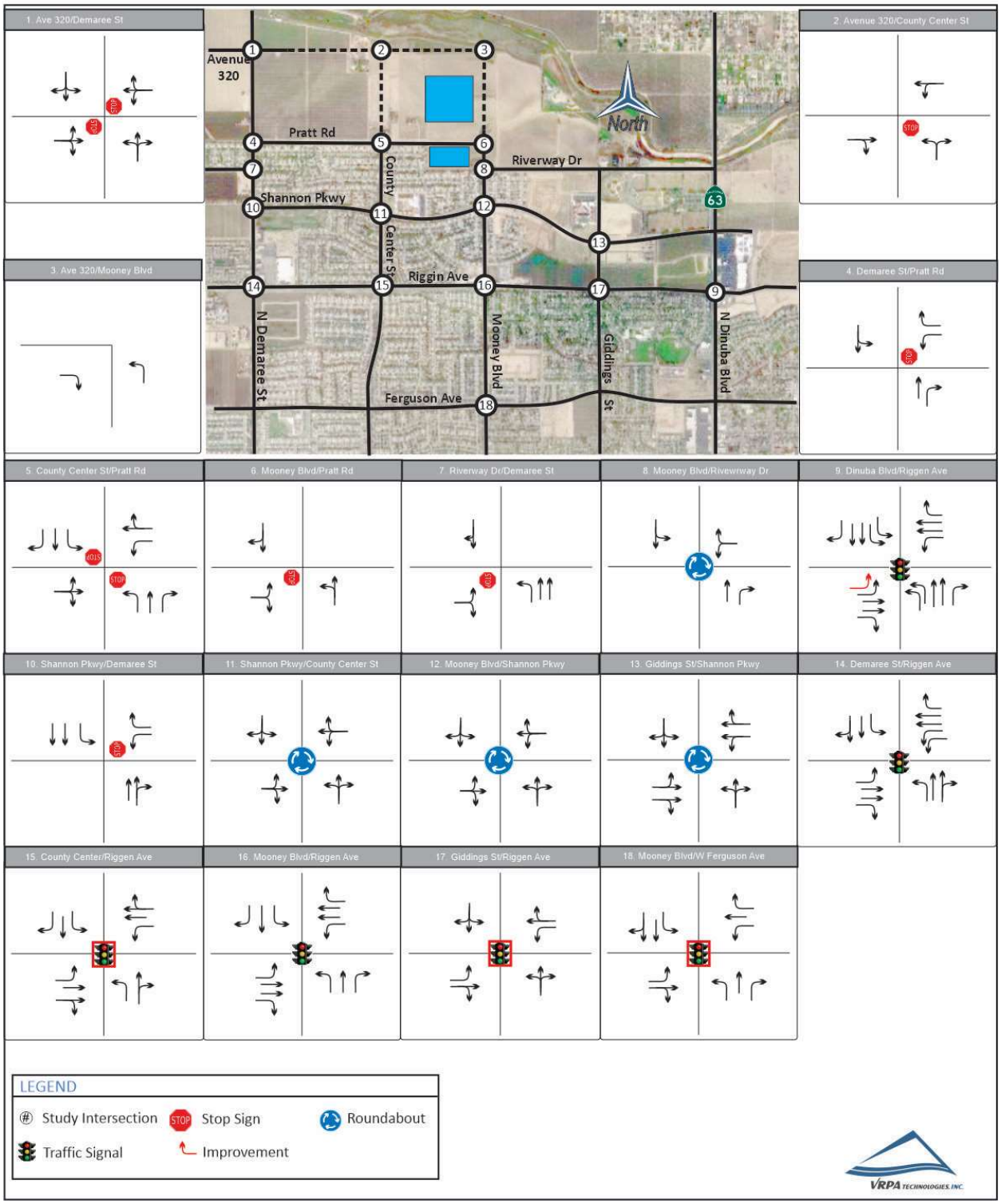


Table 4-2
Left Turn and Right Turn Storage Requirements

INTERSECTION	EXISTING QUEUE STORAGE LENGTH (ft)		10-YEAR HORIZON RECOMMENDED STORAGE LENGTH (ft)	
Pratt Road / Demaree Street	NB Right[1]	--	NB Right[1]	--
	WB Left	200	WB Left	200
Pratt Road / County Center Street	NB Right	225	NB Right	225
	WB Left	125	WB Left	125
Riverway Drive / Demaree Street	NB Left	175	NB Left	175
Riverway Drive / Mooney Boulevard	NB Right[1]	--	NB Right[1]	--
Riggin Avenue / Dinuba Boulevard (SR-63) [2]	NB Left	2 @ 375	NB Left	**2 @ 425**
	NB Right	200	NB Right	200
	SB Left	2 @ 375	SB Left	2 @ 375
	SB Right	325	SB Right	**400**
	EB Left	250	EB Left	**2 @ 400**
	EB Right	300	EB Right	**350**
	WB Left	275	WB Left	**400**
	WB Right	300	WB Right	300
Shannon Parkway / Demaree Street	SB Left	100	SB Left	100
	WB Left	150	WB Left	150
Riggin Avenue / Demaree Street	NB Left	250	NB Left	250
	SB Left	200	SB Left	200
	EB Left	275	EB Left	275
	EB Right	150	EB Right	150
	WB Left	2 @ 150	WB Left	2 @ 150
	WB Right	150	WB Right	150
Riggin Avenue / County Center Street	NB Left	175	NB Left	175
	SB Left	125	SB Left	125
	SB Right	125	SB Right	125
	EB Left	250	EB Left	250
	WB Left	150	WB Left	150
Riggin Avenue / Mooney Boulevard	NB Left	175	NB Left	175
	NB Right	125	NB Right	**350**
	SB Left	150	SB Left	150
	SB Right[1]	--	SB Right[1]	--
	EB Left	300	EB Left	**350**
	EB Right	150	EB Right	**200**
	WB Left	125	WB Left	**400**
	WB Right	150	WB Right	**175**
Riggin Avenue / Giddings Street	EB Left	150	EB Left	150
	WB Left	150	WB Left	150
Ferguson Avenue / Mooney Boulevard	NB Left	150	NB Left	150
	NB Right[1]	--	NB Right[1]	--
	SB Left	150	SB Left	150
	EB Left	150	EB Left	150
	WB Left	175	WB Left	175
	WB Right	50	WB Right	50

BOLD denotes change in storage length

1: Through lane terminates as right turn at intersection

2: Based upon 20-Year Horizon Scenario

4.2 Equitable Share Responsibility

The Project will be required to contribute a fair-share towards the costs of improvements that are identified for future scenarios. The intent of determining the equitable responsibility for the improvements identified above for the 10-Year Horizon scenario, is to provide a starting point for early discussions between the applicant and the City of Visalia to address traffic mitigation equitability and to calculate the equitable share for mitigating traffic impacts. The formulas used to calculate the equitable share responsibility to City of Visalia facilities is as follows:

Equitable Share = (Project Trips)/(10-Year Horizon Plus Project Traffic – Existing Traffic)

Table 4-3 shows the Project's equitable fair share responsibility on a percentage basis for improvements to City of Visalia facilities as described above. The equitable fair share responsibility shown in Table 4-3 is the result of LOS enhancements related to capacity. The Project's fair share contribution payment into the City of Visalia transportation impact fee mitigation program can be made in order to fulfill the mitigation requirement.

Table 4-3
10-Year Horizon Equitable Share Responsibility

INTERSECTION	PEAK HOUR	EXISTING	PROJECT TRIPS	10-YEAR HORIZON PLUS PROJECT	FAIR SHARE PERCENTAGE
Riggin Avenue / Dinuba Boulevard (SR-63) [1]	AM	1,813	90	3,716	4.7%
	PM	2,314	121	4,896	4.7%
Riggin Avenue / County Center Street	AM	1,462	160	2,423	16.6%
	PM	1,429	214	2,571	18.7%
Riggin Avenue / Giddings Street	AM	1,283	99	2,340	9.4%
	PM	1,122	132	2,422	10.2%
Ferguson Avenue / Mooney Boulevard	AM	723	119	1,269	21.8%
	PM	1,505	160	2,338	19.2%

1 - Fair-Share based on 20-Year Horizon

Pratt Family Ranch

Transportation Impact Study - Appendix
July 15, 2022

Prepared by:
VRPA Technologies, Inc.
4630 W. Jennifer, Suite 105
Fresno, CA 93722

APPENDIX A

Existing Traffic Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: County Center St & Pratt Rd
City: Visalia
Control: 1-Way Stop (NB)

Project ID: 21-090072-002
Date: 8/31/2021

Total

NS/EW Streets:	County Center St				County Center St				Pratt Rd				Pratt Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	1	0	0	0	0	0	0	17	5	0	1	11	0	0	36
7:15 AM	1	0	0	0	0	0	0	0	0	17	2	0	1	14	0	0	35
7:30 AM	2	0	3	0	0	0	0	0	0	14	4	0	0	22	0	0	45
7:45 AM	1	0	3	0	0	0	0	0	0	16	1	0	0	21	0	0	42
8:00 AM	0	0	3	0	0	0	0	0	0	18	2	0	1	16	0	0	40
8:15 AM	1	0	2	0	0	0	0	0	0	17	4	0	0	11	0	0	35
8:30 AM	1	0	2	0	0	0	0	0	0	17	7	0	0	13	0	0	40
8:45 AM	2	0	4	0	0	0	0	0	0	5	5	0	0	7	0	0	23
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	9	0	18	0	0	0	0	0	0	121	30	0	3	115	0	0	296
APPROACH %'s :	33.33%	0.00%	66.67%	0.00%					0.00%	80.13%	19.87%	0.00%	2.54%	97.46%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	4	0	9	0	0	0	0	0	0	65	9	0	2	73	0	0	162
PEAK HR FACTOR :	0.500	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.903	0.563	0.000	0.500	0.830	0.000	0.000	0.900
	0.650								0.925				0.852				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	0	1	0	0	0	0	0	0	13	2	0	0	12	0	0	30
4:15 PM	7	0	2	0	0	0	0	0	0	7	3	0	0	16	0	0	35
4:30 PM	8	0	3	0	0	0	0	0	0	18	1	0	0	27	0	0	57
4:45 PM	4	0	3	0	0	0	0	0	0	22	9	0	2	23	0	0	63
5:00 PM	7	0	2	0	0	0	0	0	0	16	2	0	4	23	0	0	54
5:15 PM	3	0	1	0	0	0	0	0	0	12	4	0	1	9	0	0	30
5:30 PM	3	0	3	0	0	0	0	0	0	7	5	0	0	7	0	0	25
5:45 PM	2	0	1	0	0	0	0	0	0	13	1	0	0	4	0	0	21
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	36	0	16	0	0	0	0	0	0	108	27	0	7	121	0	0	315
APPROACH %'s :	69.23%	0.00%	30.77%	0.00%					0.00%	80.00%	20.00%	0.00%	5.47%	94.53%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	26	0	10	0	0	0	0	0	0	63	15	0	6	89	0	0	209
PEAK HR FACTOR :	0.813	0.000	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.716	0.417	0.000	0.375	0.824	0.000	0.000	0.829
	0.818								0.629				0.880				

National Data & Surveying Services Intersection Turning Movement Count

Location: County Center St & Riggin Ave
City: Visalia
Control: 4-Way Stop

Project ID: 21-090072-009
Date: 8/24/2021

Data - Totals

NS/EW Streets:	County Center St				County Center St				Riggin Ave				Riggin Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	1	1	0	1	1	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	10	10	10	0	5	22	10	0	4	56	8	0	9	81	2	0	227
7:15 AM	11	9	23	0	10	17	11	0	7	63	10	0	7	94	3	0	265
7:30 AM	27	13	27	0	21	21	16	0	7	79	4	0	11	110	7	1	344
7:45 AM	30	23	28	0	10	26	13	0	8	112	11	0	14	107	3	1	386
8:00 AM	26	19	27	0	10	23	16	0	12	99	14	0	21	120	6	0	393
8:15 AM	10	13	13	0	6	11	11	0	11	114	15	0	25	98	12	0	339
8:30 AM	15	10	10	0	2	9	6	0	6	59	9	0	13	87	1	0	227
8:45 AM	10	6	12	0	5	5	6	0	4	49	6	0	7	62	3	1	176
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	139	103	150	0	69	134	89	0	59	631	77	0	107	759	37	3	2357
APPROACH %'s :	35.46%	26.28%	38.27%	0.00%	23.63%	45.89%	30.48%	0.00%	7.69%	82.27%	10.04%	0.00%	11.81%	83.77%	4.08%	0.33%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	93	68	95	0	47	81	56	0	38	404	44	0	71	435	28	2	1462
PEAK HR FACTOR :	0.775	0.739	0.848	0.000	0.560	0.779	0.875	0.000	0.792	0.886	0.733	0.000	0.710	0.906	0.583	0.500	0.930
	0.790				0.793				0.868				0.912				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	1	1	0	1	1	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	15	13	16	0	5	13	7	0	7	108	14	0	13	77	10	1	299
4:15 PM	8	22	12	0	9	12	7	0	15	121	16	0	16	89	10	1	338
4:30 PM	9	13	18	0	7	8	6	0	12	113	21	0	26	96	6	0	335
4:45 PM	13	12	9	0	14	11	4	0	13	119	15	0	23	94	9	1	337
5:00 PM	16	22	15	0	12	14	10	0	8	143	21	0	27	101	11	2	402
5:15 PM	14	17	14	0	9	11	10	0	9	127	22	0	24	80	8	2	347
5:30 PM	8	15	21	0	3	16	8	0	12	127	9	0	17	95	12	0	343
5:45 PM	10	13	16	0	9	11	5	0	11	125	17	0	21	91	7	0	336
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	93	127	121	0	68	96	57	0	87	983	135	0	167	723	73	7	2737
APPROACH %'s :	27.27%	37.24%	35.48%	0.00%	30.77%	43.44%	25.79%	0.00%	7.22%	81.58%	11.20%	0.00%	17.22%	74.54%	7.53%	0.72%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	51	66	59	0	38	52	32	0	42	516	67	0	91	370	40	5	1429
PEAK HR FACTOR :	0.797	0.750	0.702	0.000	0.679	0.813	0.800	0.000	0.808	0.902	0.761	0.000	0.843	0.916	0.833	0.625	0.889
	0.830				0.847				0.908				0.897				

National Data & Surveying Services Intersection Turning Movement Count

Location: County Center St & Shannon Pkwy
City: Visalia
Control: 4-Way Yield

Project ID: 21-090072-006
Date: 8/24/2021

Data - Totals

NS/EW Streets:	County Center St				County Center St				Shannon Pkwy				Shannon Pkwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	2	4	0	0	14	6	0	1	7	2	0	1	5	1	0	45
7:15 AM	0	8	4	1	0	6	6	0	2	6	4	0	1	10	2	0	50
7:30 AM	6	10	12	0	0	11	3	0	6	16	4	0	9	16	1	0	94
7:45 AM	2	18	29	0	2	8	7	0	10	30	10	0	26	36	4	1	183
8:00 AM	6	13	13	0	1	6	3	0	10	17	4	0	25	46	10	2	156
8:15 AM	4	9	4	0	0	5	1	0	3	10	2	0	5	7	5	0	55
8:30 AM	1	4	1	0	3	4	2	0	0	7	2	0	4	5	2	0	35
8:45 AM	4	2	2	0	0	3	3	0	1	7	5	0	1	3	0	0	31
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	25	66	69	1	6	57	31	0	33	100	33	0	72	128	25	3	649
APPROACH %'s :	15.53%	40.99%	42.86%	0.62%	6.38%	60.64%	32.98%	0.00%	19.88%	60.24%	19.88%	0.00%	31.58%	56.14%	10.96%	1.32%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	18	50	58	0	3	30	14	0	29	73	20	0	65	105	20	3	488
PEAK HR FACTOR :	0.750	0.694	0.500	0.000	0.375	0.682	0.500	0.000	0.725	0.608	0.500	0.000	0.625	0.571	0.500	0.375	0.667
	0.643				0.691				0.610				0.581				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	7	6	1	0	7	4	1	3	20	6	0	5	15	1	0	80
4:15 PM	5	9	7	0	1	8	2	0	3	9	3	0	10	12	3	0	72
4:30 PM	2	4	8	0	1	3	1	0	1	11	3	0	5	13	1	0	53
4:45 PM	1	9	8	0	2	6	0	0	2	14	4	0	3	26	3	0	78
5:00 PM	5	4	4	0	0	6	2	0	4	16	4	0	11	10	1	0	67
5:15 PM	4	8	8	0	2	4	1	0	4	18	4	0	4	18	2	0	77
5:30 PM	5	8	2	0	2	7	3	0	1	20	3	0	6	11	2	0	70
5:45 PM	3	10	8	0	0	4	4	0	2	12	1	0	3	13	4	0	64
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	29	59	51	1	8	45	17	1	20	120	28	0	47	118	17	0	561
APPROACH %'s :	20.71%	42.14%	36.43%	0.71%	11.27%	63.38%	23.94%	1.41%	11.90%	71.43%	16.67%	0.00%	25.82%	64.84%	9.34%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	15	29	22	0	6	23	6	0	11	68	15	0	24	65	8	0	292
PEAK HR FACTOR :	0.750	0.806	0.688	0.000	0.750	0.821	0.500	0.000	0.688	0.850	0.938	0.000	0.545	0.625	0.667	0.000	0.936
	0.825				0.729				0.904				0.758				

National Data & Surveying Services Intersection Turning Movement Count

Location: N Demaree St & Ave 320
City: Visalia
Control: 1-Way Stop (EB)

Project ID: 21-090001-001
Date: 1/5/2021

Data - Totals

NS/EW Streets:	N Demaree St				N Demaree St				Ave 320				Ave 320				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	31	0	0	0	21	0	0	4	5	2	0	0	0	0	0	70
7:15 AM	7	29	0	0	0	23	6	0	1	3	1	0	0	0	0	0	70
7:30 AM	11	41	0	0	0	39	8	0	2	0	3	0	0	0	0	0	104
7:45 AM	5	39	0	0	0	33	11	0	6	1	7	0	0	3	0	0	105
8:00 AM	10	42	0	0	0	18	5	0	6	0	8	0	0	0	0	0	89
8:15 AM	4	21	0	0	0	23	6	0	5	0	3	0	0	0	0	0	62
8:30 AM	11	33	0	0	0	22	6	0	8	2	6	0	0	0	0	0	88
8:45 AM	9	21	0	0	0	29	3	0	5	1	3	0	0	0	1	0	72
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	64	257	0	0	0	208	45	0	37	12	33	0	0	3	1	0	660
APPROACH %'s :	19.94%	80.06%	0.00%	0.00%	0.00%	82.21%	17.79%	0.00%	45.12%	14.63%	40.24%	0.00%	0.00%	75.00%	25.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	33	151	0	0	0	113	30	0	15	4	19	0	0	3	0	0	368
PEAK HR FACTOR :	0.750	0.899	0.000	0.000	0.000	0.724	0.682	0.000	0.625	0.333	0.594	0.000	0.000	0.250	0.000	0.000	0.876
	0.885				0.761				0.679				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	38	0	0	0	50	5	0	13	0	27	0	0	0	0	0	139
4:15 PM	3	38	0	0	0	43	4	0	11	0	9	0	0	0	0	0	108
4:30 PM	14	45	0	0	0	37	9	0	5	0	19	0	0	0	0	0	129
4:45 PM	3	49	0	0	0	42	4	0	7	1	18	0	0	0	0	0	124
5:00 PM	5	45	0	0	0	53	7	0	8	1	13	0	0	0	0	0	132
5:15 PM	4	35	0	0	0	34	7	0	13	0	13	0	0	0	0	0	106
5:30 PM	5	40	0	0	0	43	2	0	8	0	10	0	0	0	0	0	108
5:45 PM	3	46	0	0	0	34	2	0	8	0	12	0	0	0	0	0	105
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	43	336	0	0	0	336	40	0	73	2	121	0	0	0	0	0	951
APPROACH %'s :	11.35%	88.65%	0.00%	0.00%	0.00%	89.36%	10.64%	0.00%	37.24%	1.02%	61.73%	0.00%					
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	26	170	0	0	0	172	22	0	36	1	73	0	0	0	0	0	500
PEAK HR FACTOR :	0.464	0.867	0.000	0.000	0.000	0.860	0.611	0.000	0.692	0.250	0.676	0.000	0.000	0.000	0.000	0.000	0.899
	0.831				0.882				0.688								

National Data & Surveying Services Intersection Turning Movement Count

Location: N Demaree St & Pratt Rd
City: Visalia
Control: 1-Way Stop(WB)

Project ID: 21-090072-001
Date: 8/24/2021

Data - Totals

NS/EW Streets:	N Demaree St				N Demaree St				Pratt Rd				Pratt Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	44	6	0	6	30	0	0	0	0	0	0	9	0	11	0	106
7:15 AM	0	54	3	0	7	54	0	0	0	0	0	0	6	0	28	0	152
7:30 AM	0	79	7	0	5	50	0	0	0	0	0	0	19	0	27	0	187
7:45 AM	0	64	6	0	12	60	0	0	0	0	0	0	15	0	21	0	178
8:00 AM	0	54	9	0	11	41	0	0	0	0	0	0	10	0	27	0	152
8:15 AM	0	50	8	0	9	36	0	0	0	0	0	0	7	0	8	0	118
8:30 AM	0	38	4	0	5	26	0	0	0	0	0	0	5	0	10	0	88
8:45 AM	0	44	8	0	8	38	0	0	0	0	0	0	6	0	9	0	113
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	427	51	0	63	335	0	0	0	0	0	0	77	0	141	0	1094
APPROACH %'s :	0.00%	89.33%	10.67%	0.00%	15.83%	84.17%	0.00%	0.00%					35.32%	0.00%	64.68%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	251	25	0	35	205	0	0	0	0	0	0	50	0	103	0	669
PEAK HR FACTOR :	0.000	0.794	0.694	0.000	0.729	0.854	0.000	0.000	0.000	0.000	0.000	0.000	0.658	0.000	0.920	0.000	0.894
		0.802				0.833								0.832			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	1	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	37	13	0	11	69	0	0	0	0	0	0	9	0	2	0	141
4:15 PM	0	59	10	0	11	85	0	0	0	0	0	0	3	0	5	0	173
4:30 PM	0	67	6	0	10	61	0	0	0	0	0	0	6	0	8	0	158
4:45 PM	0	44	7	0	12	57	0	0	0	0	0	0	4	0	12	0	136
5:00 PM	0	56	10	0	11	66	0	0	0	0	0	0	5	0	3	0	151
5:15 PM	0	51	13	0	13	83	0	0	0	0	0	0	5	0	4	0	169
5:30 PM	0	42	19	0	7	51	0	0	0	0	0	0	7	0	8	0	134
5:45 PM	0	53	6	0	9	61	0	0	0	0	0	0	9	0	2	0	140
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	409	84	0	84	533	0	0	0	0	0	0	48	0	44	0	1202
APPROACH %'s :	0.00%	82.96%	17.04%	0.00%	13.61%	86.39%	0.00%	0.00%					52.17%	0.00%	47.83%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	226	33	0	44	269	0	0	0	0	0	0	18	0	28	0	618
PEAK HR FACTOR :	0.000	0.843	0.825	0.000	0.917	0.791	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.583	0.000	0.893
		0.887				0.815								0.719			

National Data & Surveying Services Intersection Turning Movement Count

Location: N Demaree St & Riggin Ave
City: Visalia
Control: Signalized

Project ID: 21-090072-008
Date: 8/24/2021

Data - Totals

NS/EW Streets:	N Demaree St				N Demaree St				Riggin Ave				Riggin Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	1	0	2	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	41	30	0	4	34	18	0	11	30	11	1	22	80	7	3	307
7:15 AM	8	48	17	0	6	81	22	0	17	65	16	0	35	73	9	1	398
7:30 AM	19	67	29	0	7	89	23	0	18	58	22	0	53	109	12	1	507
7:45 AM	28	75	30	0	10	71	35	0	19	89	18	0	36	127	9	2	549
8:00 AM	29	80	28	0	7	67	35	0	23	93	21	0	41	105	9	3	541
8:15 AM	14	59	34	0	3	36	10	0	38	88	17	0	41	88	8	6	442
8:30 AM	11	48	22	0	8	42	9	0	22	41	6	0	40	73	9	8	339
8:45 AM	12	63	17	0	3	41	8	0	19	36	1	0	45	47	6	8	306
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	136	481	207	0	48	461	160	0	167	500	112	1	313	702	69	32	3389
APPROACH %'s :	16.50%	58.37%	25.12%	0.00%	7.17%	68.91%	23.92%	0.00%	21.41%	64.10%	14.36%	0.13%	28.05%	62.90%	6.18%	2.87%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	90	281	121	0	27	263	103	0	98	328	78	0	171	429	38	12	2039
PEAK HR FACTOR :	0.776	0.878	0.890	0.000	0.675	0.739	0.736	0.000	0.645	0.882	0.886	0.000	0.807	0.844	0.792	0.500	0.929
	0.898				0.826				0.881				0.929				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	1	0	2	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	13	82	37	0	11	64	18	0	46	73	15	0	47	60	7	21	494
4:15 PM	11	85	34	0	15	78	15	0	30	98	11	0	49	66	3	15	510
4:30 PM	18	79	35	0	11	53	18	0	30	101	20	0	53	75	11	9	513
4:45 PM	15	79	45	0	12	59	15	0	29	87	18	0	50	71	9	13	502
5:00 PM	23	75	42	0	11	61	10	0	36	120	31	0	54	72	13	8	556
5:15 PM	19	104	42	0	10	83	19	0	36	104	18	1	42	65	8	18	569
5:30 PM	18	79	47	0	7	67	18	0	28	91	12	0	48	73	9	6	503
5:45 PM	16	90	38	0	8	47	17	0	35	111	23	0	47	67	8	13	520
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	133	673	320	0	85	512	130	0	270	785	148	1	390	549	68	103	4167
APPROACH %'s :	11.81%	59.77%	28.42%	0.00%	11.69%	70.43%	17.88%	0.00%	22.43%	65.20%	12.29%	0.08%	35.14%	49.46%	6.13%	9.28%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	76	348	169	0	36	258	64	0	135	426	84	1	191	277	38	45	2148
PEAK HR FACTOR :	0.826	0.837	0.899	0.000	0.818	0.777	0.842	0.000	0.938	0.888	0.677	0.250	0.884	0.949	0.731	0.625	0.944
	0.898				0.799				0.864				0.937				

National Data & Surveying Services Intersection Turning Movement Count

Location: N Demaree St & River Way Dr
City: Visalia
Control: 1-Way Stop(EB)

Project ID: 21-090072-003
Date: 8/24/2021

Data - Totals

NS/EW Streets:	N Demaree St				N Demaree St				River Way Dr				River Way Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	52	0	0	0	33	0	0	1	0	7	0	0	0	0	0	95
7:15 AM	2	62	0	0	0	63	2	0	0	0	13	0	0	0	0	0	142
7:30 AM	2	78	0	0	0	66	0	0	3	0	12	0	0	0	0	0	161
7:45 AM	4	73	0	0	0	79	0	0	5	0	18	0	0	0	0	0	179
8:00 AM	9	57	0	0	0	51	0	0	1	0	10	0	0	0	0	0	128
8:15 AM	10	54	0	1	0	31	0	0	0	0	4	0	0	0	0	0	100
8:30 AM	2	51	0	0	0	41	2	0	0	0	3	0	0	0	0	0	99
8:45 AM	8	42	0	0	0	39	0	0	2	0	4	0	0	0	0	0	95
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	39	469	0	1	0	403	4	0	12	0	71	0	0	0	0	0	999
APPROACH %'s :	7.66%	92.14%	0.00%	0.20%	0.00%	99.02%	0.98%	0.00%	14.46%	0.00%	85.54%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	17	270	0	0	0	259	2	0	9	0	53	0	0	0	0	0	610
PEAK HR FACTOR :	0.472	0.865	0.000	0.000	0.000	0.820	0.250	0.000	0.450	0.000	0.736	0.000	0.000	0.000	0.000	0.000	0.852
	0.897				0.826				0.674								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	7	49	0	1	0	72	2	0	1	0	4	0	0	0	0	0	136
4:15 PM	8	69	0	0	0	89	2	0	1	0	7	0	0	0	0	0	176
4:30 PM	9	72	0	2	0	67	1	0	0	0	9	0	0	0	0	0	160
4:45 PM	9	57	0	0	0	53	3	0	0	0	3	0	0	0	0	0	125
5:00 PM	10	57	0	0	0	65	3	0	4	0	8	0	0	0	0	0	147
5:15 PM	3	66	0	0	0	91	3	0	2	0	7	0	0	0	0	0	172
5:30 PM	10	55	0	0	0	58	2	0	1	0	5	0	0	0	0	0	131
5:45 PM	9	62	0	0	0	68	0	0	1	0	4	0	0	0	0	0	144
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	65	487	0	3	0	563	16	0	10	0	47	0	0	0	0	0	1191
APPROACH %'s :	11.71%	87.75%	0.00%	0.54%	0.00%	97.24%	2.76%	0.00%	17.54%	0.00%	82.46%	0.00%					
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	36	255	0	2	0	274	9	0	5	0	27	0	0	0	0	0	608
PEAK HR FACTOR :	0.900	0.885	0.000	0.250	0.000	0.770	0.750	0.000	0.313	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.864
	0.883				0.777				0.667								

National Data & Surveying Services Intersection Turning Movement Count

Location: N Demaree St & Shannon Pkwy
City: Visalia
Control: 1-Way Stop(WB)

Project ID: 21-090072-005
Date: 8/24/2021

Data - Totals

NS/EW Streets:	N Demaree St				N Demaree St				Shannon Pkwy				Shannon Pkwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	52	11	0	1	38	0	0	0	0	0	0	19	0	3	0	124
7:15 AM	0	57	11	0	4	73	0	0	0	0	0	0	32	0	6	0	183
7:30 AM	0	72	17	0	3	77	0	0	0	0	0	0	33	0	11	0	213
7:45 AM	0	68	23	0	0	95	0	0	0	0	0	0	36	0	7	0	229
8:00 AM	0	65	24	0	3	59	0	0	0	0	0	0	43	0	2	0	196
8:15 AM	0	58	14	0	2	32	0	0	0	0	0	0	11	0	6	0	123
8:30 AM	0	51	13	0	1	45	0	0	0	0	0	0	9	0	2	0	121
8:45 AM	0	47	12	1	2	36	0	0	0	0	0	0	11	0	4	0	113
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	470	125	1	16	455	0	0	0	0	0	0	194	0	41	0	1302
APPROACH %'s :	0.00%	78.86%	20.97%	0.17%	3.40%	96.60%	0.00%	0.00%					82.55%	0.00%	17.45%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	262	75	0	10	304	0	0	0	0	0	0	144	0	26	0	821
PEAK HR FACTOR :	0.000	0.910	0.781	0.000	0.625	0.800	0.000	0.000	0.000	0.000	0.000	0.000	0.837	0.000	0.591	0.000	0.896
		0.926				0.826								0.944			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	57	28	0	4	73	0	0	0	0	0	0	22	0	0	0	184
4:15 PM	0	71	30	0	4	92	0	0	2	0	2	0	17	0	4	0	222
4:30 PM	0	82	18	0	4	73	0	0	0	0	0	0	16	0	2	0	195
4:45 PM	0	64	33	0	0	57	0	0	0	0	0	0	28	0	1	0	183
5:00 PM	0	67	25	0	4	67	0	0	0	0	0	0	13	0	1	0	177
5:15 PM	0	68	40	0	4	96	0	0	0	0	0	0	23	0	0	0	231
5:30 PM	0	64	28	1	6	56	0	0	0	0	0	0	28	0	1	1	185
5:45 PM	0	72	21	0	2	71	0	0	0	0	0	0	12	0	0	0	178
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	545	223	1	28	585	0	0	2	0	2	0	159	0	9	1	1555
APPROACH %'s :	0.00%	70.87%	29.00%	0.13%	4.57%	95.43%	0.00%	0.00%	50.00%	0.00%	50.00%	0.00%	94.08%	0.00%	5.33%	0.59%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	281	116	0	12	293	0	0	0	0	0	0	80	0	4	0	786
PEAK HR FACTOR :	0.000	0.857	0.725	0.000	0.750	0.763	0.000	0.000	0.000	0.000	0.000	0.000	0.714	0.000	0.500	0.000	0.851
		0.919				0.763								0.724			

National Data & Surveying Services Intersection Turning Movement Count

Location: SR 63/Dinuba Blvd & Riggin Ave
City: Visalia
Control: Signalized

Project ID: 21-090072-004
Date: 8/24/2021

Data - Totals

NS/EW Streets:	SR 63/Dinuba Blvd				SR 63/Dinuba Blvd				Riggin Ave				Riggin Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	13	52	8	1	14	53	21	0	13	35	9	0	9	29	3	1	261
7:15 AM	14	44	6	1	13	63	13	0	28	50	12	0	19	65	14	10	352
7:30 AM	11	50	4	0	17	115	20	1	17	75	26	0	25	43	7	4	415
7:45 AM	12	67	20	4	20	97	13	1	26	72	37	0	28	66	13	2	478
8:00 AM	31	75	12	1	17	82	17	0	30	49	29	0	20	68	14	5	450
8:15 AM	26	71	15	4	13	76	13	0	44	65	19	0	38	69	7	10	470
8:30 AM	25	71	6	2	13	56	21	0	26	31	14	0	27	47	6	11	356
8:45 AM	30	73	12	1	17	82	17	0	30	48	30	0	20	67	14	5	446
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	162	503	83	14	124	624	135	2	214	425	176	0	186	454	78	48	3228
APPROACH %'s :	21.26%	66.01%	10.89%	1.84%	14.01%	70.51%	15.25%	0.23%	26.26%	52.15%	21.60%	0.00%	24.28%	59.27%	10.18%	6.27%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	80	263	51	9	67	370	63	2	117	261	111	0	111	246	41	21	1813
PEAK HR FACTOR :	0.645	0.877	0.638	0.563	0.838	0.804	0.788	0.500	0.665	0.870	0.750	0.000	0.730	0.891	0.732	0.525	0.948
	0.847				0.820				0.906				0.845				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	1	0	2	2	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	21	110	14	0	26	74	18	1	39	66	19	1	47	64	5	20	525
4:15 PM	31	118	12	2	25	104	15	2	55	45	24	0	35	58	9	27	562
4:30 PM	23	138	13	2	10	79	17	0	48	59	13	0	36	79	14	25	556
4:45 PM	29	127	18	1	14	88	23	0	57	47	14	0	39	67	10	17	551
5:00 PM	27	147	23	2	17	80	17	0	37	54	20	0	31	75	10	19	559
5:15 PM	23	161	12	0	18	95	21	2	57	66	14	0	41	65	12	20	607
5:30 PM	26	135	12	3	8	87	21	2	51	49	15	0	53	92	13	20	587
5:45 PM	17	138	12	2	23	76	24	2	49	61	13	0	43	62	24	15	561
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	197	1074	116	12	141	683	156	9	393	447	132	1	325	562	97	163	4508
APPROACH %'s :	14.08%	76.77%	8.29%	0.86%	14.26%	69.06%	15.77%	0.91%	40.39%	45.94%	13.57%	0.10%	28.33%	49.00%	8.46%	14.21%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	93	581	59	7	66	338	83	6	194	230	62	0	168	294	59	74	2314
PEAK HR FACTOR :	0.861	0.902	0.641	0.583	0.717	0.889	0.865	0.750	0.851	0.871	0.775	0.000	0.792	0.799	0.615	0.925	0.953
	0.930				0.906				0.887				0.836				

National Data & Surveying Services Intersection Turning Movement Count

Location: N Giddings St & Riggin Ave
City: Visalia
Control: Signalized

Project ID: 21-090072-010
Date: 8/24/2021

Data - Totals

NS/EW Streets:	N Giddings St				N Giddings St				Riggin Ave				Riggin Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	11	2	3	0	3	4	5	0	1	57	8	0	6	62	2	0	164
7:15 AM	8	11	9	0	3	4	1	0	2	73	8	0	3	76	8	0	206
7:30 AM	10	41	5	0	10	23	10	0	8	93	12	0	5	75	4	0	296
7:45 AM	11	54	14	0	10	28	9	0	15	99	11	0	11	71	9	0	342
8:00 AM	15	50	17	0	15	44	16	0	11	87	8	0	9	89	9	0	370
8:15 AM	6	8	4	0	3	23	6	0	10	107	5	0	6	91	6	0	275
8:30 AM	4	7	4	0	1	5	6	0	3	63	9	0	6	83	4	0	195
8:45 AM	3	3	7	0	4	7	5	0	3	53	4	0	0	60	5	0	154
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	68	176	63	0	49	138	58	0	53	632	65	0	46	607	47	0	2002
APPROACH %'s :	22.15%	57.33%	20.52%	0.00%	20.00%	56.33%	23.67%	0.00%	7.07%	84.27%	8.67%	0.00%	6.57%	86.71%	6.71%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	42	153	40	0	38	118	41	0	44	386	36	0	31	326	28	0	1283
PEAK HR FACTOR :	0.700	0.708	0.588	0.000	0.633	0.670	0.641	0.000	0.733	0.902	0.750	0.000	0.705	0.896	0.778	0.000	0.867
	0.716				0.657				0.932				0.900				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	9	4	7	0	4	7	3	0	7	105	4	0	11	75	6	0	242
4:15 PM	8	6	10	0	0	2	3	0	1	108	6	0	7	92	2	0	245
4:30 PM	6	3	9	0	3	5	8	0	2	102	1	0	9	97	3	0	248
4:45 PM	10	4	8	0	2	6	4	0	3	113	3	0	13	98	2	0	266
5:00 PM	4	9	8	0	3	5	2	0	7	113	1	0	11	104	4	0	271
5:15 PM	8	14	14	0	7	13	8	0	8	104	13	0	11	87	4	0	291
5:30 PM	4	8	7	0	4	9	6	0	7	103	9	0	13	109	4	0	283
5:45 PM	8	16	8	0	5	8	4	0	19	107	5	0	5	88	4	0	277
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	57	64	71	0	28	55	38	0	54	855	42	0	80	750	29	0	2123
APPROACH %'s :	29.69%	33.33%	36.98%	0.00%	23.14%	45.45%	31.40%	0.00%	5.68%	89.91%	4.42%	0.00%	9.31%	87.31%	3.38%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	24	47	37	0	19	35	20	0	41	427	28	0	40	388	16	0	1122
PEAK HR FACTOR :	0.750	0.734	0.661	0.000	0.679	0.673	0.625	0.000	0.539	0.945	0.538	0.000	0.769	0.890	1.000	0.000	0.964
	0.750				0.661				0.947				0.881				

National Data & Surveying Services Intersection Turning Movement Count

Location: N Giddings St & Shannon Pkwy
City: Visalia
Control: 4-Way Yield

Project ID: 21-090072-007
Date: 8/24/2021

Data - Totals

NS/EW Streets:	N Giddings St				N Giddings St				Shannon Pkwy				Shannon Pkwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	0	0	0.5	0.5	0	0	0.5	1	0.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	3	2	0	1	3	0	0	3	15	0	1	2	23	0	0	53
7:15 AM	3	13	2	0	3	4	5	0	9	25	1	1	4	9	6	1	86
7:30 AM	0	40	4	0	12	25	21	0	23	31	6	0	5	21	13	0	201
7:45 AM	3	67	6	0	19	36	18	1	28	41	6	0	2	24	25	0	276
8:00 AM	7	55	11	0	29	64	47	0	20	28	5	2	3	16	15	0	302
8:15 AM	3	9	5	0	10	27	19	0	8	11	2	1	4	21	3	0	123
8:30 AM	2	7	4	0	1	5	5	0	2	23	1	0	3	9	0	0	62
8:45 AM	0	2	2	0	1	4	5	0	1	17	1	0	5	14	1	1	54
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	18	196	36	0	76	168	120	1	94	191	22	5	28	137	63	2	1157
APPROACH %'s :	7.20%	78.40%	14.40%	0.00%	20.82%	46.03%	32.88%	0.27%	30.13%	61.22%	7.05%	1.60%	12.17%	59.57%	27.39%	0.87%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	13	171	26	0	70	152	105	1	79	111	19	3	14	82	56	0	902
PEAK HR FACTOR :	0.464	0.638	0.591	0.000	0.603	0.594	0.559	0.250	0.705	0.677	0.792	0.375	0.700	0.854	0.560	0.000	0.747
			0.691				0.586				0.707				0.745		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	0	0	0.5	0.5	0	0	0.5	1	0.5	0	0.5	1	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	5	2	1	4	3	3	0	1	21	1	1	6	19	2	0	71
4:15 PM	2	3	3	0	3	0	3	0	1	22	2	0	4	30	0	1	74
4:30 PM	0	1	5	0	2	4	3	0	2	20	1	0	3	22	1	1	65
4:45 PM	0	4	0	0	1	4	6	0	3	28	1	0	6	37	2	1	93
5:00 PM	1	9	6	0	3	5	10	0	8	22	1	0	4	20	5	1	95
5:15 PM	2	12	9	0	1	11	4	0	2	31	1	0	12	26	3	1	115
5:30 PM	1	9	6	0	3	5	10	0	8	22	1	0	4	20	5	1	95
5:45 PM	1	12	23	0	2	5	2	0	5	34	4	2	5	24	3	1	123
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	9	55	54	1	19	37	41	0	30	200	12	3	44	198	21	7	731
APPROACH %'s :	7.56%	46.22%	45.38%	0.84%	19.59%	38.14%	42.27%	0.00%	12.24%	81.63%	4.90%	1.22%	16.30%	73.33%	7.78%	2.59%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	5	42	44	0	9	26	26	0	23	109	7	2	25	90	16	4	428
PEAK HR FACTOR :	0.625	0.875	0.478	0.000	0.750	0.591	0.650	0.000	0.719	0.801	0.438	0.250	0.521	0.865	0.800	1.000	0.870
			0.632				0.847				0.783				0.804		

National Data & Surveying Services Intersection Turning Movement Count

Location: Mooney Blvd & W Ferguson Ave
City: Visalia
Control: 4-Way Stop

Project ID: 21-090001-006
Date: 1/5/2021

Data - Totals

NS/EW Streets:	Mooney Blvd				Mooney Blvd				W Ferguson Ave				W Ferguson Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	1.5	0.5	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	11	2	0	2	17	0	0	2	9	1	0	4	18	2	0	75
7:15 AM	1	11	3	0	7	14	3	0	2	15	4	0	2	16	3	0	81
7:30 AM	3	15	6	0	10	33	4	0	8	26	5	0	8	17	5	0	140
7:45 AM	6	19	1	0	9	32	6	0	5	32	9	0	2	28	3	0	152
8:00 AM	4	20	6	0	10	30	4	0	3	26	7	0	3	13	4	0	130
8:15 AM	5	25	4	0	4	22	3	0	3	14	4	0	3	18	2	0	107
8:30 AM	6	21	5	0	6	30	8	0	5	13	8	0	6	19	4	0	131
8:45 AM	4	12	1	0	7	21	2	0	2	10	8	0	5	21	3	0	96
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	36	134	28	0	55	199	30	0	30	145	46	0	33	150	26	0	912
APPROACH %'s :	18.18%	67.68%	14.14%	0.00%	19.37%	70.07%	10.56%	0.00%	13.57%	65.61%	20.81%	0.00%	15.79%	71.77%	12.44%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	18	79	17	0	33	117	17	0	19	98	25	0	16	76	14	0	529
PEAK HR FACTOR :	0.750	0.790	0.708	0.000	0.825	0.886	0.708	0.000	0.594	0.766	0.694	0.000	0.500	0.679	0.700	0.000	0.870
	0.838				0.888				0.772				0.803				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	1.5	0.5	0	1	2	0	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	10	50	10	0	13	39	7	0	7	48	14	0	8	37	11	0	254
4:15 PM	13	47	8	0	10	38	8	0	13	37	10	0	12	39	11	0	246
4:30 PM	14	49	18	0	18	37	5	0	16	43	7	0	2	34	15	0	258
4:45 PM	10	49	18	0	14	45	5	0	8	37	9	0	13	32	14	0	254
5:00 PM	18	47	25	0	9	38	6	0	11	37	6	0	6	45	11	0	259
5:15 PM	17	57	20	0	15	49	11	0	8	52	9	0	8	44	9	0	299
5:30 PM	12	57	19	0	11	48	13	0	10	48	6	0	6	48	8	0	286
5:45 PM	9	43	16	0	13	38	5	0	10	33	9	0	5	43	8	0	232
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	103	399	134	0	103	332	60	0	83	335	70	0	60	322	87	0	2088
APPROACH %'s :	16.19%	62.74%	21.07%	0.00%	20.81%	67.07%	12.12%	0.00%	17.01%	68.65%	14.34%	0.00%	12.79%	68.66%	18.55%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	57	210	82	0	49	180	35	0	37	174	30	0	33	169	42	0	1098
PEAK HR FACTOR :	0.792	0.921	0.820	0.000	0.817	0.918	0.673	0.000	0.841	0.837	0.833	0.000	0.635	0.880	0.750	0.000	0.918
	0.928				0.880				0.873				0.984				

National Data & Surveying Services Intersection Turning Movement Count

Location: Mooney Blvd & Pratt Rd
City: Visalia
Control: No Control

Project ID: 21-090001-002
Date: 1/5/2021

Data - Totals

NS/EW Streets:	Mooney Blvd				Mooney Blvd				Pratt Rd				Pratt Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	7
7:15 AM	8	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	12
7:30 AM	7	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	13
7:45 AM	5	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	12
8:00 AM	13	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	23
8:15 AM	10	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	20
8:30 AM	8	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	13
8:45 AM	6	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	18
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	60	0	0	0	0	0	0	0	0	0	58	0	0	0	0	0	118
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	37	0	0	0	0	0	0	0	0	0	37	0	0	0	0	0	74
PEAK HR FACTOR :	0.712	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.771	0.000	0.000	0.000	0.000	0.000	0.804
	0.712								0.771								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	18	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	35
4:15 PM	7	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	25
4:30 PM	13	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	28
4:45 PM	5	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	25
5:00 PM	10	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	26
5:15 PM	11	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	25
5:30 PM	10	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	21
5:45 PM	13	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	25
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	87	0	0	0	0	0	0	0	0	0	123	0	0	0	0	0	210
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%					
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	43	0	0	0	0	0	0	0	0	0	70	0	0	0	0	0	113
PEAK HR FACTOR :	0.597	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875	0.000	0.000	0.000	0.000	0.000	0.807
	0.597								0.875								

National Data & Surveying Services Intersection Turning Movement Count

Location: Mooney Blvd & W Riggin Ave
City: Visalia
Control: Signalized

Project ID: 21-090001-005
Date: 1/5/2021

Data - Totals

NS/EW Streets:	Mooney Blvd				Mooney Blvd				W Riggin Ave				W Riggin Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	1	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	9	2	0	4	5	5	0	14	39	4	4	8	41	8	3	158
7:15 AM	9	6	1	0	3	5	4	0	14	25	5	1	5	52	7	1	138
7:30 AM	15	13	13	0	8	18	10	0	19	40	6	2	13	43	3	4	207
7:45 AM	11	13	12	0	8	19	12	0	17	47	8	3	10	57	8	2	227
8:00 AM	14	10	9	0	9	14	9	0	9	53	6	4	6	44	7	2	196
8:15 AM	12	14	2	0	8	14	8	0	11	38	2	4	5	55	4	3	180
8:30 AM	9	16	4	0	11	15	8	0	12	31	8	2	11	56	8	8	199
8:45 AM	3	14	10	0	7	7	4	0	12	51	8	2	15	53	5	6	197
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	85	95	53	0	58	97	60	0	108	324	47	22	73	401	50	29	1502
APPROACH %'s :	36.48%	40.77%	22.75%	0.00%	26.98%	45.12%	27.91%	0.00%	21.56%	64.67%	9.38%	4.39%	13.20%	72.51%	9.04%	5.24%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	52	50	36	0	33	65	39	0	56	178	22	13	34	199	22	11	810
PEAK HR FACTOR :	0.867	0.893	0.692	0.000	0.917	0.855	0.813	0.000	0.737	0.840	0.688	0.813	0.654	0.873	0.688	0.688	0.892
	0.841				0.878				0.897				0.864				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	1	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	33	23	0	15	31	10	0	9	106	22	6	19	71	11	4	374
4:15 PM	19	29	11	0	8	15	7	0	19	94	14	7	29	91	7	5	355
4:30 PM	25	33	14	0	11	24	6	0	12	81	20	7	14	79	11	6	343
4:45 PM	14	34	12	0	9	21	11	0	23	92	20	5	26	74	13	0	354
5:00 PM	14	29	9	0	13	24	13	0	12	104	19	8	13	82	12	3	355
5:15 PM	11	31	11	0	15	23	3	0	14	102	24	4	21	85	16	4	364
5:30 PM	16	37	8	0	9	36	6	0	12	88	16	3	23	78	15	5	352
5:45 PM	13	26	13	0	12	18	4	0	16	93	23	5	24	69	8	1	325
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	126	252	101	0	92	192	60	0	117	760	158	45	169	629	93	28	2822
APPROACH %'s :	26.30%	52.61%	21.09%	0.00%	26.74%	55.81%	17.44%	0.00%	10.83%	70.37%	14.63%	4.17%	18.39%	68.44%	10.12%	3.05%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	72	129	60	0	43	91	34	0	63	373	76	25	88	315	42	15	1426
PEAK HR FACTOR :	0.720	0.949	0.652	0.000	0.717	0.734	0.773	0.000	0.685	0.880	0.864	0.893	0.759	0.865	0.808	0.625	0.953
	0.906				0.750				0.939				0.871				

National Data & Surveying Services Intersection Turning Movement Count

Location: Mooney Blvd & Riverway Dr
City: Visalia
Control: 3-Way Stop (NB/SB/WB)

Project ID: 21-090001-003
Date: 1/5/2021

Data - Totals

NS/EW Streets:	Mooney Blvd				Mooney Blvd				Riverway Dr				Riverway Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	2	1	0	1	2	0	0	0	0	0	0	2	0	1	0	9
7:15 AM	0	3	1	0	2	2	0	0	0	0	0	0	0	0	5	0	13
7:30 AM	0	8	1	3	3	3	0	0	0	0	0	0	3	0	0	0	21
7:45 AM	0	2	6	3	5	2	0	0	0	0	0	0	3	0	3	0	24
8:00 AM	0	6	2	1	5	5	0	0	0	0	0	0	2	0	7	0	28
8:15 AM	0	5	2	2	7	3	0	0	0	0	0	0	2	0	5	0	26
8:30 AM	0	2	2	1	3	2	0	0	0	0	0	0	3	0	7	0	20
8:45 AM	0	3	1	1	10	2	0	0	0	0	0	0	0	0	4	0	21
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	31	16	11	36	21	0	0	0	0	0	0	15	0	32	0	162
APPROACH %'s :	0.00%	53.45%	27.59%	18.97%	63.16%	36.84%	0.00%	0.00%					31.91%	0.00%	68.09%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	21	11	9	20	13	0	0	0	0	0	0	10	0	15	0	99
PEAK HR FACTOR :	0.000	0.656	0.458	0.750	0.714	0.650	0.000	0.000	0.000	0.000	0.000	0.000	0.833	0.000	0.536	0.000	0.884
		0.854				0.825								0.694			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	9	2	1	12	5	0	0	0	0	0	0	3	0	9	0	41
4:15 PM	0	4	1	1	12	6	0	0	0	0	0	0	2	0	4	0	30
4:30 PM	0	5	3	1	11	4	0	0	0	0	0	0	3	0	7	0	34
4:45 PM	0	5	1	1	15	5	0	0	0	0	0	0	2	0	0	0	29
5:00 PM	0	3	4	2	10	6	0	0	0	0	0	0	7	0	7	0	39
5:15 PM	0	6	2	3	8	6	0	0	0	0	0	0	5	0	5	0	35
5:30 PM	0	3	2	4	5	6	0	0	0	0	0	0	5	0	7	0	32
5:45 PM	0	7	8	2	5	7	0	0	0	0	0	0	3	0	6	0	38
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	42	23	15	78	45	0	0	0	0	0	0	30	0	45	0	278
APPROACH %'s :	0.00%	52.50%	28.75%	18.75%	63.41%	36.59%	0.00%	0.00%					40.00%	0.00%	60.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	19	16	11	28	25	0	0	0	0	0	0	20	0	25	0	144
PEAK HR FACTOR :	0.000	0.679	0.500	0.688	0.700	0.893	0.000	0.000	0.000	0.000	0.000	0.000	0.714	0.000	0.893	0.000	0.923
		0.676				0.828								0.804			

National Data & Surveying Services Intersection Turning Movement Count

Location: Mooney Blvd & Shannon Pkwy
City: Visalia
Control: 4-Way Yield

Project ID: 21-090001-004
Date: 1/5/2021

Data - Totals

NS/EW Streets:	Mooney Blvd				Mooney Blvd				Shannon Pkwy				Shannon Pkwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	4	3	0	0	6	1	0	0	4	1	0	6	3	0	0	28
7:15 AM	2	4	7	0	1	3	0	0	0	3	2	0	1	3	0	0	26
7:30 AM	2	6	9	0	1	7	2	1	0	3	3	0	5	3	0	0	42
7:45 AM	0	9	6	0	0	10	1	0	0	7	1	0	4	8	1	0	47
8:00 AM	1	10	6	0	3	5	1	0	0	5	2	0	4	4	1	0	42
8:15 AM	1	5	6	1	1	11	2	0	0	11	2	0	6	3	1	0	50
8:30 AM	0	5	4	1	0	6	1	0	1	3	1	0	5	4	1	0	32
8:45 AM	0	7	4	0	2	6	0	0	0	2	1	0	7	2	1	0	32
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	50	45	2	8	54	8	1	1	38	13	0	38	30	5	0	299
APPROACH %'s :	5.83%	48.54%	43.69%	1.94%	11.27%	76.06%	11.27%	1.41%	1.92%	73.08%	25.00%	0.00%	52.05%	41.10%	6.85%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	4	30	27	1	5	33	6	1	0	26	8	0	19	18	3	0	181
PEAK HR FACTOR :	0.500	0.750	0.750	0.250	0.417	0.750	0.750	0.250	0.000	0.591	0.667	0.000	0.792	0.563	0.750	0.000	0.905
		0.912				0.804				0.654				0.769			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	12	6	0	2	8	3	0	0	12	1	0	5	14	1	0	65
4:15 PM	1	6	8	0	1	4	1	0	1	10	2	0	7	12	2	0	55
4:30 PM	2	14	10	0	1	9	1	0	1	8	2	0	6	10	4	0	68
4:45 PM	2	9	10	1	3	4	1	0	3	11	2	0	6	13	6	0	71
5:00 PM	3	7	13	0	3	14	1	2	0	11	5	0	8	14	1	0	82
5:15 PM	4	10	5	0	1	11	3	1	2	8	0	1	9	11	7	0	73
5:30 PM	2	16	12	0	1	18	2	0	1	7	4	0	8	20	3	0	94
5:45 PM	2	14	6	0	3	8	4	1	0	9	4	0	11	6	3	0	71
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	17	88	70	1	15	76	16	4	8	76	20	1	60	100	27	0	579
APPROACH %'s :	9.66%	50.00%	39.77%	0.57%	13.51%	68.47%	14.41%	3.60%	7.62%	72.38%	19.05%	0.95%	32.09%	53.48%	14.44%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	11	47	36	0	8	51	10	4	3	35	13	1	36	51	14	0	320
PEAK HR FACTOR :	0.688	0.734	0.692	0.000	0.667	0.708	0.625	0.500	0.375	0.795	0.650	0.250	0.818	0.638	0.500	0.000	0.851
		0.783				0.869				0.813				0.815			

APPENDIX B

Synchro Worksheets

EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	31	45	207	155	41
Future Vol, veh/h	21	31	45	207	155	41
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	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	35	51	235	176	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	537	200	223	0	-	0
Stage 1	200	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	503	838	1340	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	481	838	1340	-	-	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	721	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1340	-	645	-	-
HCM Lane V/C Ratio	0.038	-	0.092	-	-
HCM Control Delay (s)	7.8	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	103	251	25	35	205
Future Vol, veh/h	50	103	251	25	35	205
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	56	116	282	28	39	230

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	590	282	0	0	310	0
Stage 1	282	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	469	755	-	-	1245	-
Stage 1	763	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	452	755	-	-	1245	-
Mov Cap-2 Maneuver	452	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	716	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	452	755	1245	-
HCM Lane V/C Ratio	-	-	0.124	0.153	0.032	-
HCM Control Delay (s)	-	-	14.1	10.6	8	0
HCM Lane LOS	-	-	B	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.5	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	65	9	2	73	4	9
Future Vol, veh/h	65	9	2	73	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	72	10	2	81	4	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	82	0	162	77
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	85	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1509	-	826	981
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1509	-	825	981
Mov Cap-2 Maneuver	-	-	-	-	825	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	935	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	981	-	-	1509	-
HCM Lane V/C Ratio	0.005	0.01	-	-	0.001	-
HCM Control Delay (s)	9.4	8.7	-	-	7.4	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	51	51	0	0	0
Future Vol, veh/h	0	51	51	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	64	64	0	0	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	128	0
Stage 1	-	-	0	-
Stage 2	-	-	128	-
Critical Hdwy	4.13	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.53	-
Follow-up Hdwy	2.227	-	4.027	3.327
Pot Cap-1 Maneuver	-	-	761	-
Stage 1	-	-	-	-
Stage 2	-	-	788	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS		A

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	53	17	270	259	2
Future Vol, veh/h	9	53	17	270	259	2
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	62	20	318	305	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	505	306	307	0	-	0
Stage 1	306	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	509	730	1246	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	501	730	1246	-	-	-
Mov Cap-2 Maneuver	501	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	813	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1246	-	685	-	-
HCM Lane V/C Ratio	0.016	-	0.106	-	-
HCM Control Delay (s)	7.9	-	10.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	144	26	262	75	10	304
Future Vol, veh/h	144	26	262	75	10	304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	160	29	291	83	11	338

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	524	187	0	0	374	0
Stage 1	333	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	480	820	-	-	1174	-
Stage 1	695	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	476	820	-	-	1174	-
Mov Cap-2 Maneuver	476	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	476	820	1174	-
HCM Lane V/C Ratio	-	-	0.336	0.035	0.009	-
HCM Control Delay (s)	-	-	16.3	9.6	8.1	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.5	0.1	0	-

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	21	41	15	27	18
Future Vol, veh/h	14	21	41	15	27	18
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	16	24	47	17	31	20
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.1	7.4	7.6
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	40%	60%
Vol Thru, %	100%	0%	0%	40%
Vol Right, %	0%	100%	60%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	15	35	45
LT Vol	0	0	14	27
Through Vol	41	0	0	18
RT Vol	0	15	21	0
Lane Flow Rate	47	17	40	51
Geometry Grp	7	7	2	5
Degree of Util (X)	0.06	0.019	0.043	0.061
Departure Headway (Hd)	4.646	3.945	3.863	4.287
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	772	907	916	834
Service Time	2.371	1.67	1.935	2.322
HCM Lane V/C Ratio	0.061	0.019	0.044	0.061
HCM Control Delay	7.7	6.7	7.1	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.1	0.2

Intersection	
Intersection Delay, s/veh	20.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	404	44	73	435	28	93	68	95	47	81	56
Future Vol, veh/h	38	404	44	73	435	28	93	68	95	47	81	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	41	434	47	78	468	30	100	73	102	51	87	60
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	22	22.8	16.3	14
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	42%	0%	100%	75%	0%	100%	84%	0%	100%	0%
Vol Right, %	0%	58%	0%	0%	25%	0%	0%	16%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	163	38	269	179	73	290	173	47	81	56
LT Vol	93	0	38	0	0	73	0	0	47	0	0
Through Vol	0	68	0	269	135	0	290	145	0	81	0
RT Vol	0	95	0	0	44	0	0	28	0	0	56
Lane Flow Rate	100	175	41	290	192	78	312	186	51	87	60
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.259	0.41	0.1	0.671	0.436	0.19	0.712	0.419	0.138	0.226	0.144
Departure Headway (Hd)	9.336	8.428	8.853	8.343	8.167	8.735	8.225	8.11	9.857	9.347	8.634
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	385	428	406	434	442	412	443	446	364	384	415
Service Time	7.084	6.176	6.573	6.063	5.887	6.454	5.944	5.829	7.613	7.104	6.39
HCM Lane V/C Ratio	0.26	0.409	0.101	0.668	0.434	0.189	0.704	0.417	0.14	0.227	0.145
HCM Control Delay	15.3	16.9	12.6	26.5	17.1	13.5	28.9	16.6	14.2	14.8	12.8
HCM Lane LOS	C	C	B	D	C	B	D	C	B	B	B
HCM 95th-tile Q	1	2	0.3	4.8	2.2	0.7	5.5	2	0.5	0.9	0.5

Intersection	
Intersection Delay, s/veh	49.3
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	386	36	31	326	28	42	153	40	38	118	41
Future Vol, veh/h	44	386	36	31	326	28	42	153	40	38	118	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	51	444	41	36	375	32	48	176	46	44	136	47
Number of Lanes	1	1	0	1	1	0	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	78.2	44.6	23.7	20.7
HCM LOS	F	E	C	C

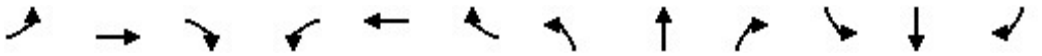
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	18%	100%	0%	100%	0%	19%
Vol Thru, %	65%	0%	91%	0%	92%	60%
Vol Right, %	17%	0%	9%	0%	8%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	235	44	422	31	354	197
LT Vol	42	44	0	31	0	38
Through Vol	153	0	386	0	326	118
RT Vol	40	0	36	0	28	41
Lane Flow Rate	270	51	485	36	407	226
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.611	0.118	1.055	0.083	0.886	0.524
Departure Headway (Hd)	8.396	8.407	7.827	8.644	8.068	8.602
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	432	429	466	417	452	421
Service Time	6.396	6.107	5.527	6.344	5.768	6.602
HCM Lane V/C Ratio	0.625	0.119	1.041	0.086	0.9	0.537
HCM Control Delay	23.7	12.2	85.1	12.1	47.4	20.7
HCM Lane LOS	C	B	F	B	E	C
HCM 95th-tile Q	4	0.4	15.2	0.3	9.4	3

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	134	34	22	104	19	25	108	23	45	160	23
Future Vol, veh/h	26	134	34	22	104	19	25	108	23	45	160	23
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	30	154	39	25	120	22	29	124	26	52	184	26
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	11.7	10.6	10.6	10.4
HCM LOS	B	B	B	B

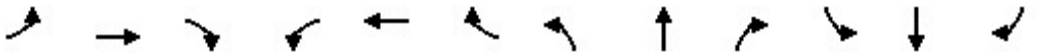
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	80%	0%	100%	0%	0%	100%	70%
Vol Right, %	0%	0%	100%	0%	20%	0%	0%	100%	0%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	108	23	26	168	22	104	19	45	107	76
LT Vol	25	0	0	26	0	22	0	0	45	0	0
Through Vol	0	108	0	0	134	0	104	0	0	107	53
RT Vol	0	0	23	0	34	0	0	19	0	0	23
Lane Flow Rate	29	124	26	30	193	25	120	22	52	123	88
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.056	0.223	0.042	0.057	0.331	0.049	0.215	0.035	0.098	0.215	0.148
Departure Headway (Hd)	6.984	6.48	5.774	6.812	6.171	6.988	6.486	5.784	6.806	6.302	6.09
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	512	554	618	525	581	512	552	617	526	569	588
Service Time	4.736	4.231	3.525	4.557	3.916	4.74	4.239	3.536	4.553	4.049	3.837
HCM Lane V/C Ratio	0.057	0.224	0.042	0.057	0.332	0.049	0.217	0.036	0.099	0.216	0.15
HCM Control Delay	10.2	11.1	8.8	10	12	10.1	11	8.7	10.3	10.8	9.9
HCM Lane LOS	B	B	A	A	B	B	B	A	B	B	A
HCM 95th-tile Q	0.2	0.8	0.1	0.2	1.4	0.2	0.8	0.1	0.3	0.8	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	261	111	132	246	41	89	263	51	69	370	63
Future Volume (veh/h)	117	261	111	132	246	41	89	263	51	69	370	63
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	123	275	117	139	259	43	94	277	54	73	389	66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	157	451	201	175	487	217	238	1443	644	238	1443	644
Arrive On Green	0.09	0.13	0.13	0.10	0.14	0.14	0.07	0.41	0.41	0.07	0.41	0.41
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	123	275	117	139	259	43	94	277	54	73	389	66
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	5.0	5.4	5.1	5.6	5.0	1.3	1.9	3.7	0.9	1.5	5.4	1.9
Cycle Q Clear(g_c), s	5.0	5.4	5.1	5.6	5.0	1.3	1.9	3.7	0.9	1.5	5.4	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	451	201	175	487	217	238	1443	644	238	1443	644
V/C Ratio(X)	0.79	0.61	0.58	0.80	0.53	0.20	0.39	0.19	0.08	0.31	0.27	0.10
Avail Cap(c_a), veh/h	245	1595	711	235	1575	703	280	1443	644	280	1443	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	30.1	30.0	32.2	29.2	15.7	32.4	13.7	4.5	32.2	14.2	13.1
Incr Delay (d2), s/veh	8.5	1.3	2.6	12.7	0.9	0.4	1.1	0.3	0.3	0.7	0.5	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	2.3	2.2	1.9	2.8	2.0	0.6	0.8	1.3	0.5	0.6	1.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	31.4	32.6	44.8	30.1	16.1	33.5	14.0	4.7	33.0	14.6	13.5
LnGrp LOS	D	C	C	D	C	B	C	B	A	C	B	B
Approach Vol, veh/h		515			441			425			528	
Approach Delay, s/veh		34.0			33.4			17.1			17.0	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	35.4	12.5	14.6	10.4	35.4	11.8	15.4
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	6.0	30.1	9.7	33.0	6.0	30.1	10.1	32.6
Max Q Clear Time (g_c+I1), s	3.5	5.7	7.6	7.4	3.9	7.4	7.0	7.0
Green Ext Time (p_c), s	0.0	1.7	0.1	2.0	0.0	2.5	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C



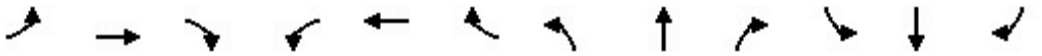
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	328	78	183	429	38	90	281	121	27	263	103
Future Volume (veh/h)	98	328	78	183	429	38	90	281	121	27	263	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	353	84	197	461	41	97	302	130	29	283	111
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	133	602	268	276	602	268	124	1002	422	63	947	363
Arrive On Green	0.08	0.17	0.17	0.08	0.17	0.17	0.07	0.41	0.41	0.04	0.38	0.38
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	2418	1018	1767	2492	955
Grp Volume(v), veh/h	105	353	84	197	461	41	97	218	214	29	198	196
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1672	1767	1763	1684
Q Serve(g_s), s	4.8	7.5	3.8	4.6	10.2	1.8	4.4	6.8	7.0	1.3	6.4	6.7
Cycle Q Clear(g_c), s	4.8	7.5	3.8	4.6	10.2	1.8	4.4	6.8	7.0	1.3	6.4	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.61	1.00		0.57
Lane Grp Cap(c), veh/h	133	602	268	276	602	268	124	731	693	63	670	640
V/C Ratio(X)	0.79	0.59	0.31	0.71	0.77	0.15	0.79	0.30	0.31	0.46	0.30	0.31
Avail Cap(c_a), veh/h	169	873	389	319	864	385	147	731	693	130	670	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	31.2	29.6	36.6	32.3	28.8	37.3	16.0	16.0	38.6	17.7	17.7
Incr Delay (d2), s/veh	17.2	0.9	0.7	6.2	2.6	0.3	20.5	1.0	1.2	5.2	1.1	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	2.6	3.0	1.4	2.0	4.3	0.7	2.5	2.6	2.5	0.6	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	32.1	30.3	42.8	34.8	29.1	57.8	17.0	17.2	43.8	18.8	19.0
LnGrp LOS	D	C	C	D	C	C	E	B	B	D	B	B
Approach Vol, veh/h		542			699			529			423	
Approach Delay, s/veh		36.1			36.8			24.6			20.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	40.0	12.4	20.1	11.9	37.2	12.4	20.1
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	6.0	31.8	7.6	20.2	6.8	31.0	7.8	* 20
Max Q Clear Time (g_c+I1), s	3.3	9.0	6.6	9.5	6.4	8.7	6.8	12.2
Green Ext Time (p_c), s	0.0	2.2	0.1	1.7	0.0	2.0	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	244	30	63	273	30	71	69	49	45	89	53
Future Volume (veh/h)	95	244	30	63	273	30	71	69	49	45	89	53
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	107	274	34	71	307	34	80	78	55	51	100	60
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	137	519	232	113	471	210	119	775	657	95	750	635
Arrive On Green	0.08	0.15	0.15	0.06	0.13	0.13	0.07	0.42	0.42	0.05	0.40	0.40
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	107	274	34	71	307	34	80	78	55	51	100	60
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	4.2	5.1	1.3	2.8	5.8	1.4	3.1	1.8	1.5	2.0	2.4	1.7
Cycle Q Clear(g_c), s	4.2	5.1	1.3	2.8	5.8	1.4	3.1	1.8	1.5	2.0	2.4	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	137	519	232	113	471	210	119	775	657	95	750	635
V/C Ratio(X)	0.78	0.53	0.15	0.63	0.65	0.16	0.67	0.10	0.08	0.54	0.13	0.09
Avail Cap(c_a), veh/h	230	1144	510	233	1149	513	173	775	657	173	750	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	27.8	26.2	32.2	29.0	27.1	32.1	12.5	12.4	32.5	13.2	13.0
Incr Delay (d2), s/veh	9.1	0.8	0.3	5.6	1.5	0.4	6.4	0.3	0.3	4.6	0.4	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	2.0	2.0	0.5	1.3	2.4	0.5	1.5	0.7	0.5	0.9	1.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	28.6	26.5	37.9	30.5	27.4	38.6	12.8	12.7	37.2	13.6	13.3
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		415			412			213			211	
Approach Delay, s/veh		31.7			31.5			22.4			19.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	34.9	10.3	16.2	10.1	33.9	11.3	15.2
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	6.9	28.5	9.3	22.9	6.9	28.5	9.2	23.0
Max Q Clear Time (g_c+I1), s	4.0	3.8	4.8	7.1	5.1	4.4	6.2	7.8
Green Ext Time (p_c), s	0.0	0.5	0.0	1.4	0.0	0.6	0.1	1.6

Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	182	288	189	70
Demand Flow Rate, veh/h	187	297	195	72
Vehicles Circulating, veh/h	154	149	160	294
Vehicles Exiting, veh/h	212	206	181	152
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	5.4	4.6	4.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	187	297	195	72
Cap Entry Lane, veh/h	1179	1185	1172	1022
Entry HV Adj Factor	0.972	0.971	0.968	0.968
Flow Entry, veh/h	182	288	189	70
Cap Entry, veh/h	1146	1151	1135	989
V/C Ratio	0.159	0.251	0.166	0.070
Control Delay, s/veh	4.5	5.4	4.6	4.3
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0

Intersection	
Intersection Delay, s/veh	3.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	52	60	93	67
Demand Flow Rate, veh/h	53	62	95	68
Vehicles Circulating, veh/h	89	53	50	65
Vehicles Exiting, veh/h	44	92	92	50
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.3	3.2	3.4	3.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	53	62	95	68
Cap Entry Lane, veh/h	1260	1307	1311	1291
Entry HV Adj Factor	0.977	0.971	0.975	0.979
Flow Entry, veh/h	52	60	93	67
Cap Entry, veh/h	1232	1269	1279	1264
V/C Ratio	0.042	0.047	0.072	0.053
Control Delay, s/veh	3.3	3.2	3.4	3.3
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	6.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	282	203	280	438
Demand Flow Rate, veh/h	290	209	289	451
Vehicles Circulating, veh/h	327	365	362	150
Vehicles Exiting, veh/h	274	286	255	424
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.7	4.6	7.1	6.9
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.910	0.090	0.632	0.368	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	264	26	132	77	289	451
Cap Entry Lane, veh/h	1055	1055	1019	1019	954	1184
Entry HV Adj Factor	0.972	0.962	0.968	0.974	0.969	0.971
Flow Entry, veh/h	257	25	128	75	280	438
Cap Entry, veh/h	1025	1014	986	992	925	1150
V/C Ratio	0.250	0.025	0.130	0.076	0.303	0.381
Control Delay, s/veh	5.9	3.8	4.8	4.3	7.1	6.9
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	0	0	1	2

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	49	101	36	233	236	30
Future Vol, veh/h	49	101	36	233	236	30
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	54	112	40	259	262	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	618	279	295	0	-	0
Stage 1	279	-	-	-	-	-
Stage 2	339	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	451	757	1261	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	434	757	1261	-	-	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1261	-	609	-	-
HCM Lane V/C Ratio	0.032	-	0.274	-	-
HCM Control Delay (s)	7.9	0	13.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	28	226	33	44	269
Future Vol, veh/h	18	28	226	33	44	269
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	20	31	254	37	49	302

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	654	254	0	0	291	0
Stage 1	254	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	430	782	-	-	1265	-
Stage 1	786	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	410	782	-	-	1265	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	643	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	410	782	1265	-
HCM Lane V/C Ratio	-	-	0.049	0.04	0.039	-
HCM Control Delay (s)	-	-	14.2	9.8	8	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	63	15	6	89	26	10
Future Vol, veh/h	63	15	6	89	26	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	76	18	7	107	31	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	94	0	206	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	121	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1494	-	780	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	902	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1494	-	776	971
Mov Cap-2 Maneuver	-	-	-	-	776	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	897	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	776	971	-	-	1494	-
HCM Lane V/C Ratio	0.04	0.012	-	-	0.005	-
HCM Control Delay (s)	9.8	8.8	-	-	7.4	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	96	59	0	0	0
Future Vol, veh/h	0	96	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	119	73	0	0	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	146	0
Stage 1	-	-	0	-
Stage 2	-	-	146	-
Critical Hdwy	4.13	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.53	-
Follow-up Hdwy	2.227	-	4.027	3.327
Pot Cap-1 Maneuver	-	-	744	-
Stage 1	-	-	-	-
Stage 2	-	-	774	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS		A

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	27	38	255	274	9
Future Vol, veh/h	5	27	38	255	274	9
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	31	44	297	319	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	561	324	329	0	-	0
Stage 1	324	-	-	-	-	-
Stage 2	237	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	471	713	1223	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	454	713	1223	-	-	-
Mov Cap-2 Maneuver	454	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1223	-	655	-	-
HCM Lane V/C Ratio	0.036	-	0.057	-	-
HCM Control Delay (s)	8.1	-	10.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	4	281	116	12	293
Future Vol, veh/h	80	4	281	116	12	293
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	94	5	331	136	14	345

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	600	234	0	0	467	0
Stage 1	399	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	430	765	-	-	1084	-
Stage 1	644	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	424	765	-	-	1084	-
Mov Cap-2 Maneuver	424	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	799	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	424	765	1084	-
HCM Lane V/C Ratio	-	-	0.222	0.006	0.013	-
HCM Control Delay (s)	-	-	15.9	9.7	8.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	34	41	22	38	34
Future Vol, veh/h	27	34	41	22	38	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	29	37	45	24	41	37
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.4	7.4	7.8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	44%	53%
Vol Thru, %	100%	0%	0%	47%
Vol Right, %	0%	100%	56%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	22	61	72
LT Vol	0	0	27	38
Through Vol	41	0	0	34
RT Vol	0	22	34	0
Lane Flow Rate	45	24	66	78
Geometry Grp	7	7	2	5
Degree of Util (X)	0.058	0.027	0.073	0.094
Departure Headway (Hd)	4.709	4.008	3.953	4.325
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	758	889	892	824
Service Time	2.451	1.75	2.042	2.373
HCM Lane V/C Ratio	0.059	0.027	0.074	0.095
HCM Control Delay	7.7	6.9	7.4	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.2	0.3

Intersection	
Intersection Delay, s/veh	21.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	516	67	96	370	40	51	66	59	38	52	32
Future Vol, veh/h	42	516	67	96	370	40	51	66	59	38	52	32
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	47	580	75	108	416	45	57	74	66	43	58	36
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	28.1	18.4	14.9	13.3
HCM LOS	D	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	53%	0%	100%	72%	0%	100%	76%	0%	100%	0%
Vol Right, %	0%	47%	0%	0%	28%	0%	0%	24%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	125	42	344	239	96	247	163	38	52	32
LT Vol	51	0	42	0	0	96	0	0	38	0	0
Through Vol	0	66	0	344	172	0	247	123	0	52	0
RT Vol	0	59	0	0	67	0	0	40	0	0	32
Lane Flow Rate	57	140	47	387	269	108	277	184	43	58	36
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.148	0.33	0.106	0.817	0.553	0.251	0.605	0.392	0.115	0.151	0.085
Departure Headway (Hd)	9.282	8.452	8.112	7.605	7.407	8.364	7.856	7.682	9.724	9.316	8.504
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	385	424	440	475	486	428	457	466	367	387	419
Service Time	7.07	6.24	5.887	5.38	5.181	6.142	5.634	5.46	7.524	7.016	6.304
HCM Lane V/C Ratio	0.148	0.33	0.107	0.815	0.553	0.252	0.606	0.395	0.117	0.15	0.086
HCM Control Delay	13.7	15.4	11.9	36.4	19	13.9	22.1	15.4	13.8	13.7	12.1
HCM Lane LOS	B	C	B	E	C	B	C	C	B	B	B
HCM 95th-tile Q	0.5	1.4	0.4	7.8	3.3	1	3.9	1.8	0.4	0.5	0.3

Intersection	
Intersection Delay, s/veh	19.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	427	28	40	388	16	24	47	37	19	35	20
Future Vol, veh/h	41	427	28	40	388	16	24	47	37	19	35	20
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	43	445	29	42	404	17	25	49	39	20	36	21
Number of Lanes	1	1	0	1	1	0	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	22.8	19.1	11.2	10.9
HCM LOS	C	C	B	B

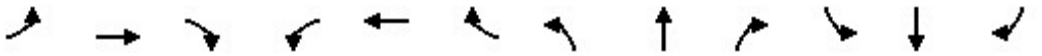
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	100%	0%	100%	0%	26%
Vol Thru, %	44%	0%	94%	0%	96%	47%
Vol Right, %	34%	0%	6%	0%	4%	27%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	41	455	40	404	74
LT Vol	24	41	0	40	0	19
Through Vol	47	0	427	0	388	35
RT Vol	37	0	28	0	16	20
Lane Flow Rate	113	43	474	42	421	77
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.203	0.074	0.754	0.073	0.678	0.143
Departure Headway (Hd)	6.487	6.274	5.724	6.335	5.8	6.656
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	550	570	630	565	623	536
Service Time	4.563	4.022	3.472	4.084	3.549	4.736
HCM Lane V/C Ratio	0.205	0.075	0.752	0.074	0.676	0.144
HCM Control Delay	11.2	9.5	24	9.6	20	10.9
HCM Lane LOS	B	A	C	A	C	B
HCM 95th-tile Q	0.8	0.2	6.8	0.2	5.2	0.5

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	51	238	41	45	232	58	78	288	112	67	247	48
Future Vol, veh/h	51	238	41	45	232	58	78	288	112	67	247	48
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	55	259	45	49	252	63	85	313	122	73	268	52
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	33.3	25	30.2	18.6
HCM LOS	D	C	D	C

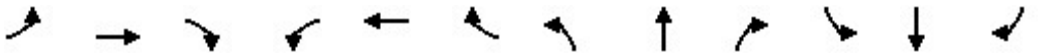
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	85%	0%	100%	0%	0%	100%	63%
Vol Right, %	0%	0%	100%	0%	15%	0%	0%	100%	0%	0%	37%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	78	288	112	51	279	45	232	58	67	165	130
LT Vol	78	0	0	51	0	45	0	0	67	0	0
Through Vol	0	288	0	0	238	0	232	0	0	165	82
RT Vol	0	0	112	0	41	0	0	58	0	0	48
Lane Flow Rate	85	313	122	55	303	49	252	63	73	179	142
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.229	0.8	0.287	0.15	0.77	0.137	0.67	0.155	0.204	0.476	0.366
Departure Headway (Hd)	9.718	9.203	8.483	9.746	9.143	10.083	9.571	8.855	10.094	9.578	9.312
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	369	391	422	368	394	355	376	403	355	376	385
Service Time	7.501	6.986	6.265	7.524	6.921	7.87	7.358	6.642	7.885	7.368	7.102
HCM Lane V/C Ratio	0.23	0.801	0.289	0.149	0.769	0.138	0.67	0.156	0.206	0.476	0.369
HCM Control Delay	15.4	40.3	14.7	14.2	36.8	14.5	29.9	13.3	15.5	20.8	17.4
HCM Lane LOS	C	E	B	B	E	B	D	B	C	C	C
HCM 95th-tile Q	0.9	7	1.2	0.5	6.4	0.5	4.7	0.5	0.8	2.5	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	230	62	242	294	59	100	581	59	72	338	83
Future Volume (veh/h)	194	230	62	242	294	59	100	581	59	72	338	83
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	204	242	65	255	309	62	105	612	62	76	356	87
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	249	388	173	303	496	221	230	1374	613	208	1351	603
Arrive On Green	0.14	0.11	0.11	0.17	0.14	0.14	0.07	0.39	0.39	0.06	0.39	0.39
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	204	242	65	255	309	62	105	612	62	76	356	87
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	9.0	5.3	2.4	11.2	6.6	2.2	2.4	10.3	2.0	1.7	5.6	2.9
Cycle Q Clear(g_c), s	9.0	5.3	2.4	11.2	6.6	2.2	2.4	10.3	2.0	1.7	5.6	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	249	388	173	303	496	221	230	1374	613	208	1351	603
V/C Ratio(X)	0.82	0.62	0.38	0.84	0.62	0.28	0.46	0.45	0.10	0.37	0.26	0.14
Avail Cap(c_a), veh/h	518	1451	647	611	1636	730	327	1374	613	280	1351	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	34.1	19.9	32.2	32.4	18.5	36.0	17.9	15.4	36.1	16.8	16.0
Incr Delay (d2), s/veh	6.6	1.6	1.3	6.3	1.3	0.7	1.4	1.0	0.3	1.1	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.2	1.2	5.0	2.7	1.0	1.0	3.9	0.7	0.7	2.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	35.7	21.3	38.4	33.7	19.2	37.4	19.0	15.7	37.2	17.3	16.5
LnGrp LOS	D	D	C	D	C	B	D	B	B	D	B	B
Approach Vol, veh/h		511			626			779			519	
Approach Delay, s/veh		35.6			34.2			21.2			20.1	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	36.8	19.0	14.1	10.7	36.3	16.6	16.6
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	6.6	31.5	27.7	33.0	7.7	30.4	23.5	37.2
Max Q Clear Time (g_c+I1), s	3.7	12.3	13.2	7.3	4.4	7.6	11.0	8.6
Green Ext Time (p_c), s	0.0	3.8	0.6	1.6	0.1	2.3	0.4	2.0

Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C



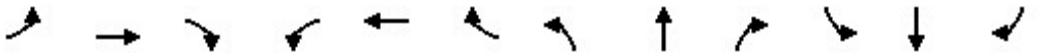
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	426	84	236	277	38	76	348	169	36	258	64
Future Volume (veh/h)	136	426	84	236	277	38	76	348	169	36	258	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	145	453	89	251	295	40	81	370	180	38	274	68
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	178	602	269	318	556	248	109	915	438	75	1058	258
Arrive On Green	0.10	0.17	0.17	0.09	0.16	0.16	0.06	0.40	0.40	0.04	0.38	0.38
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	2312	1107	1767	2810	685
Grp Volume(v), veh/h	145	453	89	251	295	40	81	281	269	38	170	172
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1656	1767	1763	1732
Q Serve(g_s), s	6.6	10.0	4.1	5.9	6.3	1.8	3.7	9.4	9.6	1.7	5.4	5.6
Cycle Q Clear(g_c), s	6.6	10.0	4.1	5.9	6.3	1.8	3.7	9.4	9.6	1.7	5.4	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.67	1.00		0.40
Lane Grp Cap(c), veh/h	178	602	269	318	556	248	109	698	655	75	664	652
V/C Ratio(X)	0.81	0.75	0.33	0.79	0.53	0.16	0.74	0.40	0.41	0.51	0.26	0.26
Avail Cap(c_a), veh/h	190	913	407	318	862	384	130	698	655	130	664	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	32.3	29.8	36.3	31.7	29.8	37.8	17.8	17.8	38.3	17.6	17.7
Incr Delay (d2), s/veh	21.8	1.9	0.7	12.4	0.8	0.3	17.1	1.7	1.9	5.2	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	4.1	1.5	2.9	2.6	0.7	2.0	3.7	3.5	0.8	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	34.2	30.5	48.8	32.5	30.1	54.9	19.5	19.7	43.6	18.5	18.6
LnGrp LOS	E	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		687			586			631			380	
Approach Delay, s/veh		38.7			39.3			24.1			21.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	38.6	13.4	20.2	11.2	37.0	14.5	19.1
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	6.0	30.8	7.6	21.2	6.0	30.8	8.8	* 20
Max Q Clear Time (g_c+I1), s	3.7	11.6	7.9	12.0	5.7	7.6	8.6	8.3
Green Ext Time (p_c), s	0.0	2.8	0.0	2.0	0.0	1.7	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	511	104	142	432	58	99	177	82	59	125	47
Future Volume (veh/h)	120	511	104	142	432	58	99	177	82	59	125	47
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	126	538	109	149	455	61	104	186	86	62	132	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	159	703	314	185	755	337	133	741	628	92	698	591
Arrive On Green	0.09	0.20	0.20	0.10	0.21	0.21	0.08	0.40	0.40	0.05	0.38	0.38
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	126	538	109	149	455	61	104	186	86	62	132	49
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	6.4	13.2	5.5	7.6	10.7	2.3	5.3	6.1	2.0	3.2	4.4	1.8
Cycle Q Clear(g_c), s	6.4	13.2	5.5	7.6	10.7	2.3	5.3	6.1	2.0	3.2	4.4	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	703	314	185	755	337	133	741	628	92	698	591
V/C Ratio(X)	0.79	0.76	0.35	0.81	0.60	0.18	0.78	0.25	0.14	0.68	0.19	0.08
Avail Cap(c_a), veh/h	351	1123	501	409	1239	553	301	741	628	204	698	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	34.6	31.5	40.1	32.5	17.8	41.6	18.4	6.8	42.7	19.2	18.4
Incr Delay (d2), s/veh	8.6	1.8	0.7	8.0	0.8	0.3	9.5	0.8	0.5	8.3	0.6	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	3.0	5.5	2.0	3.5	4.4	1.1	2.6	2.6	1.1	1.5	1.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.4	36.4	32.2	48.1	33.3	18.1	51.2	19.2	7.2	51.0	19.8	18.7
LnGrp LOS	D	D	C	D	C	B	D	B	A	D	B	B
Approach Vol, veh/h		773			665			376			243	
Approach Delay, s/veh		37.9			35.2			25.3			27.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	42.0	15.4	24.1	12.3	39.9	14.0	25.4
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	10.6	36.6	21.2	29.2	15.6	31.6	18.2	32.2
Max Q Clear Time (g_c+I1), s	5.2	8.1	9.6	15.2	7.3	6.4	8.4	12.7
Green Ext Time (p_c), s	0.0	1.2	0.3	3.1	0.1	0.8	0.2	2.8

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	3.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	100	104	70	36
Demand Flow Rate, veh/h	102	107	72	37
Vehicles Circulating, veh/h	58	60	92	114
Vehicles Exiting, veh/h	93	104	68	53
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.5	3.5	3.4	3.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	102	107	72	37
Cap Entry Lane, veh/h	1301	1298	1256	1228
Entry HV Adj Factor	0.979	0.971	0.973	0.980
Flow Entry, veh/h	100	104	70	36
Cap Entry, veh/h	1273	1261	1223	1204
V/C Ratio	0.078	0.082	0.057	0.030
Control Delay, s/veh	3.5	3.5	3.4	3.2
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	4.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	83	162	151	117
Demand Flow Rate, veh/h	86	167	156	120
Vehicles Circulating, veh/h	164	102	84	163
Vehicles Exiting, veh/h	119	138	166	106
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	4.1	4.0	4.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	86	167	156	120
Cap Entry Lane, veh/h	1167	1244	1267	1169
Entry HV Adj Factor	0.969	0.967	0.966	0.971
Flow Entry, veh/h	83	162	151	117
Cap Entry, veh/h	1131	1203	1224	1135
V/C Ratio	0.074	0.134	0.123	0.103
Control Delay, s/veh	3.8	4.1	4.0	4.0
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	162	154	105	70
Demand Flow Rate, veh/h	167	159	108	72
Vehicles Circulating, veh/h	75	85	169	146
Vehicles Exiting, veh/h	143	192	73	98
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.6	4.0	3.6
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.952	0.048	0.881	0.119	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	159	8	140	19	108	72
Cap Entry Lane, veh/h	1326	1326	1314	1314	1161	1189
Entry HV Adj Factor	0.970	1.000	0.971	0.947	0.968	0.974
Flow Entry, veh/h	154	8	136	18	105	70
Cap Entry, veh/h	1287	1326	1276	1245	1125	1158
V/C Ratio	0.120	0.006	0.107	0.014	0.093	0.061
Control Delay, s/veh	3.8	2.8	3.7	3.0	4.0	3.6
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0	0

OPENING YEAR CONDITIONS

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	32	46	226	168	42
Future Vol, veh/h	21	32	46	226	168	42
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	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	36	52	257	191	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	576	215	239	0	-	0
Stage 1	215	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	477	822	1322	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	455	822	1322	-	-	-
Mov Cap-2 Maneuver	455	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	703	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1322	-	623	-	-
HCM Lane V/C Ratio	0.04	-	0.097	-	-
HCM Control Delay (s)	7.8	0	11.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	105	271	28	36	219
Future Vol, veh/h	53	105	271	28	36	219
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	60	118	304	31	40	246

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	630	304	0	0	335	0
Stage 1	304	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	444	733	-	-	1219	-
Stage 1	746	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	427	733	-	-	1219	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	746	-	-	-	-	-
Stage 2	701	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	427	733	1219	-
HCM Lane V/C Ratio	-	-	0.139	0.161	0.033	-
HCM Control Delay (s)	-	-	14.8	10.9	8.1	0
HCM Lane LOS	-	-	B	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.6	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	66	9	2	74	4	9
Future Vol, veh/h	66	9	2	74	4	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	10	2	82	4	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	83	0	164	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	86	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1508	-	824	980
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	935	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1508	-	823	980
Mov Cap-2 Maneuver	-	-	-	-	823	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	934	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	823	980	-	-	1508	-
HCM Lane V/C Ratio	0.005	0.01	-	-	0.001	-
HCM Control Delay (s)	9.4	8.7	-	-	7.4	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	52	52	0	0	0
Future Vol, veh/h	0	52	52	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	65	65	0	0	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	130	0
Stage 1	-	-	0	-
Stage 2	-	-	130	-
Critical Hdwy	4.13	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.53	-
Follow-up Hdwy	2.227	-	4.027	3.327
Pot Cap-1 Maneuver	-	-	759	-
Stage 1	-	-	-	-
Stage 2	-	-	787	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS		A

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	54	18	293	276	2
Future Vol, veh/h	9	54	18	293	276	2
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	64	21	345	325	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	541	326	327	0	-	0
Stage 1	326	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	484	712	1225	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	476	712	1225	-	-	-
Mov Cap-2 Maneuver	476	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	798	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1225	-	665	-	-
HCM Lane V/C Ratio	0.017	-	0.111	-	-
HCM Control Delay (s)	8	-	11.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	151	34	277	79	17	315
Future Vol, veh/h	151	34	277	79	17	315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	168	38	308	88	19	350

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	565	198	0	0	396	0
Stage 1	352	-	-	-	-	-
Stage 2	213	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	453	807	-	-	1152	-
Stage 1	680	-	-	-	-	-
Stage 2	799	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	446	807	-	-	1152	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	446	807	1152	-
HCM Lane V/C Ratio	-	-	0.376	0.047	0.016	-
HCM Control Delay (s)	-	-	17.9	9.7	8.2	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.1	0.1	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	21	48	15	28	25
Future Vol, veh/h	14	21	48	15	28	25
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	16	24	55	17	32	28
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.2	7.5	7.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	40%	53%
Vol Thru, %	100%	0%	0%	47%
Vol Right, %	0%	100%	60%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	48	15	35	53
LT Vol	0	0	14	28
Through Vol	48	0	0	25
RT Vol	0	15	21	0
Lane Flow Rate	55	17	40	60
Geometry Grp	7	7	2	5
Degree of Util (X)	0.07	0.019	0.043	0.072
Departure Headway (Hd)	4.651	3.95	3.893	4.278
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	906	906	835
Service Time	2.377	1.676	1.974	2.316
HCM Lane V/C Ratio	0.071	0.019	0.044	0.072
HCM Control Delay	7.7	6.8	7.2	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.1	0.2

Intersection	
Intersection Delay, s/veh	68.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	574	47	81	675	29	97	69	104	48	83	57
Future Vol, veh/h	39	574	47	81	675	29	97	69	104	48	83	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	42	617	51	87	726	31	104	74	112	52	89	61
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	66.3	98.4	21.8	17.1
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	40%	0%	100%	80%	0%	100%	89%	0%	100%	0%
Vol Right, %	0%	60%	0%	0%	20%	0%	0%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	173	39	383	238	81	450	254	48	83	57
LT Vol	97	0	39	0	0	81	0	0	48	0	0
Through Vol	0	69	0	383	191	0	450	225	0	83	0
RT Vol	0	104	0	0	47	0	0	29	0	0	57
Lane Flow Rate	104	186	42	411	256	87	484	273	52	89	61
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.318	0.52	0.114	1.061	0.651	0.233	1.229	0.688	0.164	0.271	0.174
Departure Headway (Hd)	11.136	10.215	10.161	9.648	9.506	9.849	9.336	9.254	11.912	11.397	10.676
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	324	355	355	379	382	367	392	393	303	317	338
Service Time	8.836	7.915	7.861	7.348	7.206	7.549	7.036	6.954	9.612	9.097	8.376
HCM Lane V/C Ratio	0.321	0.524	0.118	1.084	0.67	0.237	1.235	0.695	0.172	0.281	0.18
HCM Control Delay	18.9	23.5	14.2	95.3	28.3	15.5	152	30	16.9	18.3	15.6
HCM Lane LOS	C	C	B	F	D	C	F	D	C	C	C
HCM 95th-tile Q	1.3	2.9	0.4	13.7	4.4	0.9	19.9	5	0.6	1.1	0.6

Intersection	
Intersection Delay, s/veh	242.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	549	43	40	525	42	50	159	43	81	128	157
Future Vol, veh/h	82	549	43	40	525	42	50	159	43	81	128	157
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	94	631	49	46	603	48	57	183	49	93	147	180
Number of Lanes	1	1	0	1	1	0	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	327.1	316.7	48.4	95.4
HCM LOS	F	F	E	F

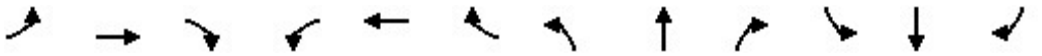
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	20%	100%	0%	100%	0%	22%
Vol Thru, %	63%	0%	93%	0%	93%	35%
Vol Right, %	17%	0%	7%	0%	7%	43%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	252	82	592	40	567	366
LT Vol	50	82	0	40	0	81
Through Vol	159	0	549	0	525	128
RT Vol	43	0	43	0	42	157
Lane Flow Rate	290	94	680	46	652	421
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.763	0.255	1.74	0.125	1.667	1.03
Departure Headway (Hd)	13.093	11.275	10.69	11.218	10.633	11.711
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	278	320	347	321	345	316
Service Time	11.093	8.975	8.39	8.918	8.333	9.711
HCM Lane V/C Ratio	1.043	0.294	1.96	0.143	1.89	1.332
HCM Control Delay	48.4	17.8	369.9	15.5	338	95.4
HCM Lane LOS	E	C	F	C	F	F
HCM 95th-tile Q	5.7	1	37.1	0.4	34.4	11.5

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	137	35	22	106	20	26	205	23	49	295	28
Future Vol, veh/h	28	137	35	22	106	20	26	205	23	49	295	28
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	32	157	40	25	122	23	30	236	26	56	339	32
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	14	12.3	15.1	13.5
HCM LOS	B	B	C	B

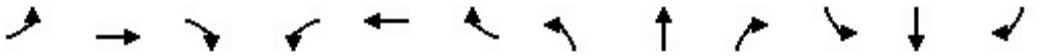
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	80%	0%	100%	0%	0%	100%	78%
Vol Right, %	0%	0%	100%	0%	20%	0%	0%	100%	0%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	205	23	28	172	22	106	20	49	197	126
LT Vol	26	0	0	28	0	22	0	0	49	0	0
Through Vol	0	205	0	0	137	0	106	0	0	197	98
RT Vol	0	0	23	0	35	0	0	20	0	0	28
Lane Flow Rate	30	236	26	32	198	25	122	23	56	226	145
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.064	0.471	0.048	0.07	0.394	0.057	0.257	0.044	0.116	0.435	0.273
Departure Headway (Hd)	7.708	7.201	6.492	7.825	7.183	8.11	7.606	6.9	7.441	6.935	6.778
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	465	502	552	459	502	442	473	519	482	520	530
Service Time	5.445	4.938	4.229	5.56	4.918	5.852	5.347	4.641	5.177	4.671	4.514
HCM Lane V/C Ratio	0.065	0.47	0.047	0.07	0.394	0.057	0.258	0.044	0.116	0.435	0.274
HCM Control Delay	11	16.2	9.6	11.2	14.5	11.3	13	10	11.2	14.9	12.1
HCM Lane LOS	B	C	A	B	B	B	B	A	B	B	B
HCM 95th-tile Q	0.2	2.5	0.2	0.2	1.9	0.2	1	0.1	0.4	2.2	1.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	309	152	135	289	100	148	358	52	138	511	181
Future Volume (veh/h)	233	309	152	135	289	100	148	358	52	138	511	181
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	245	325	160	142	304	105	156	377	55	145	538	191
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	291	684	305	179	462	206	239	1316	587	248	1324	591
Arrive On Green	0.16	0.19	0.19	0.10	0.13	0.13	0.07	0.38	0.38	0.07	0.38	0.38
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	245	325	160	142	304	105	156	377	55	145	538	191
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	11.2	6.8	7.6	6.5	6.8	5.2	3.7	6.2	1.2	3.4	9.4	3.8
Cycle Q Clear(g_c), s	11.2	6.8	7.6	6.5	6.8	5.2	3.7	6.2	1.2	3.4	9.4	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	684	305	179	462	206	239	1316	587	248	1324	591
V/C Ratio(X)	0.84	0.48	0.52	0.79	0.66	0.51	0.65	0.29	0.09	0.59	0.41	0.32
Avail Cap(c_a), veh/h	548	1688	753	384	1360	607	398	1316	587	406	1324	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	29.7	30.0	36.4	34.3	33.6	37.6	18.1	6.7	37.2	18.9	5.1
Incr Delay (d2), s/veh	6.6	0.5	1.4	7.7	1.6	1.9	3.0	0.5	0.3	2.2	0.9	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	2.7	2.8	3.0	2.8	2.0	1.6	2.4	0.7	1.4	3.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	30.2	31.4	44.1	35.9	35.5	40.5	18.6	7.0	39.4	19.8	6.6
LnGrp LOS	D	C	C	D	D	D	D	B	A	D	B	A
Approach Vol, veh/h		730			551			588			874	
Approach Delay, s/veh		33.8			37.9			23.4			20.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	36.5	13.7	21.4	11.1	36.7	18.9	16.2
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	9.9	31.2	18.0	39.7	9.7	31.4	25.7	32.0
Max Q Clear Time (g_c+I1), s	5.4	8.2	8.5	9.6	5.7	11.4	13.2	8.8
Green Ext Time (p_c), s	0.2	2.4	0.2	2.5	0.2	3.8	0.5	2.1

Intersection Summary	
HCM 6th Ctrl Delay	28.1
HCM 6th LOS	C



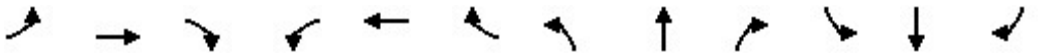
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	387	80	328	510	55	92	309	225	39	291	113
Future Volume (veh/h)	111	387	80	328	510	55	92	309	225	39	291	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	119	416	86	353	548	59	99	332	242	42	313	122
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	150	555	248	443	697	311	126	825	589	74	974	372
Arrive On Green	0.08	0.16	0.16	0.13	0.20	0.20	0.07	0.42	0.42	0.04	0.39	0.39
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1964	1402	1767	2494	953
Grp Volume(v), veh/h	119	416	86	353	548	59	99	297	277	42	219	216
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1603	1767	1763	1684
Q Serve(g_s), s	6.4	10.9	4.7	9.7	14.3	3.0	5.4	11.4	11.7	2.3	8.4	8.7
Cycle Q Clear(g_c), s	6.4	10.9	4.7	9.7	14.3	3.0	5.4	11.4	11.7	2.3	8.4	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.57
Lane Grp Cap(c), veh/h	150	555	248	443	697	311	126	741	674	74	689	658
V/C Ratio(X)	0.79	0.75	0.35	0.80	0.79	0.19	0.78	0.40	0.41	0.57	0.32	0.33
Avail Cap(c_a), veh/h	324	937	418	749	1060	473	269	741	674	142	689	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	39.1	36.5	41.0	37.0	32.5	44.3	19.6	19.7	45.7	20.6	20.7
Incr Delay (d2), s/veh	9.1	2.1	0.8	3.3	2.3	0.3	10.1	1.6	1.8	6.7	1.2	1.3
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	3.0	4.6	1.8	4.1	6.1	1.1	2.6	4.6	4.3	1.1	3.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.7	41.1	37.3	44.4	39.3	32.8	54.4	21.3	21.6	52.3	21.8	22.0
LnGrp LOS	D	D	D	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h		621			960			673			477	
Approach Delay, s/veh		42.8			40.7			26.3			24.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	47.0	18.3	21.5	13.1	44.1	14.4	25.4
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.8	40.8	21.2	25.8	14.8	33.8	17.8	* 29
Max Q Clear Time (g_c+I1), s	4.3	13.7	11.7	12.9	7.4	10.7	8.4	16.3
Green Ext Time (p_c), s	0.0	3.3	0.8	2.2	0.1	2.2	0.2	2.9

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	372	31	166	470	52	77	112	107	68	132	95
Future Volume (veh/h)	143	372	31	166	470	52	77	112	107	68	132	95
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	161	418	35	187	528	58	87	126	120	76	148	107
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	200	641	286	228	698	311	113	694	588	102	683	579
Arrive On Green	0.11	0.18	0.18	0.13	0.20	0.20	0.06	0.37	0.37	0.06	0.37	0.37
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	161	418	35	187	528	58	87	126	120	76	148	107
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	7.7	9.6	1.6	9.0	12.3	2.1	4.2	4.0	4.5	3.7	4.8	2.5
Cycle Q Clear(g_c), s	7.7	9.6	1.6	9.0	12.3	2.1	4.2	4.0	4.5	3.7	4.8	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	200	641	286	228	698	311	113	694	588	102	683	579
V/C Ratio(X)	0.81	0.65	0.12	0.82	0.76	0.19	0.77	0.18	0.20	0.74	0.22	0.18
Avail Cap(c_a), veh/h	450	1100	491	491	1181	527	296	694	588	276	683	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	33.1	29.8	37.0	33.0	17.1	40.2	18.3	18.5	40.4	18.9	7.1
Incr Delay (d2), s/veh	7.5	1.1	0.2	7.2	1.7	0.3	10.6	0.6	0.8	10.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	3.9	0.6	4.1	5.1	1.0	2.1	1.7	1.6	1.8	2.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	34.2	30.0	44.1	34.7	17.4	50.8	18.9	19.3	50.5	19.6	7.8
LnGrp LOS	D	C	C	D	C	B	D	B	B	D	B	A
Approach Vol, veh/h		614			773			333			331	
Approach Delay, s/veh		36.8			35.7			27.4			22.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	38.0	17.0	21.7	11.0	37.5	15.6	23.0
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	13.6	32.6	24.2	27.2	14.6	31.6	22.2	29.2
Max Q Clear Time (g_c+I1), s	5.7	6.5	11.0	11.6	6.2	6.8	9.7	14.3
Green Ext Time (p_c), s	0.1	1.0	0.4	2.3	0.1	1.1	0.3	2.9

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	211	320	191	71
Demand Flow Rate, veh/h	217	330	197	73
Vehicles Circulating, veh/h	157	152	190	327
Vehicles Exiting, veh/h	243	235	184	155
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.8	5.7	4.8	4.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	217	330	197	73
Cap Entry Lane, veh/h	1176	1182	1137	989
Entry HV Adj Factor	0.972	0.971	0.968	0.968
Flow Entry, veh/h	211	320	191	71
Cap Entry, veh/h	1143	1147	1101	956
V/C Ratio	0.185	0.279	0.173	0.074
Control Delay, s/veh	4.8	5.7	4.8	4.4
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0

Intersection	
Intersection Delay, s/veh	3.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	68	87	133	76
Demand Flow Rate, veh/h	70	90	138	78
Vehicles Circulating, veh/h	124	78	51	109
Vehicles Exiting, veh/h	63	111	143	59
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.5	3.5	3.7	3.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	70	90	138	78
Cap Entry Lane, veh/h	1216	1274	1310	1235
Entry HV Adj Factor	0.968	0.968	0.967	0.978
Flow Entry, veh/h	68	87	133	76
Cap Entry, veh/h	1177	1233	1266	1207
V/C Ratio	0.058	0.071	0.105	0.063
Control Delay, s/veh	3.5	3.5	3.7	3.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	345	256	288	446
Demand Flow Rate, veh/h	355	264	297	459
Vehicles Circulating, veh/h	336	375	420	207
Vehicles Exiting, veh/h	330	342	271	432
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	5.1	7.8	7.7
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.904	0.096	0.705	0.295	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	321	34	186	78	297	459
Cap Entry Lane, veh/h	1046	1046	1009	1009	899	1117
Entry HV Adj Factor	0.972	0.971	0.969	0.974	0.970	0.971
Flow Entry, veh/h	312	33	180	76	288	446
Cap Entry, veh/h	1017	1015	978	984	872	1085
V/C Ratio	0.307	0.033	0.184	0.077	0.330	0.411
Control Delay, s/veh	6.6	3.8	5.4	4.4	7.8	7.7
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	1	2

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	103	37	248	255	31
Future Vol, veh/h	50	103	37	248	255	31
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	56	114	41	276	283	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	658	300	317	0	-	0
Stage 1	300	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	428	737	1237	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	411	737	1237	-	-	-
Mov Cap-2 Maneuver	411	-	-	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	705	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1237	-	585	-	-
HCM Lane V/C Ratio	0.033	-	0.291	-	-
HCM Control Delay (s)	8	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	29	241	35	45	289
Future Vol, veh/h	19	29	241	35	45	289
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	21	33	271	39	51	325

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	698	271	0	0	310	0
Stage 1	271	-	-	-	-	-
Stage 2	427	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	405	765	-	-	1245	-
Stage 1	772	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	385	765	-	-	1245	-
Mov Cap-2 Maneuver	385	-	-	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	623	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	385	765	1245	-
HCM Lane V/C Ratio	-	-	0.055	0.043	0.041	-
HCM Control Delay (s)	-	-	14.9	9.9	8	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	64	15	6	91	27	10
Future Vol, veh/h	64	15	6	91	27	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	77	18	7	110	33	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	95	0	210	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	124	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1493	-	776	970
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	899	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1493	-	772	970
Mov Cap-2 Maneuver	-	-	-	-	772	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	772	970	-	-	1493	-
HCM Lane V/C Ratio	0.042	0.012	-	-	0.005	-
HCM Control Delay (s)	9.9	8.8	-	-	7.4	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	98	60	0	0	0
Future Vol, veh/h	0	98	60	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	121	74	0	0	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	148	0
Stage 1	-	-	0	-
Stage 2	-	-	148	-
Critical Hdwy	4.13	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.53	-
Follow-up Hdwy	2.227	-	4.027	3.327
Pot Cap-1 Maneuver	-	-	742	-
Stage 1	-	-	-	-
Stage 2	-	-	773	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS		A

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	28	39	272	295	9
Future Vol, veh/h	5	28	39	272	295	9
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	33	45	316	343	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	596	348	353	0	-	0
Stage 1	348	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	448	692	1198	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	431	692	1198	-	-	-
Mov Cap-2 Maneuver	431	-	-	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	768	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1198	-	634	-	-
HCM Lane V/C Ratio	0.038	-	0.061	-	-
HCM Control Delay (s)	8.1	-	11	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	84	10	293	121	18	309
Future Vol, veh/h	84	10	293	121	18	309
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	12	345	142	21	364

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	640	244	0	0	487	0
Stage 1	416	-	-	-	-	-
Stage 2	224	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	406	753	-	-	1065	-
Stage 1	631	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	398	753	-	-	1065	-
Mov Cap-2 Maneuver	398	-	-	-	-	-
Stage 1	631	-	-	-	-	-
Stage 2	773	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	398	753	1065	-
HCM Lane V/C Ratio	-	-	0.248	0.016	0.02	-
HCM Control Delay (s)	-	-	17	9.9	8.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1	0	0.1	-

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	35	47	22	39	40
Future Vol, veh/h	28	35	47	22	39	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	30	38	51	24	42	43
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.4	7.5	7.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	44%	49%
Vol Thru, %	100%	0%	0%	51%
Vol Right, %	0%	100%	56%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	22	63	79
LT Vol	0	0	28	39
Through Vol	47	0	0	40
RT Vol	0	22	35	0
Lane Flow Rate	51	24	68	86
Geometry Grp	7	7	2	5
Degree of Util (X)	0.067	0.027	0.078	0.103
Departure Headway (Hd)	4.716	4.015	4.076	4.326
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	756	886	884	823
Service Time	2.467	1.765	2.076	2.384
HCM Lane V/C Ratio	0.067	0.027	0.077	0.104
HCM Control Delay	7.8	6.9	7.4	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.3	0.3

Intersection	
Intersection Delay, s/veh	101.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	813	69	103	606	41	53	67	65	39	53	33
Future Vol, veh/h	43	813	69	103	606	41	53	67	65	39	53	33
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	48	913	78	116	681	46	60	75	73	44	60	37
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	158.7	64.9	19.6	16.2
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	51%	0%	100%	80%	0%	100%	83%	0%	100%	0%
Vol Right, %	0%	49%	0%	0%	20%	0%	0%	17%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	132	43	542	340	103	404	243	39	53	33
LT Vol	53	0	43	0	0	103	0	0	39	0	0
Through Vol	0	67	0	542	271	0	404	202	0	53	0
RT Vol	0	65	0	0	69	0	0	41	0	0	33
Lane Flow Rate	60	148	48	609	382	116	454	273	44	60	37
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.181	0.417	0.122	1.447	0.893	0.293	1.085	0.644	0.138	0.179	0.104
Departure Headway (Hd)	11.486	10.642	9.292	8.782	8.637	9.631	9.121	9.001	12.092	11.579	10.861
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	314	341	388	420	424	375	399	404	298	312	332
Service Time	9.186	8.342	6.992	6.482	6.337	7.331	6.821	6.701	9.792	9.279	8.561
HCM Lane V/C Ratio	0.191	0.434	0.124	1.45	0.901	0.309	1.138	0.676	0.148	0.192	0.111
HCM Control Delay	16.7	20.7	13.3	237.9	50.9	16.3	100.4	26.6	16.7	16.8	14.8
HCM Lane LOS	C	C	B	F	F	C	F	D	C	C	B
HCM 95th-tile Q	0.6	2	0.4	30.3	9.4	1.2	14.9	4.4	0.5	0.6	0.3

Intersection	
Intersection Delay, s/veh	166.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	170	704	34	44	626	63	30	57	46	47	41	96
Future Vol, veh/h	170	704	34	44	626	63	30	57	46	47	41	96
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	177	733	35	46	652	66	31	59	48	49	43	100
Number of Lanes	1	1	0	1	1	0	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	195.4	195.5	16.2	17.6
HCM LOS	F	F	C	C

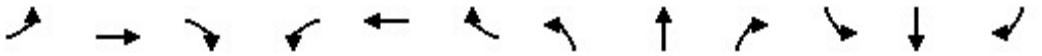
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	23%	100%	0%	100%	0%	26%
Vol Thru, %	43%	0%	95%	0%	91%	22%
Vol Right, %	35%	0%	5%	0%	9%	52%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	170	738	44	689	184
LT Vol	30	170	0	44	0	47
Through Vol	57	0	704	0	626	41
RT Vol	46	0	34	0	63	96
Lane Flow Rate	139	177	769	46	718	192
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.304	0.362	1.457	0.096	1.385	0.402
Departure Headway (Hd)	9.246	7.915	7.367	8.087	7.506	8.781
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	392	457	500	446	488	412
Service Time	7.246	5.615	5.067	5.787	5.206	6.781
HCM Lane V/C Ratio	0.355	0.387	1.538	0.103	1.471	0.466
HCM Control Delay	16.2	15	237	11.6	207.2	17.6
HCM Lane LOS	C	B	F	B	F	C
HCM 95th-tile Q	1.3	1.6	35.4	0.3	31.1	1.9

Intersection	
Intersection Delay, s/veh	80.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	243	42	46	237	63	80	446	114	70	373	52
Future Vol, veh/h	57	243	42	46	237	63	80	446	114	70	373	52
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	62	264	46	50	258	68	87	485	124	76	405	57
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	50.6	34.8	157	33
HCM LOS	F	D	F	D

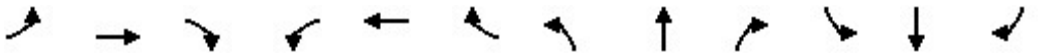
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	85%	0%	100%	0%	0%	100%	71%
Vol Right, %	0%	0%	100%	0%	15%	0%	0%	100%	0%	0%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	446	114	57	285	46	237	63	70	249	176
LT Vol	80	0	0	57	0	46	0	0	70	0	0
Through Vol	0	446	0	0	243	0	237	0	0	249	124
RT Vol	0	0	114	0	42	0	0	63	0	0	52
Lane Flow Rate	87	485	124	62	310	50	258	68	76	270	192
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.261	1.385	0.329	0.186	0.881	0.155	0.764	0.19	0.228	0.772	0.536
Departure Headway (Hd)	10.801	10.282	9.555	11.408	10.805	11.982	11.464	10.739	11.548	11.026	10.81
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	332	354	375	317	338	301	317	336	313	330	335
Service Time	8.57	8.051	7.324	9.108	8.505	9.682	9.164	8.439	9.248	8.726	8.51
HCM Lane V/C Ratio	0.262	1.37	0.331	0.196	0.917	0.166	0.814	0.202	0.243	0.818	0.573
HCM Control Delay	17.4	217.8	17	16.7	57.4	16.9	43.3	15.9	17.6	42.8	25.3
HCM Lane LOS	C	F	C	C	F	C	E	C	C	E	D
HCM 95th-tile Q	1	24.2	1.4	0.7	8.3	0.5	5.9	0.7	0.9	6.1	3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	296	90	247	367	162	198	773	60	164	484	196
Future Volume (veh/h)	410	296	90	247	367	162	198	773	60	164	484	196
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	432	312	95	260	386	171	208	814	63	173	509	206
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	464	868	387	295	532	237	259	1069	477	242	1052	469
Arrive On Green	0.26	0.25	0.25	0.17	0.15	0.15	0.08	0.31	0.31	0.07	0.30	0.30
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	432	312	95	260	386	171	208	814	63	173	509	206
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	24.1	7.4	4.9	14.5	10.6	8.3	6.1	21.3	1.8	5.0	12.0	10.8
Cycle Q Clear(g_c), s	24.1	7.4	4.9	14.5	10.6	8.3	6.1	21.3	1.8	5.0	12.0	10.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	464	868	387	295	532	237	259	1069	477	242	1052	469
V/C Ratio(X)	0.93	0.36	0.25	0.88	0.73	0.72	0.80	0.76	0.13	0.71	0.48	0.44
Avail Cap(c_a), veh/h	502	1333	594	393	1116	498	259	1069	477	242	1052	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	31.5	30.6	41.1	40.9	25.7	45.9	31.7	9.4	45.9	28.9	28.5
Incr Delay (d2), s/veh	23.5	0.3	0.3	16.2	1.9	4.1	16.5	5.1	0.6	9.5	1.6	3.0
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	12.8	3.0	1.8	7.4	4.5	3.2	3.1	9.2	1.1	2.4	5.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	31.8	30.9	57.3	42.8	29.8	62.4	36.9	10.0	55.5	30.5	31.4
LnGrp LOS	E	C	C	E	D	C	E	D	A	E	C	C
Approach Vol, veh/h		839			817			1085			888	
Approach Delay, s/veh		46.1			44.7			40.2			35.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	36.2	22.2	30.2	13.0	35.7	31.8	20.6
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	7.2	30.9	22.5	38.2	7.7	30.4	28.7	32.0
Max Q Clear Time (g_c+I1), s	7.0	23.3	16.5	9.4	8.1	14.0	26.1	12.6
Green Ext Time (p_c), s	0.0	3.2	0.4	2.2	0.0	3.4	0.4	2.7

Intersection Summary	
HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D



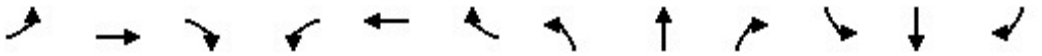
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	531	86	381	361	48	78	367	351	50	275	69
Future Volume (veh/h)	144	531	86	381	361	48	78	367	351	50	275	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	153	565	91	405	384	51	83	390	373	53	293	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	186	704	314	495	827	369	107	643	574	82	985	241
Arrive On Green	0.11	0.20	0.20	0.14	0.23	0.23	0.06	0.37	0.37	0.05	0.35	0.35
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1763	1572	1767	2807	688
Grp Volume(v), veh/h	153	565	91	405	384	51	83	390	373	53	182	184
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763	1732
Q Serve(g_s), s	8.5	15.2	4.9	11.4	9.3	2.6	4.6	18.0	19.7	2.9	7.5	7.7
Cycle Q Clear(g_c), s	8.5	15.2	4.9	11.4	9.3	2.6	4.6	18.0	19.7	2.9	7.5	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	186	704	314	495	827	369	107	643	574	82	619	608
V/C Ratio(X)	0.82	0.80	0.29	0.82	0.46	0.14	0.78	0.61	0.65	0.65	0.29	0.30
Avail Cap(c_a), veh/h	333	983	438	763	1103	492	227	643	574	163	619	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	38.0	33.9	41.4	32.8	30.2	46.2	25.8	26.4	46.7	23.4	23.5
Incr Delay (d2), s/veh	8.6	3.3	0.5	4.1	0.4	0.2	11.5	4.2	5.6	8.3	1.2	1.3
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	4.0	6.5	1.8	4.9	3.8	0.9	2.3	7.7	7.6	1.4	3.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	41.4	34.4	45.5	33.2	30.4	57.7	30.0	32.0	55.0	24.6	24.8
LnGrp LOS	D	D	C	D	C	C	E	C	C	E	C	C
Approach Vol, veh/h		809			840			846			419	
Approach Delay, s/veh		42.7			39.0			33.6			28.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	42.6	20.2	26.1	12.2	41.2	16.7	29.6
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	9.2	36.4	22.2	27.8	12.8	32.8	18.8	* 31
Max Q Clear Time (g_c+I1), s	4.9	21.7	13.4	17.2	6.6	9.7	10.5	11.3
Green Ext Time (p_c), s	0.0	3.8	1.0	2.7	0.1	1.8	0.2	2.3

Intersection Summary	
HCM 6th Ctrl Delay	36.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	777	106	241	640	78	103	215	214	77	160	80
Future Volume (veh/h)	159	777	106	241	640	78	103	215	214	77	160	80
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	167	818	112	254	674	82	108	226	225	81	168	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	199	949	423	287	1124	502	135	560	475	103	527	447
Arrive On Green	0.11	0.27	0.27	0.16	0.32	0.32	0.08	0.30	0.30	0.06	0.28	0.28
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	167	818	112	254	674	82	108	226	225	81	168	84
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	10.0	23.8	4.5	15.1	17.3	3.1	6.5	10.4	12.5	4.9	7.7	4.3
Cycle Q Clear(g_c), s	10.0	23.8	4.5	15.1	17.3	3.1	6.5	10.4	12.5	4.9	7.7	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	949	423	287	1124	502	135	560	475	103	527	447
V/C Ratio(X)	0.84	0.86	0.26	0.88	0.60	0.16	0.80	0.40	0.47	0.79	0.32	0.19
Avail Cap(c_a), veh/h	333	1087	485	381	1182	527	190	560	475	143	527	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	37.4	17.6	44.1	30.9	15.3	48.9	29.9	30.6	50.0	30.3	29.1
Incr Delay (d2), s/veh	9.1	6.5	0.3	17.3	0.8	0.2	15.0	2.2	3.4	17.4	1.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	10.6	2.2	7.7	7.1	1.4	3.3	4.8	5.0	2.6	3.6	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	44.0	17.9	61.4	31.6	15.4	63.9	32.0	34.0	67.4	31.9	30.1
LnGrp LOS	E	D	B	E	C	B	E	C	C	E	C	C
Approach Vol, veh/h		1097			1010			559			333	
Approach Delay, s/veh		43.1			37.8			39.0			40.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	37.9	23.3	34.8	13.6	36.0	17.9	40.1
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	8.7	32.5	23.2	33.2	11.6	29.6	20.3	36.1
Max Q Clear Time (g_c+I1), s	6.9	14.5	17.1	25.8	8.5	9.7	12.0	19.3
Green Ext Time (p_c), s	0.0	1.8	0.4	3.2	0.1	1.0	0.3	4.1

Intersection Summary	
HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	3.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	117	119	71	36
Demand Flow Rate, veh/h	120	123	73	37
Vehicles Circulating, veh/h	58	61	110	130
Vehicles Exiting, veh/h	109	122	68	54
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.6	3.5	3.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	120	123	73	37
Cap Entry Lane, veh/h	1301	1297	1233	1209
Entry HV Adj Factor	0.978	0.971	0.973	0.980
Flow Entry, veh/h	117	119	71	36
Cap Entry, veh/h	1272	1259	1200	1185
V/C Ratio	0.092	0.095	0.059	0.031
Control Delay, s/veh	3.6	3.6	3.5	3.3
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	4.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	101	184	194	126
Demand Flow Rate, veh/h	104	190	199	130
Vehicles Circulating, veh/h	192	122	89	199
Vehicles Exiting, veh/h	137	166	207	113
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	4.4	4.3	4.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	104	190	199	130
Cap Entry Lane, veh/h	1134	1218	1260	1126
Entry HV Adj Factor	0.973	0.971	0.973	0.971
Flow Entry, veh/h	101	184	194	126
Cap Entry, veh/h	1104	1183	1226	1094
V/C Ratio	0.092	0.156	0.158	0.115
Control Delay, s/veh	4.0	4.4	4.3	4.3
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	0

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	237	233	115	72
Demand Flow Rate, veh/h	244	240	118	74
Vehicles Circulating, veh/h	87	95	241	235
Vehicles Exiting, veh/h	222	264	90	100
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.2	4.4	4.0
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.947	0.053	0.921	0.079	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	231	13	221	19	118	74
Cap Entry Lane, veh/h	1312	1312	1302	1302	1079	1086
Entry HV Adj Factor	0.970	1.000	0.972	0.947	0.971	0.974
Flow Entry, veh/h	224	13	215	18	115	72
Cap Entry, veh/h	1273	1312	1266	1234	1048	1057
V/C Ratio	0.176	0.010	0.170	0.015	0.109	0.068
Control Delay, s/veh	4.3	2.8	4.3	3.0	4.4	4.0
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	0	0

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	33	49	232	170	42
Future Vol, veh/h	21	33	49	232	170	42
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	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	38	56	264	193	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	593	217	241	0	-	0
Stage 1	217	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	467	820	1320	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	444	820	1320	-	-	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	692	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1320	-	617	-	-
HCM Lane V/C Ratio	0.042	-	0.099	-	-
HCM Control Delay (s)	7.8	0	11.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	114	271	29	39	219
Future Vol, veh/h	56	114	271	29	39	219
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	63	128	304	33	44	246

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	638	304	0	0	337	0
Stage 1	304	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	439	733	-	-	1217	-
Stage 1	746	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	421	733	-	-	1217	-
Mov Cap-2 Maneuver	421	-	-	-	-	-
Stage 1	746	-	-	-	-	-
Stage 2	693	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	421	733	1217	-
HCM Lane V/C Ratio	-	-	0.149	0.175	0.036	-
HCM Control Delay (s)	-	-	15	10.9	8.1	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.6	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	70	9	82	87	4	36
Future Vol, veh/h	70	9	82	87	4	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	78	10	91	97	4	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	88	0	362	83
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	279	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1501	-	635	974
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1501	-	596	974
Mov Cap-2 Maneuver	-	-	-	-	596	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	596	974	-	-	1501	-
HCM Lane V/C Ratio	0.007	0.041	-	-	0.061	-
HCM Control Delay (s)	11.1	8.9	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.2	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	160	88	36	108	15
Future Vol, veh/h	5	160	88	36	108	15
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	80	80	80	80	80	80
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	200	110	45	135	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	410	145	154	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	265	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	596	900	1420	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	549	900	1420	-	-	-
Mov Cap-2 Maneuver	549	-	-	-	-	-
Stage 1	810	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	5.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1420	-	883	-	-
HCM Lane V/C Ratio	0.077	-	0.234	-	-
HCM Control Delay (s)	7.7	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.9	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	54	18	293	276	5
Future Vol, veh/h	10	54	18	293	276	5
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	64	21	345	325	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	543	328	331	0	-	0
Stage 1	328	-	-	-	-	-
Stage 2	215	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	483	710	1220	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	475	710	1220	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	798	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1220	-	659	-	-
HCM Lane V/C Ratio	0.017	-	0.114	-	-
HCM Control Delay (s)	8	-	11.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	151	34	277	79	17	315
Future Vol, veh/h	151	34	277	79	17	315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	168	38	308	88	19	350

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	565	198	0	0	396	0
Stage 1	352	-	-	-	-	-
Stage 2	213	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	453	807	-	-	1152	-
Stage 1	680	-	-	-	-	-
Stage 2	799	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	446	807	-	-	1152	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	446	807	1152	-
HCM Lane V/C Ratio	-	-	0.376	0.047	0.016	-
HCM Control Delay (s)	-	-	17.9	9.7	8.2	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1.7	0.1	0.1	-

Intersection	
Intersection Delay, s/veh	92
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	588	47	81	715	29	97	71	104	48	89	131
Future Vol, veh/h	63	588	47	81	715	29	97	71	104	48	89	131
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	68	632	51	87	769	31	104	76	112	52	96	141
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	86.8	141.8	24.8	20.4
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	41%	0%	100%	81%	0%	100%	89%	0%	100%	0%
Vol Right, %	0%	59%	0%	0%	19%	0%	0%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	175	63	392	243	81	477	267	48	89	131
LT Vol	97	0	63	0	0	81	0	0	48	0	0
Through Vol	0	71	0	392	196	0	477	238	0	89	0
RT Vol	0	104	0	0	47	0	0	29	0	0	131
Lane Flow Rate	104	188	68	422	261	87	513	287	52	96	141
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.335	0.557	0.196	1.158	0.708	0.249	1.393	0.775	0.169	0.3	0.414
Departure Headway (Hd)	12.049	11.133	10.956	10.44	10.3	10.617	10.101	10.022	12.566	12.051	11.329
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	300	326	330	350	353	341	364	362	287	300	320
Service Time	9.749	8.833	8.656	8.14	8	8.317	7.801	7.722	10.266	9.751	9.029
HCM Lane V/C Ratio	0.347	0.577	0.206	1.206	0.739	0.255	1.409	0.793	0.181	0.32	0.441
HCM Control Delay	20.7	27	16.3	130.6	34.5	16.8	220.2	39.9	17.8	19.8	21.8
HCM Lane LOS	C	D	C	F	D	C	F	E	C	C	C
HCM 95th-tile Q	1.4	3.2	0.7	16.1	5.2	1	25	6.3	0.6	1.2	2

Intersection	
Intersection Delay, s/veh	289.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	617	49	40	547	42	52	159	43	81	128	157
Future Vol, veh/h	82	617	49	40	547	42	52	159	43	81	128	157
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	94	709	56	46	629	48	60	183	49	93	147	180
Number of Lanes	1	1	0	1	1	0	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	417.4	346.2	51.3	98.4
HCM LOS	F	F	F	F

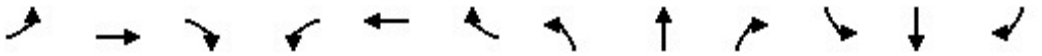
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	20%	100%	0%	100%	0%	22%
Vol Thru, %	63%	0%	93%	0%	93%	35%
Vol Right, %	17%	0%	7%	0%	7%	43%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	254	82	666	40	589	366
LT Vol	52	82	0	40	0	81
Through Vol	159	0	617	0	547	128
RT Vol	43	0	49	0	42	157
Lane Flow Rate	292	94	766	46	677	421
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.77	0.256	1.96	0.125	1.735	1.032
Departure Headway (Hd)	13.761	11.42	10.834	11.574	10.988	12.285
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	266	317	344	312	339	299
Service Time	11.761	9.12	8.534	9.274	8.688	10.285
HCM Lane V/C Ratio	1.098	0.297	2.227	0.147	1.997	1.408
HCM Control Delay	51.3	18	466.6	15.9	368.6	98.4
HCM Lane LOS	F	C	F	C	F	F
HCM 95th-tile Q	5.7	1	45.3	0.4	36	11.3

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	137	35	22	106	22	26	231	23	55	372	34
Future Vol, veh/h	30	137	35	22	106	22	26	231	23	55	372	34
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	34	157	40	25	122	25	30	266	26	63	428	39
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	15.2	13.1	18	16.2
HCM LOS	C	B	C	C

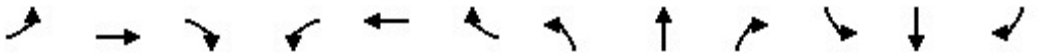
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	80%	0%	100%	0%	0%	100%	78%
Vol Right, %	0%	0%	100%	0%	20%	0%	0%	100%	0%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	231	23	30	172	22	106	22	55	248	158
LT Vol	26	0	0	30	0	22	0	0	55	0	0
Through Vol	0	231	0	0	137	0	106	0	0	248	124
RT Vol	0	0	23	0	35	0	0	22	0	0	34
Lane Flow Rate	30	266	26	34	198	25	122	25	63	285	182
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.067	0.558	0.05	0.079	0.419	0.06	0.274	0.052	0.135	0.567	0.354
Departure Headway (Hd)	8.074	7.566	6.856	8.265	7.622	8.606	8.101	7.393	7.671	7.164	7.012
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	443	475	521	433	473	416	442	483	467	505	512
Service Time	5.829	5.321	4.611	6.019	5.377	6.369	5.863	5.155	5.42	4.913	4.761
HCM Lane V/C Ratio	0.068	0.56	0.05	0.079	0.419	0.06	0.276	0.052	0.135	0.564	0.355
HCM Control Delay	11.4	19.5	10	11.7	15.8	11.9	13.9	10.6	11.6	18.9	13.6
HCM Lane LOS	B	C	A	B	C	B	B	B	B	C	B
HCM 95th-tile Q	0.2	3.4	0.2	0.3	2	0.2	1.1	0.2	0.5	3.5	1.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	233	340	189	135	300	100	161	358	52	138	511	181
Future Volume (veh/h)	233	340	189	135	300	100	161	358	52	138	511	181
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	245	358	199	142	316	105	169	377	55	145	538	191
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	290	696	311	179	474	212	248	1304	582	256	1312	585
Arrive On Green	0.16	0.20	0.20	0.10	0.13	0.13	0.07	0.37	0.37	0.08	0.38	0.38
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	245	358	199	142	316	105	169	377	55	145	538	191
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	11.3	7.6	9.7	6.6	7.1	5.2	4.1	6.3	1.2	3.4	9.5	3.9
Cycle Q Clear(g_c), s	11.3	7.6	9.7	6.6	7.1	5.2	4.1	6.3	1.2	3.4	9.5	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	696	311	179	474	212	248	1304	582	256	1312	585
V/C Ratio(X)	0.84	0.51	0.64	0.79	0.67	0.50	0.68	0.29	0.09	0.57	0.41	0.33
Avail Cap(c_a), veh/h	543	1672	746	380	1348	601	394	1304	582	402	1312	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	30.0	30.9	36.8	34.4	33.6	37.9	18.5	6.9	37.4	19.3	5.3
Incr Delay (d2), s/veh	6.6	0.6	2.2	7.8	1.6	1.8	3.3	0.6	0.3	2.0	0.9	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	3.1	3.6	3.1	3.0	2.0	1.7	2.4	0.7	1.4	3.7	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	30.6	33.1	44.5	36.0	35.4	41.2	19.0	7.2	39.4	20.3	6.8
LnGrp LOS	D	C	C	D	D	D	D	B	A	D	C	A
Approach Vol, veh/h		802			563			601			874	
Approach Delay, s/veh		34.3			38.1			24.2			20.5	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	36.5	13.8	21.8	11.4	36.7	19.0	16.6
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	9.9	31.2	18.0	39.7	9.7	31.4	25.7	32.0
Max Q Clear Time (g_c+I1), s	5.4	8.3	8.6	11.7	6.1	11.5	13.3	9.1
Green Ext Time (p_c), s	0.2	2.4	0.2	2.8	0.2	3.8	0.5	2.1

Intersection Summary	
HCM 6th Ctrl Delay	28.6
HCM 6th LOS	C



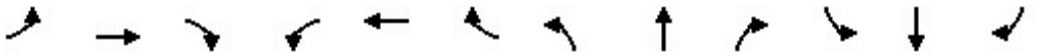
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	399	80	405	547	55	92	309	250	39	291	113
Future Volume (veh/h)	111	399	80	405	547	55	92	309	250	39	291	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	119	429	86	435	588	59	99	332	269	42	313	122
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	149	557	248	521	781	348	126	758	602	73	938	358
Arrive On Green	0.08	0.16	0.16	0.15	0.22	0.22	0.07	0.41	0.41	0.04	0.38	0.38
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1868	1483	1767	2494	953
Grp Volume(v), veh/h	119	429	86	435	588	59	99	313	288	42	219	216
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1589	1767	1763	1684
Q Serve(g_s), s	6.6	11.7	4.9	12.4	15.7	3.0	5.5	12.9	13.2	2.3	8.9	9.2
Cycle Q Clear(g_c), s	6.6	11.7	4.9	12.4	15.7	3.0	5.5	12.9	13.2	2.3	8.9	9.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.57
Lane Grp Cap(c), veh/h	149	557	248	521	781	349	126	716	645	73	663	633
V/C Ratio(X)	0.80	0.77	0.35	0.83	0.75	0.17	0.79	0.44	0.45	0.58	0.33	0.34
Avail Cap(c_a), veh/h	313	905	404	723	1024	457	260	716	645	137	663	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	40.6	37.7	41.4	36.5	31.6	45.9	21.6	21.7	47.3	22.4	22.4
Incr Delay (d2), s/veh	9.3	2.3	0.8	6.0	2.3	0.2	10.3	1.9	2.2	7.0	1.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.0	1.9	5.4	6.7	1.1	2.7	5.3	4.9	1.1	3.7	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	42.9	38.5	47.4	38.8	31.9	56.2	23.5	23.9	54.3	23.7	23.9
LnGrp LOS	D	D	D	D	D	C	E	C	C	D	C	C
Approach Vol, veh/h		634			1082			700			477	
Approach Delay, s/veh		44.4			41.9			28.3			26.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	47.0	21.1	22.1	13.4	44.0	14.7	28.5
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.8	40.8	21.2	25.8	14.8	33.8	17.8	* 29
Max Q Clear Time (g_c+I1), s	4.3	15.2	14.4	13.7	7.5	11.2	8.6	17.7
Green Ext Time (p_c), s	0.0	3.4	0.9	2.2	0.1	2.2	0.2	2.9

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	372	31	166	470	76	77	142	107	142	221	135
Future Volume (veh/h)	156	372	31	166	470	76	77	142	107	142	221	135
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	175	418	35	187	528	85	87	160	120	160	248	152
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	212	656	293	225	682	304	112	635	538	193	720	610
Arrive On Green	0.12	0.19	0.19	0.13	0.19	0.19	0.06	0.34	0.34	0.11	0.39	0.39
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	175	418	35	187	528	85	87	160	120	160	248	152
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	9.2	10.4	1.8	9.8	13.5	3.2	4.6	5.9	5.2	8.4	9.0	3.8
Cycle Q Clear(g_c), s	9.2	10.4	1.8	9.8	13.5	3.2	4.6	5.9	5.2	8.4	9.0	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	656	293	225	682	304	112	635	538	193	720	610
V/C Ratio(X)	0.83	0.64	0.12	0.83	0.77	0.28	0.78	0.25	0.22	0.83	0.34	0.25
Avail Cap(c_a), veh/h	412	1007	449	449	1081	482	271	635	538	252	720	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	35.8	32.3	40.6	36.4	16.9	43.9	22.6	22.3	41.6	20.6	7.4
Incr Delay (d2), s/veh	7.9	1.0	0.2	7.7	1.9	0.5	10.8	1.0	1.0	15.9	1.3	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	4.4	0.7	4.6	5.7	1.6	2.3	2.6	1.9	4.4	3.9	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.9	36.8	32.4	48.3	38.3	17.4	54.8	23.5	23.3	57.5	21.9	8.4
LnGrp LOS	D	D	C	D	D	B	D	C	C	E	C	A
Approach Vol, veh/h		628			800			367			560	
Approach Delay, s/veh		39.9			38.5			30.8			28.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	38.0	17.9	23.5	11.4	42.4	17.2	24.2
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	13.6	32.6	24.2	27.2	14.6	31.6	22.2	29.2
Max Q Clear Time (g_c+I1), s	10.4	7.9	11.8	12.4	6.6	11.0	11.2	15.5
Green Ext Time (p_c), s	0.1	1.2	0.4	2.2	0.1	1.7	0.3	2.9

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	42	151	306
Demand Flow Rate, veh/h	43	156	315
Vehicles Circulating, veh/h	138	40	16
Vehicles Exiting, veh/h	58	291	165
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.4	3.4	4.7
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	LR	LT	R	LT
Assumed Moves	LR	LT	R	LT
RT Channelized				
Lane Util	1.000	0.885	0.115	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
Entry Flow, veh/h	43	138	18	315
Cap Entry Lane, veh/h	1199	1369	1369	1358
Entry HV Adj Factor	0.977	0.971	0.944	0.971
Flow Entry, veh/h	42	134	17	306
Cap Entry, veh/h	1171	1329	1293	1319
V/C Ratio	0.036	0.101	0.013	0.232
Control Delay, s/veh	3.4	3.5	2.9	4.7
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	1

Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	211	320	231	191
Demand Flow Rate, veh/h	217	330	238	197
Vehicles Circulating, veh/h	281	193	190	327
Vehicles Exiting, veh/h	243	235	308	196
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.6	6.1	5.2	5.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	217	330	238	197
Cap Entry Lane, veh/h	1036	1133	1137	989
Entry HV Adj Factor	0.972	0.971	0.969	0.970
Flow Entry, veh/h	211	320	231	191
Cap Entry, veh/h	1007	1100	1101	959
V/C Ratio	0.209	0.291	0.209	0.199
Control Delay, s/veh	5.6	6.1	5.2	5.7
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Intersection	
Intersection Delay, s/veh	4.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	68	90	207	305
Demand Flow Rate, veh/h	70	93	214	313
Vehicles Circulating, veh/h	359	154	57	109
Vehicles Exiting, veh/h	63	117	372	138
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.6	3.8	4.2	5.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	70	93	214	313
Cap Entry Lane, veh/h	957	1179	1302	1235
Entry HV Adj Factor	0.968	0.969	0.968	0.973
Flow Entry, veh/h	68	90	207	305
Cap Entry, veh/h	926	1142	1260	1201
V/C Ratio	0.073	0.079	0.164	0.254
Control Delay, s/veh	4.6	3.8	4.2	5.3
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	353	259	288	446
Demand Flow Rate, veh/h	363	267	297	459
Vehicles Circulating, veh/h	336	375	428	210
Vehicles Exiting, veh/h	333	350	271	432
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.5	5.1	7.9	7.7
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.906	0.094	0.708	0.292	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	329	34	189	78	297	459
Cap Entry Lane, veh/h	1046	1046	1009	1009	892	1114
Entry HV Adj Factor	0.972	0.971	0.969	0.974	0.970	0.971
Flow Entry, veh/h	320	33	183	76	288	446
Cap Entry, veh/h	1017	1015	978	984	865	1082
V/C Ratio	0.315	0.033	0.187	0.077	0.333	0.412
Control Delay, s/veh	6.7	3.8	5.5	4.4	7.9	7.7
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	1	2

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	107	39	252	262	31
Future Vol, veh/h	50	107	39	252	262	31
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	56	119	43	280	291	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	674	308	325	0	-	0
Stage 1	308	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	418	730	1229	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	401	730	1229	-	-	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	713	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1229	-	579	-	-
HCM Lane V/C Ratio	0.035	-	0.301	-	-
HCM Control Delay (s)	8	0	13.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	35	241	38	55	289
Future Vol, veh/h	21	35	241	38	55	289
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	39	271	43	62	325

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	720	271	0	0	314	0
Stage 1	271	-	-	-	-	-
Stage 2	449	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	393	765	-	-	1241	-
Stage 1	772	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	369	765	-	-	1241	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	602	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	369	765	1241	-
HCM Lane V/C Ratio	-	-	0.064	0.051	0.05	-
HCM Control Delay (s)	-	-	15.4	10	8.1	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	0.2	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	78	15	59	99	27	100
Future Vol, veh/h	78	15	59	99	27	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	94	18	71	119	33	120

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	112	0	364	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	261	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1471	-	633	949
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1471	-	603	949
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	743	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	603	949	-	-	1471	-
HCM Lane V/C Ratio	0.054	0.127	-	-	0.048	-
HCM Control Delay (s)	11.3	9.3	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	169	181	121	71	10
Future Vol, veh/h	17	169	181	121	71	10
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	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	21	209	223	149	88	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	689	94	100	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	410	960	1486	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	960	1486	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	549	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	4.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1486	-	824	-	-
HCM Lane V/C Ratio	0.15	-	0.279	-	-
HCM Control Delay (s)	7.9	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.5	-	1.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	28	39	272	295	11
Future Vol, veh/h	9	28	39	272	295	11
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	10	33	45	316	343	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	598	350	356	0	-	0
Stage 1	350	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	447	690	1195	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	430	690	1195	-	-	-
Mov Cap-2 Maneuver	430	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	768	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1195	-	602	-	-
HCM Lane V/C Ratio	0.038	-	0.071	-	-
HCM Control Delay (s)	8.1	-	11.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	84	10	293	121	18	309
Future Vol, veh/h	84	10	293	121	18	309
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	99	12	345	142	21	364

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	640	244	0	0	487	0
Stage 1	416	-	-	-	-	-
Stage 2	224	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	406	753	-	-	1065	-
Stage 1	631	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	398	753	-	-	1065	-
Mov Cap-2 Maneuver	398	-	-	-	-	-
Stage 1	631	-	-	-	-	-
Stage 2	773	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	398	753	1065	-
HCM Lane V/C Ratio	-	-	0.248	0.016	0.02	-
HCM Control Delay (s)	-	-	17	9.9	8.4	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	1	0	0.1	-

Intersection	
Intersection Delay, s/veh	138
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	126	858	69	103	633	41	53	74	65	39	57	81
Future Vol, veh/h	126	858	69	103	633	41	53	74	65	39	57	81
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	142	964	78	116	711	46	60	83	73	44	64	91
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	205.1	102.6	23.6	18.9
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	53%	0%	100%	81%	0%	100%	84%	0%	100%	0%
Vol Right, %	0%	47%	0%	0%	19%	0%	0%	16%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	139	126	572	355	103	422	252	39	57	81
LT Vol	53	0	126	0	0	103	0	0	39	0	0
Through Vol	0	74	0	572	286	0	422	211	0	57	0
RT Vol	0	65	0	0	69	0	0	41	0	0	81
Lane Flow Rate	60	156	142	643	399	116	474	283	44	64	91
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.196	0.48	0.382	1.644	1.005	0.321	1.249	0.737	0.147	0.206	0.275
Departure Headway (Hd)	12.886	12.059	10.06	9.548	9.408	10.635	10.123	10.006	13.33	12.817	12.098
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	280	301	360	386	387	340	365	365	271	282	299
Service Time	10.586	9.759	7.76	7.248	7.108	8.335	7.823	7.706	11.03	10.517	9.798
HCM Lane V/C Ratio	0.214	0.518	0.394	1.666	1.031	0.341	1.299	0.775	0.162	0.227	0.304
HCM Control Delay	18.7	25.4	18.8	324.7	78.5	18.3	162.8	36.1	18.3	18.8	19.3
HCM Lane LOS	C	D	C	F	F	C	F	E	C	C	C
HCM 95th-tile Q	0.7	2.5	1.7	36.7	12.1	1.4	19.6	5.7	0.5	0.8	1.1

Intersection	
Intersection Delay, s/veh	212.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	170	749	38	44	702	63	37	57	46	47	41	96
Future Vol, veh/h	170	749	38	44	702	63	37	57	46	47	41	96
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	177	780	40	46	731	66	39	59	48	49	43	100
Number of Lanes	1	1	0	1	1	0	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	236.4	263.3	17.2	18.3
HCM LOS	F	F	C	C

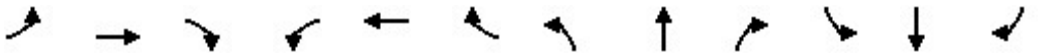
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	100%	0%	100%	0%	26%
Vol Thru, %	41%	0%	95%	0%	92%	22%
Vol Right, %	33%	0%	5%	0%	8%	52%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	140	170	787	44	765	184
LT Vol	37	170	0	44	0	47
Through Vol	57	0	749	0	702	41
RT Vol	46	0	38	0	63	96
Lane Flow Rate	146	177	820	46	797	192
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.321	0.364	1.565	0.096	1.55	0.405
Departure Headway (Hd)	9.662	8.143	7.592	8.235	7.66	9.197
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	375	444	484	438	478	395
Service Time	7.662	5.843	5.292	5.935	5.36	7.197
HCM Lane V/C Ratio	0.389	0.399	1.694	0.105	1.667	0.486
HCM Control Delay	17.2	15.4	284.1	11.8	277.8	18.3
HCM Lane LOS	C	C	F	B	F	C
HCM 95th-tile Q	1.4	1.6	40.4	0.3	39.3	1.9

Intersection	
Intersection Delay, s/veh	127.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	243	42	46	237	70	80	532	114	75	424	56
Future Vol, veh/h	64	243	42	46	237	70	80	532	114	75	424	56
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	70	264	46	50	258	76	87	578	124	82	461	61
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	56.6	38.6	268	45.4
HCM LOS	F	E	F	E

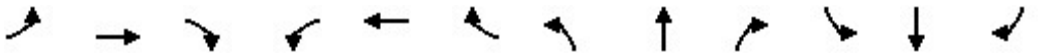
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	85%	0%	100%	0%	0%	100%	72%
Vol Right, %	0%	0%	100%	0%	15%	0%	0%	100%	0%	0%	28%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	532	114	64	285	46	237	70	75	283	197
LT Vol	80	0	0	64	0	46	0	0	75	0	0
Through Vol	0	532	0	0	243	0	237	0	0	283	141
RT Vol	0	0	114	0	42	0	0	70	0	0	56
Lane Flow Rate	87	578	124	70	310	50	258	76	82	307	214
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.27	1.715	0.342	0.215	0.908	0.16	0.788	0.218	0.248	0.892	0.611
Departure Headway (Hd)	11.195	10.674	9.946	12.144	11.541	12.82	12.299	11.57	12.191	11.666	11.457
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	321	341	361	298	316	282	296	312	297	313	317
Service Time	8.968	8.448	7.719	9.844	9.241	10.52	9.999	9.27	9.891	9.366	9.157
HCM Lane V/C Ratio	0.271	1.695	0.343	0.235	0.981	0.177	0.872	0.244	0.276	0.981	0.675
HCM Control Delay	18.1	359.2	17.8	18.1	65.3	17.9	48.8	17.5	18.9	62.7	30.6
HCM Lane LOS	C	F	C	C	F	C	E	C	C	F	D
HCM 95th-tile Q	1.1	35.9	1.5	0.8	8.7	0.6	6.2	0.8	1	8.3	3.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	317	115	247	401	162	240	773	60	164	484	196
Future Volume (veh/h)	410	317	115	247	401	162	240	773	60	164	484	196
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	432	334	121	260	422	171	253	814	63	173	509	206
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	462	904	403	294	569	254	255	1051	469	238	1034	461
Arrive On Green	0.26	0.26	0.26	0.17	0.16	0.16	0.07	0.30	0.30	0.07	0.30	0.30
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	432	334	121	260	422	171	253	814	63	173	509	206
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	24.6	8.0	6.4	14.8	11.7	8.3	7.6	21.8	1.9	5.1	12.3	11.0
Cycle Q Clear(g_c), s	24.6	8.0	6.4	14.8	11.7	8.3	7.6	21.8	1.9	5.1	12.3	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	462	904	403	294	569	254	255	1051	469	238	1034	461
V/C Ratio(X)	0.93	0.37	0.30	0.88	0.74	0.67	0.99	0.77	0.13	0.73	0.49	0.45
Avail Cap(c_a), veh/h	493	1310	584	387	1098	490	255	1051	469	238	1034	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	31.4	30.8	41.9	41.0	25.5	47.5	32.8	9.9	46.8	29.8	29.4
Incr Delay (d2), s/veh	24.4	0.3	0.4	17.0	1.9	3.1	54.3	5.6	0.6	10.5	1.7	3.1
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	13.2	3.3	2.4	7.6	5.0	3.2	5.0	9.5	1.1	2.4	5.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	31.6	31.2	58.8	43.0	28.6	101.9	38.3	10.5	57.4	31.5	32.5
LnGrp LOS	E	C	C	E	D	C	F	D	B	E	C	C
Approach Vol, veh/h		887			853			1130			888	
Approach Delay, s/veh		46.1			44.9			51.0			36.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	36.2	22.4	31.7	13.0	35.7	32.2	21.9
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	7.2	30.9	22.5	38.2	7.7	30.4	28.7	32.0
Max Q Clear Time (g_c+I1), s	7.1	23.8	16.8	10.0	9.6	14.3	26.6	13.7
Green Ext Time (p_c), s	0.0	3.0	0.4	2.4	0.0	3.4	0.3	2.9

Intersection Summary	
HCM 6th Ctrl Delay	45.1
HCM 6th LOS	D



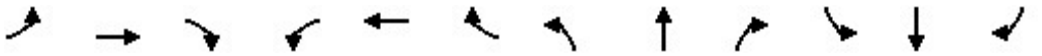
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	573	86	432	385	48	78	367	437	50	275	69
Future Volume (veh/h)	144	573	86	432	385	48	78	367	437	50	275	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	153	610	91	460	410	51	83	390	465	53	293	73
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	185	739	329	545	915	408	106	619	552	80	943	231
Arrive On Green	0.10	0.21	0.21	0.16	0.26	0.26	0.06	0.35	0.35	0.05	0.34	0.34
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1763	1572	1767	2807	688
Grp Volume(v), veh/h	153	610	91	460	410	51	83	390	465	53	182	184
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763	1732
Q Serve(g_s), s	8.8	17.1	5.0	13.5	10.1	2.6	4.8	19.1	28.3	3.1	7.9	8.2
Cycle Q Clear(g_c), s	8.8	17.1	5.0	13.5	10.1	2.6	4.8	19.1	28.3	3.1	7.9	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	185	739	329	545	915	408	106	619	552	80	593	582
V/C Ratio(X)	0.83	0.83	0.28	0.84	0.45	0.12	0.78	0.63	0.84	0.66	0.31	0.32
Avail Cap(c_a), veh/h	320	945	422	734	1061	473	218	619	552	157	593	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	39.2	34.4	42.4	32.2	29.4	48.0	28.0	31.0	48.7	25.5	25.6
Incr Delay (d2), s/veh	8.9	4.8	0.4	6.8	0.3	0.1	11.6	4.8	14.5	9.0	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	7.5	1.9	6.0	4.2	1.0	2.4	8.3	12.1	1.5	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	44.0	34.8	49.2	32.5	29.5	59.7	32.9	45.5	57.7	26.8	27.0
LnGrp LOS	D	D	C	D	C	C	E	C	D	E	C	C
Approach Vol, veh/h		854			921			938			419	
Approach Delay, s/veh		44.9			40.7			41.5			30.8	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.9	42.6	22.3	27.9	12.4	41.1	17.1	33.1
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	9.2	36.4	22.2	27.8	12.8	32.8	18.8	* 31
Max Q Clear Time (g_c+I1), s	5.1	30.3	15.5	19.1	6.8	10.2	10.8	12.1
Green Ext Time (p_c), s	0.0	2.6	1.0	2.6	0.1	1.8	0.2	2.4

Intersection Summary	
HCM 6th Ctrl Delay	40.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	204	777	106	241	640	161	103	315	214	126	219	107
Future Volume (veh/h)	204	777	106	241	640	161	103	315	214	126	219	107
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	215	818	112	254	674	169	108	332	225	133	231	113
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	246	938	419	286	1017	454	134	543	460	138	547	464
Arrive On Green	0.14	0.27	0.27	0.16	0.29	0.29	0.08	0.29	0.29	0.08	0.29	0.29
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	215	818	112	254	674	169	108	332	225	133	231	113
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	13.3	24.6	4.8	15.6	18.7	7.1	6.7	17.1	13.1	8.3	11.1	6.1
Cycle Q Clear(g_c), s	13.3	24.6	4.8	15.6	18.7	7.1	6.7	17.1	13.1	8.3	11.1	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	938	419	286	1017	454	134	543	460	138	547	464
V/C Ratio(X)	0.87	0.87	0.27	0.89	0.66	0.37	0.81	0.61	0.49	0.96	0.42	0.24
Avail Cap(c_a), veh/h	323	1053	470	369	1145	511	184	543	460	138	547	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	39.0	18.6	45.6	34.8	17.7	50.6	33.9	32.5	51.1	31.6	29.8
Incr Delay (d2), s/veh	18.2	7.5	0.3	18.8	1.2	0.5	16.4	5.1	3.7	64.6	2.4	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	6.9	11.1	2.3	8.1	7.8	3.4	3.5	8.2	5.3	6.1	5.2	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	46.5	18.9	64.4	36.0	18.2	67.0	39.0	36.2	115.7	34.0	31.0
LnGrp LOS	E	D	B	E	D	B	E	D	D	F	C	C
Approach Vol, veh/h		1145			1097			665			477	
Approach Delay, s/veh		47.3			39.8			42.6			56.0	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.1	37.9	23.8	35.4	13.8	38.2	21.3	37.9
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	8.7	32.5	23.2	33.2	11.6	29.6	20.3	36.1
Max Q Clear Time (g_c+I1), s	10.3	19.1	17.6	26.6	8.7	13.1	15.3	20.7
Green Ext Time (p_c), s	0.0	2.2	0.3	2.9	0.1	1.4	0.3	4.2

Intersection Summary	
HCM 6th Ctrl Delay	45.2
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	76	331	240
Demand Flow Rate, veh/h	78	341	247
Vehicles Circulating, veh/h	316	48	31
Vehicles Exiting, veh/h	73	230	363
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.4	4.6	4.3
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	LR	LT	R	LT
Assumed Moves	LR	LT	R	LT
RT Channelized				
Lane Util	1.000	0.927	0.073	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
Entry Flow, veh/h	78	316	25	247
Cap Entry Lane, veh/h	1000	1359	1359	1337
Entry HV Adj Factor	0.974	0.971	0.960	0.972
Flow Entry, veh/h	76	307	24	240
Cap Entry, veh/h	974	1320	1305	1300
V/C Ratio	0.078	0.232	0.018	0.185
Control Delay, s/veh	4.4	4.7	2.9	4.3
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	1

Intersection	
Intersection Delay, s/veh	4.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	117	119	167	93
Demand Flow Rate, veh/h	120	123	172	95
Vehicles Circulating, veh/h	116	160	110	130
Vehicles Exiting, veh/h	109	122	126	153
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	4.1	4.2	3.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	120	123	172	95
Cap Entry Lane, veh/h	1226	1172	1233	1209
Entry HV Adj Factor	0.978	0.971	0.972	0.975
Flow Entry, veh/h	117	119	167	93
Cap Entry, veh/h	1199	1138	1199	1178
V/C Ratio	0.098	0.105	0.139	0.079
Control Delay, s/veh	3.8	4.1	4.2	3.7
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	101	193	464	288
Demand Flow Rate, veh/h	104	199	478	296
Vehicles Circulating, veh/h	358	401	94	199
Vehicles Exiting, veh/h	137	171	368	401
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.9	6.2	6.7	5.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	104	199	478	296
Cap Entry Lane, veh/h	958	917	1254	1126
Entry HV Adj Factor	0.973	0.972	0.972	0.972
Flow Entry, veh/h	101	193	464	288
Cap Entry, veh/h	932	891	1218	1094
V/C Ratio	0.109	0.217	0.381	0.263
Control Delay, s/veh	4.9	6.2	6.7	5.8
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	1

Intersection	
Intersection Delay, s/veh	4.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	242	240	115	72
Demand Flow Rate, veh/h	249	247	118	74
Vehicles Circulating, veh/h	87	95	246	242
Vehicles Exiting, veh/h	229	269	90	100
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.3	4.2	4.4	4.0
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.948	0.052	0.923	0.077	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	236	13	228	19	118	74
Cap Entry Lane, veh/h	1312	1312	1302	1302	1074	1078
Entry HV Adj Factor	0.970	1.000	0.972	0.947	0.971	0.974
Flow Entry, veh/h	229	13	222	18	115	72
Cap Entry, veh/h	1273	1312	1266	1234	1042	1050
V/C Ratio	0.180	0.010	0.175	0.015	0.110	0.069
Control Delay, s/veh	4.3	2.8	4.3	3.0	4.4	4.0
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	0	0

5-YEAR HORIZON CONDITIONS

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	35	51	248	184	46
Future Vol, veh/h	24	35	51	248	184	46
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	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	27	40	58	282	209	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	633	235	261	0	-	0
Stage 1	235	-	-	-	-	-
Stage 2	398	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	442	802	1298	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	419	802	1298	-	-	-
Mov Cap-2 Maneuver	419	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1298	-	585	-	-
HCM Lane V/C Ratio	0.045	-	0.115	-	-
HCM Control Delay (s)	7.9	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	116	298	30	39	240
Future Vol, veh/h	58	116	298	30	39	240
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	65	130	335	34	44	270

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	693	335	0	0	369	0
Stage 1	335	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	408	705	-	-	1184	-
Stage 1	722	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	390	705	-	-	1184	-
Mov Cap-2 Maneuver	390	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	390	705	1184	-
HCM Lane V/C Ratio	-	-	0.167	0.185	0.037	-
HCM Control Delay (s)	-	-	16.1	11.3	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.7	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	73	10	2	82	5	10
Future Vol, veh/h	73	10	2	82	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	81	11	2	91	6	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	92	0	182	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	95	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1496	-	805	969
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1496	-	804	969
Mov Cap-2 Maneuver	-	-	-	-	804	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	804	969	-	-	1496	-
HCM Lane V/C Ratio	0.007	0.011	-	-	0.001	-
HCM Control Delay (s)	9.5	8.8	-	-	7.4	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	57	57	0	0	0
Future Vol, veh/h	0	57	57	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	71	71	0	0	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	142	0
Stage 1	-	-	0	-
Stage 2	-	-	142	-
Critical Hdwy	4.13	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.53	-
Follow-up Hdwy	2.227	-	4.027	3.327
Pot Cap-1 Maneuver	-	-	747	-
Stage 1	-	-	-	-
Stage 2	-	-	777	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS		A

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	60	19	321	303	2
Future Vol, veh/h	10	60	19	321	303	2
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	71	22	378	356	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	590	357	358	0	-	0
Stage 1	357	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	452	684	1193	-	-	-
Stage 1	705	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	444	684	1193	-	-	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	782	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1193	-	635	-	-
HCM Lane V/C Ratio	0.019	-	0.13	-	-
HCM Control Delay (s)	8.1	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	166	37	305	87	18	347
Future Vol, veh/h	166	37	305	87	18	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	184	41	339	97	20	386

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	621	218	0	0	436	0
Stage 1	388	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	417	783	-	-	1113	-
Stage 1	652	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	409	783	-	-	1113	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	409	783	1113	-
HCM Lane V/C Ratio	-	-	0.451	0.053	0.018	-
HCM Control Delay (s)	-	-	20.8	9.9	8.3	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.2	0.1	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	24	53	17	30	27
Future Vol, veh/h	16	24	53	17	30	27
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	18	27	60	19	34	31
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.2	7.6	7.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	40%	53%
Vol Thru, %	100%	0%	0%	47%
Vol Right, %	0%	100%	60%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	17	40	57
LT Vol	0	0	16	30
Through Vol	53	0	0	27
RT Vol	0	17	24	0
Lane Flow Rate	60	19	45	65
Geometry Grp	7	7	2	5
Degree of Util (X)	0.078	0.021	0.049	0.077
Departure Headway (Hd)	4.663	3.962	3.915	4.295
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	768	902	900	831
Service Time	2.392	1.691	2.002	2.336
HCM Lane V/C Ratio	0.078	0.021	0.05	0.078
HCM Control Delay	7.8	6.8	7.2	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0.2

Intersection	
Intersection Delay, s/veh	91.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	617	52	89	721	32	107	77	114	53	91	63
Future Vol, veh/h	43	617	52	89	721	32	107	77	114	53	91	63
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	46	663	56	96	775	34	115	83	123	57	98	68
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	93.5	131	25.4	18.5
HCM LOS	F	F	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	40%	0%	100%	80%	0%	100%	88%	0%	100%	0%
Vol Right, %	0%	60%	0%	0%	20%	0%	0%	12%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	107	191	43	411	258	89	481	272	53	91	63
LT Vol	107	0	43	0	0	89	0	0	53	0	0
Through Vol	0	77	0	411	206	0	481	240	0	91	0
RT Vol	0	114	0	0	52	0	0	32	0	0	63
Lane Flow Rate	115	205	46	442	277	96	517	293	57	98	68
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.358	0.588	0.13	1.182	0.73	0.265	1.358	0.763	0.186	0.305	0.198
Departure Headway (Hd)	11.763	10.845	10.69	10.175	10.03	10.356	9.841	9.756	12.585	12.069	11.347
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	308	335	338	358	363	349	372	375	287	299	318
Service Time	9.463	8.545	8.39	7.875	7.73	8.056	7.541	7.456	10.285	9.769	9.047
HCM Lane V/C Ratio	0.373	0.612	0.136	1.235	0.763	0.275	1.39	0.781	0.199	0.328	0.214
HCM Control Delay	20.9	27.9	15	138	35.6	16.7	204.9	37.8	18.1	20	16.8
HCM Lane LOS	C	D	B	F	E	C	F	E	C	C	C
HCM 95th-tile Q	1.6	3.5	0.4	17.2	5.6	1	24.1	6.2	0.7	1.3	0.7

Intersection	
Intersection Delay, s/veh	287
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	590	47	43	559	45	54	175	47	85	141	161
Future Vol, veh/h	87	590	47	43	559	45	54	175	47	85	141	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	100	678	54	49	643	52	62	201	54	98	162	185
Number of Lanes	1	1	0	1	1	0	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	386	368.3	63.1	125.4
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	20%	100%	0%	100%	0%	22%
Vol Thru, %	63%	0%	93%	0%	93%	36%
Vol Right, %	17%	0%	7%	0%	7%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	276	87	637	43	604	387
LT Vol	54	87	0	43	0	85
Through Vol	175	0	590	0	559	141
RT Vol	47	0	47	0	45	161
Lane Flow Rate	317	100	732	49	694	445
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.844	0.273	1.887	0.135	1.79	1.116
Departure Headway (Hd)	14.088	11.944	11.356	11.859	11.27	12.588
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	260	303	329	304	333	294
Service Time	12.088	9.644	9.056	9.559	8.97	10.588
HCM Lane V/C Ratio	1.219	0.33	2.225	0.161	2.084	1.514
HCM Control Delay	63.1	19.1	436.1	16.4	393.4	125.4
HCM Lane LOS	F	C	F	C	F	F
HCM 95th-tile Q	6.8	1.1	40.7	0.5	37.3	13.2

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

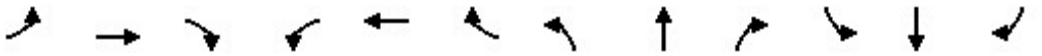
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	151	38	25	117	22	28	216	26	54	312	31
Future Vol, veh/h	31	151	38	25	117	22	28	216	26	54	312	31
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	36	174	44	29	134	25	32	248	30	62	359	36
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	15.5	13.2	16.6	14.6
HCM LOS	C	B	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	80%	0%	100%	0%	0%	100%	77%
Vol Right, %	0%	0%	100%	0%	20%	0%	0%	100%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	216	26	31	189	25	117	22	54	208	135
LT Vol	28	0	0	31	0	25	0	0	54	0	0
Through Vol	0	216	0	0	151	0	117	0	0	208	104
RT Vol	0	0	26	0	38	0	0	22	0	0	31
Lane Flow Rate	32	248	30	36	217	29	134	25	62	239	155
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.072	0.518	0.056	0.08	0.45	0.067	0.296	0.051	0.133	0.48	0.304
Departure Headway (Hd)	8.024	7.517	6.806	8.091	7.451	8.424	7.918	7.211	7.733	7.226	7.063
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	446	479	525	443	482	425	453	495	464	497	509
Service Time	5.777	5.27	4.559	5.842	5.201	6.184	5.678	4.971	5.483	4.976	4.813
HCM Lane V/C Ratio	0.072	0.518	0.057	0.081	0.45	0.068	0.296	0.051	0.134	0.481	0.305
HCM Control Delay	11.4	18.1	10	11.5	16.2	11.8	14	10.4	11.7	16.5	12.9
HCM Lane LOS	B	C	A	B	C	B	B	B	B	C	B
HCM 95th-tile Q	0.2	2.9	0.2	0.3	2.3	0.2	1.2	0.2	0.5	2.6	1.3

HCM 6th Signalized Intersection Summary
9: Dinuba Boulevard & Riggin Avenue

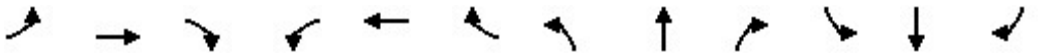
11/18/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	337	163	149	316	104	158	386	57	145	551	188
Future Volume (veh/h)	245	337	163	149	316	104	158	386	57	145	551	188
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	258	355	172	157	333	109	166	406	60	153	580	198
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	303	706	315	195	492	219	243	1269	566	263	1290	575
Arrive On Green	0.17	0.20	0.20	0.11	0.14	0.14	0.07	0.36	0.36	0.08	0.37	0.37
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	258	355	172	157	333	109	166	406	60	153	580	198
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	12.1	7.6	8.4	7.4	7.6	5.5	4.1	7.1	1.4	3.7	10.7	4.2
Cycle Q Clear(g_c), s	12.1	7.6	8.4	7.4	7.6	5.5	4.1	7.1	1.4	3.7	10.7	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	706	315	195	492	219	243	1269	566	263	1290	575
V/C Ratio(X)	0.85	0.50	0.55	0.80	0.68	0.50	0.68	0.32	0.11	0.58	0.45	0.34
Avail Cap(c_a), veh/h	533	1602	715	394	1325	591	387	1269	566	407	1290	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	30.3	30.6	37.0	34.8	33.9	38.6	19.5	7.2	37.9	20.3	5.5
Incr Delay (d2), s/veh	6.8	0.6	1.5	7.6	1.6	1.7	3.4	0.7	0.4	2.0	1.1	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	3.1	3.1	3.4	3.2	2.1	1.7	2.8	0.8	1.5	4.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	30.8	32.0	44.5	36.4	35.6	41.9	20.2	7.5	40.0	21.5	7.1
LnGrp LOS	D	C	C	D	D	D	D	C	A	D	C	A
Approach Vol, veh/h		785			599			632			931	
Approach Delay, s/veh		34.4			38.4			24.7			21.5	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	36.2	14.7	22.4	11.4	36.7	19.9	17.2
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	10.2	30.9	19.0	38.7	9.7	31.4	25.7	32.0
Max Q Clear Time (g_c+I1), s	5.7	9.1	9.4	10.4	6.1	12.7	14.1	9.6
Green Ext Time (p_c), s	0.2	2.5	0.3	2.7	0.2	4.0	0.5	2.2

Intersection Summary	
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C



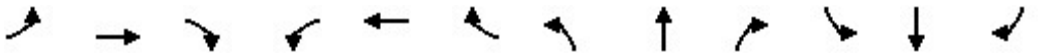
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	422	88	347	556	59	101	338	238	41	319	124
Future Volume (veh/h)	122	422	88	347	556	59	101	338	238	41	319	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	131	454	95	373	598	63	109	363	256	44	343	133
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	610	272	460	745	333	138	810	562	75	927	353
Arrive On Green	0.09	0.17	0.17	0.13	0.21	0.21	0.08	0.41	0.41	0.04	0.37	0.37
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1989	1381	1767	2496	951
Grp Volume(v), veh/h	131	454	95	373	598	63	109	321	298	44	241	235
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1607	1767	1763	1684
Q Serve(g_s), s	7.3	12.3	5.3	10.6	16.1	3.3	6.1	13.2	13.5	2.5	10.0	10.2
Cycle Q Clear(g_c), s	7.3	12.3	5.3	10.6	16.1	3.3	6.1	13.2	13.5	2.5	10.0	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.86	1.00		0.56
Lane Grp Cap(c), veh/h	162	610	272	460	745	333	138	718	654	75	655	626
V/C Ratio(X)	0.81	0.74	0.35	0.81	0.80	0.19	0.79	0.45	0.46	0.59	0.37	0.38
Avail Cap(c_a), veh/h	296	907	405	725	1062	474	279	718	654	138	655	626
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	39.3	36.5	42.2	37.5	32.5	45.4	21.5	21.6	47.1	22.9	23.0
Incr Delay (d2), s/veh	9.1	1.8	0.8	3.8	3.0	0.3	9.7	2.0	2.3	7.2	1.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.2	2.0	4.5	6.9	1.2	2.9	5.4	5.1	1.2	4.1	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	41.2	37.2	46.0	40.5	32.7	55.1	23.6	23.9	54.3	24.5	24.7
LnGrp LOS	D	D	D	D	D	C	E	C	C	D	C	C
Approach Vol, veh/h		680			1034			728			520	
Approach Delay, s/veh		43.0			42.0			28.4			27.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	47.0	19.3	23.5	14.0	43.4	15.4	27.4
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.8	40.8	21.2	25.8	15.8	32.8	16.8	* 30
Max Q Clear Time (g_c+I1), s	4.5	15.5	12.6	14.3	8.1	12.2	9.3	18.1
Green Ext Time (p_c), s	0.0	3.5	0.9	2.3	0.1	2.4	0.2	3.0

Intersection Summary	
HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	398	34	172	499	55	84	119	112	73	141	101
Future Volume (veh/h)	153	398	34	172	499	55	84	119	112	73	141	101
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	172	447	38	193	561	62	94	134	126	82	158	113
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	211	689	307	234	734	327	121	665	563	106	649	550
Arrive On Green	0.12	0.20	0.20	0.13	0.21	0.21	0.07	0.36	0.36	0.06	0.35	0.35
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	172	447	38	193	561	62	94	134	126	82	158	113
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	8.4	10.3	1.8	9.4	13.2	2.2	4.6	4.4	4.9	4.0	5.3	2.8
Cycle Q Clear(g_c), s	8.4	10.3	1.8	9.4	13.2	2.2	4.6	4.4	4.9	4.0	5.3	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	689	307	234	734	327	121	665	563	106	649	550
V/C Ratio(X)	0.81	0.65	0.12	0.83	0.76	0.19	0.78	0.20	0.22	0.77	0.24	0.21
Avail Cap(c_a), veh/h	445	1127	503	485	1207	538	293	665	563	272	649	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	32.7	29.3	37.3	32.9	16.8	40.4	19.6	19.7	40.9	20.4	7.7
Incr Delay (d2), s/veh	7.4	1.0	0.2	7.2	1.7	0.3	10.1	0.7	0.9	11.2	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	4.2	0.6	4.3	5.5	1.0	2.3	1.9	1.8	2.0	2.3	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	33.7	29.4	44.5	34.6	17.1	50.5	20.3	20.7	52.1	21.3	8.6
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	C	A
Approach Vol, veh/h		657			816			354			353	
Approach Delay, s/veh		36.5			35.6			28.4			24.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	37.0	17.5	23.0	11.5	36.2	16.3	24.2
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	13.6	31.6	24.2	28.2	14.6	30.6	22.2	30.2
Max Q Clear Time (g_c+I1), s	6.0	6.9	11.4	12.3	6.6	7.3	10.4	15.2
Green Ext Time (p_c), s	0.1	1.1	0.4	2.5	0.1	1.1	0.3	3.2

Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	5.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	231	352	211	79
Demand Flow Rate, veh/h	237	362	218	82
Vehicles Circulating, veh/h	175	168	206	358
Vehicles Exiting, veh/h	265	256	206	172
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	6.2	5.1	4.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	237	362	218	82
Cap Entry Lane, veh/h	1154	1163	1118	958
Entry HV Adj Factor	0.973	0.972	0.970	0.969
Flow Entry, veh/h	231	352	211	79
Cap Entry, veh/h	1123	1130	1085	928
V/C Ratio	0.205	0.311	0.195	0.086
Control Delay, s/veh	5.1	6.2	5.1	4.7
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	74	94	144	83
Demand Flow Rate, veh/h	76	97	149	85
Vehicles Circulating, veh/h	133	84	56	116
Vehicles Exiting, veh/h	68	121	153	65
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.6	3.8	3.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	76	97	149	85
Cap Entry Lane, veh/h	1205	1267	1303	1226
Entry HV Adj Factor	0.969	0.969	0.968	0.978
Flow Entry, veh/h	74	94	144	83
Cap Entry, veh/h	1168	1228	1262	1199
V/C Ratio	0.063	0.077	0.114	0.069
Control Delay, s/veh	3.6	3.6	3.8	3.6
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	375	276	317	492
Demand Flow Rate, veh/h	386	285	327	507
Vehicles Circulating, veh/h	370	414	459	220
Vehicles Exiting, veh/h	357	372	297	479
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.0	5.4	8.8	8.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.904	0.096	0.695	0.305	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	349	37	198	87	327	507
Cap Entry Lane, veh/h	1014	1014	974	974	864	1103
Entry HV Adj Factor	0.970	0.973	0.970	0.966	0.970	0.971
Flow Entry, veh/h	339	36	192	84	317	492
Cap Entry, veh/h	984	987	945	941	838	1070
V/C Ratio	0.344	0.036	0.203	0.089	0.378	0.460
Control Delay, s/veh	7.3	4.0	5.8	4.6	8.8	8.5
LOS	A	A	A	A	A	A
95th %tile Queue, veh	2	0	1	0	2	2

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	114	41	273	280	34
Future Vol, veh/h	55	114	41	273	280	34
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	61	127	46	303	311	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	725	330	349	0	-	0
Stage 1	330	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	391	709	1204	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	373	709	1204	-	-	-
Mov Cap-2 Maneuver	373	-	-	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	678	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1204	-	548	-	-
HCM Lane V/C Ratio	0.038	-	0.343	-	-
HCM Control Delay (s)	8.1	0	15	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.5	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	32	265	38	50	318
Future Vol, veh/h	21	32	265	38	50	318
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	36	298	43	56	357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	767	298	0	0	341	0
Stage 1	298	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	369	739	-	-	1213	-
Stage 1	751	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	348	739	-	-	1213	-
Mov Cap-2 Maneuver	348	-	-	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	592	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.5	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	348	739	1213	-
HCM Lane V/C Ratio	-	-	0.068	0.049	0.046	-
HCM Control Delay (s)	-	-	16.1	10.1	8.1	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	71	17	7	100	29	11
Future Vol, veh/h	71	17	7	100	29	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	20	8	120	35	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	106	0	232	96
Stage 1	-	-	-	-	96	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1479	-	754	958
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1479	-	750	958
Mov Cap-2 Maneuver	-	-	-	-	750	-
Stage 1	-	-	-	-	925	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	750	958	-	-	1479	-
HCM Lane V/C Ratio	0.047	0.014	-	-	0.006	-
HCM Control Delay (s)	10	8.8	-	-	7.4	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	108	66	0	0	0
Future Vol, veh/h	0	108	66	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	133	81	0	0	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	162	0
Stage 1	-	-	0	-
Stage 2	-	-	162	-
Critical Hdwy	4.13	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.53	-
Follow-up Hdwy	2.227	-	4.027	3.327
Pot Cap-1 Maneuver	-	-	729	-
Stage 1	-	-	-	-
Stage 2	-	-	762	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS		A

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	31	43	299	324	10
Future Vol, veh/h	6	31	43	299	324	10
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	7	36	50	348	377	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	657	383	389	0	-	0
Stage 1	383	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	412	661	1161	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	394	661	1161	-	-	-
Mov Cap-2 Maneuver	394	-	-	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1161	-	596	-	-
HCM Lane V/C Ratio	0.043	-	0.072	-	-
HCM Control Delay (s)	8.2	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	92	10	323	134	20	340
Future Vol, veh/h	92	10	323	134	20	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	108	12	380	158	24	400

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	707	269	0	0	538	0
Stage 1	459	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	368	726	-	-	1019	-
Stage 1	600	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	359	726	-	-	1019	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	749	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	359	726	1019	-
HCM Lane V/C Ratio	-	-	0.301	0.016	0.023	-
HCM Control Delay (s)	-	-	19.3	10	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0	0.1	-

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	38	51	25	43	44
Future Vol, veh/h	30	38	51	25	43	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	33	41	55	27	47	48
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.5	7.6	8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	44%	49%
Vol Thru, %	100%	0%	0%	51%
Vol Right, %	0%	100%	56%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	25	68	87
LT Vol	0	0	30	43
Through Vol	51	0	0	44
RT Vol	0	25	38	0
Lane Flow Rate	55	27	74	95
Geometry Grp	7	7	2	5
Degree of Util (X)	0.073	0.03	0.084	0.114
Departure Headway (Hd)	4.731	4.03	4.11	4.342
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	753	882	877	819
Service Time	2.486	1.784	2.11	2.404
HCM Lane V/C Ratio	0.073	0.031	0.084	0.116
HCM Control Delay	7.9	6.9	7.5	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.3	0.4

Intersection	
Intersection Delay, s/veh	138.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	868	77	113	646	45	58	74	72	43	59	36
Future Vol, veh/h	47	868	77	113	646	45	58	74	72	43	59	36
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	53	975	87	127	726	51	65	83	81	48	66	40
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	215.3	93.5	22.8	17.7
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	51%	0%	100%	79%	0%	100%	83%	0%	100%	0%
Vol Right, %	0%	49%	0%	0%	21%	0%	0%	17%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	146	47	579	366	113	431	260	43	59	36
LT Vol	58	0	47	0	0	113	0	0	43	0	0
Through Vol	0	74	0	579	289	0	431	215	0	59	0
RT Vol	0	72	0	0	77	0	0	45	0	0	36
Lane Flow Rate	65	164	53	650	412	127	484	293	48	66	40
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.208	0.486	0.14	1.629	1.014	0.337	1.219	0.727	0.159	0.209	0.12
Departure Headway (Hd)	12.346	11.501	9.818	9.306	9.156	10.14	9.629	9.506	12.935	12.422	11.703
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	293	315	368	397	399	357	382	383	279	291	308
Service Time	10.046	9.201	7.518	7.006	6.856	7.84	7.329	7.206	10.635	10.122	9.403
HCM Lane V/C Ratio	0.222	0.521	0.144	1.637	1.033	0.356	1.267	0.765	0.172	0.227	0.13
HCM Control Delay	18.3	24.6	14.1	317.4	79.7	17.9	149.4	33.7	18.1	18.4	16
HCM Lane LOS	C	C	B	F	F	C	F	D	C	C	C
HCM 95th-tile Q	0.8	2.5	0.5	36.8	12.6	1.5	19.2	5.6	0.6	0.8	0.4

Intersection	
Intersection Delay, s/veh	205.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	174	750	37	48	668	65	32	62	50	49	45	98
Future Vol, veh/h	174	750	37	48	668	65	32	62	50	49	45	98
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	181	781	39	50	696	68	33	65	52	51	47	102
Number of Lanes	1	1	0	1	1	0	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	241.6	240.8	17.3	18.7
HCM LOS	F	F	C	C

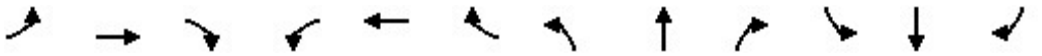
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	100%	0%	100%	0%	26%
Vol Thru, %	43%	0%	95%	0%	91%	23%
Vol Right, %	35%	0%	5%	0%	9%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	174	787	48	733	192
LT Vol	32	174	0	48	0	49
Through Vol	62	0	750	0	668	45
RT Vol	50	0	37	0	65	98
Lane Flow Rate	150	181	820	50	764	200
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.332	0.377	1.582	0.106	1.498	0.424
Departure Headway (Hd)	9.63	8.176	7.626	8.327	7.747	9.168
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	377	442	484	433	473	396
Service Time	7.63	5.876	5.326	6.027	5.447	7.168
HCM Lane V/C Ratio	0.398	0.41	1.694	0.115	1.615	0.505
HCM Control Delay	17.3	15.7	291.5	12	255.8	18.7
HCM Lane LOS	C	C	F	B	F	C
HCM 95th-tile Q	1.4	1.7	41.1	0.4	36.1	2.1

Intersection	
Intersection Delay, s/veh	109.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	268	46	51	261	69	88	477	126	78	400	57
Future Vol, veh/h	63	268	46	51	261	69	88	477	126	78	400	57
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	68	291	50	55	284	75	96	518	137	85	435	62
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	80.1	50.1	209.4	44.1
HCM LOS	F	F	F	E

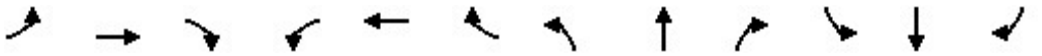
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	85%	0%	100%	0%	0%	100%	70%
Vol Right, %	0%	0%	100%	0%	15%	0%	0%	100%	0%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	477	126	63	314	51	261	69	78	267	190
LT Vol	88	0	0	63	0	51	0	0	78	0	0
Through Vol	0	477	0	0	268	0	261	0	0	267	133
RT Vol	0	0	126	0	46	0	0	69	0	0	57
Lane Flow Rate	96	518	137	68	341	55	284	75	85	290	207
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.299	1.562	0.385	0.216	1.023	0.182	0.891	0.221	0.267	0.874	0.612
Departure Headway (Hd)	11.677	11.154	10.423	12.156	11.554	12.832	12.311	11.582	12.449	11.923	11.702
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	310	332	348	297	317	282	298	312	291	307	310
Service Time	9.377	8.854	8.123	9.856	9.254	10.532	10.011	9.282	10.149	9.623	9.402
HCM Lane V/C Ratio	0.31	1.56	0.394	0.229	1.076	0.195	0.953	0.24	0.292	0.945	0.668
HCM Control Delay	19.3	294.7	19.5	18.2	92.5	18.4	64.9	17.5	19.6	60.4	31.2
HCM Lane LOS	C	F	C	C	F	C	F	C	C	F	D
HCM 95th-tile Q	1.2	29.2	1.8	0.8	11.4	0.7	8.1	0.8	1.1	7.9	3.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	321	97	273	398	169	209	834	66	172	519	204
Future Volume (veh/h)	431	321	97	273	398	169	209	834	66	172	519	204
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	454	338	102	287	419	178	220	878	69	181	546	215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	480	881	393	321	564	252	251	1039	463	231	1019	454
Arrive On Green	0.27	0.25	0.25	0.18	0.16	0.16	0.07	0.30	0.30	0.07	0.29	0.29
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	454	338	102	287	419	178	220	878	69	181	546	215
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	26.3	8.3	5.4	16.6	11.8	8.9	6.7	24.6	2.0	5.5	13.7	11.8
Cycle Q Clear(g_c), s	26.3	8.3	5.4	16.6	11.8	8.9	6.7	24.6	2.0	5.5	13.7	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	480	881	393	321	564	252	251	1039	463	231	1019	454
V/C Ratio(X)	0.95	0.38	0.26	0.89	0.74	0.71	0.88	0.85	0.15	0.78	0.54	0.47
Avail Cap(c_a), veh/h	486	1220	544	417	1081	482	251	1039	463	231	1019	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	32.5	31.4	41.7	41.8	26.4	47.9	34.4	9.6	47.9	31.1	30.4
Incr Delay (d2), s/veh	27.5	0.3	0.3	17.6	2.0	3.6	27.5	8.4	0.7	15.8	2.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	3.4	2.0	8.5	5.1	3.4	3.7	11.1	1.3	2.7	5.8	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.7	32.7	31.7	59.3	43.7	30.1	75.4	42.9	10.3	63.7	33.1	33.9
LnGrp LOS	E	C	C	E	D	C	E	D	B	E	C	C
Approach Vol, veh/h		894			884			1167			942	
Approach Delay, s/veh		48.9			46.0			47.1			39.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	36.3	24.3	31.4	13.0	35.7	33.7	22.0
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	7.1	31.0	24.6	36.1	7.7	30.4	28.7	32.0
Max Q Clear Time (g_c+I1), s	7.5	26.6	18.6	10.3	8.7	15.7	28.3	13.8
Green Ext Time (p_c), s	0.0	2.2	0.4	2.3	0.0	3.5	0.1	2.9

Intersection Summary	
HCM 6th Ctrl Delay	45.3
HCM 6th LOS	D



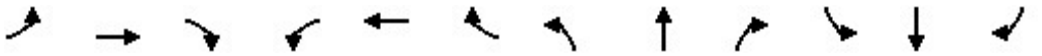
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	576	95	407	390	52	86	404	369	54	302	76
Future Volume (veh/h)	159	576	95	407	390	52	86	404	369	54	302	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	169	613	101	433	415	55	91	430	393	57	321	81
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	202	740	330	515	852	380	116	636	567	82	956	238
Arrive On Green	0.11	0.21	0.21	0.15	0.24	0.24	0.07	0.36	0.36	0.05	0.34	0.34
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1763	1572	1767	2798	696
Grp Volume(v), veh/h	169	613	101	433	415	55	91	430	393	57	201	201
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763	1730
Q Serve(g_s), s	9.8	17.4	5.7	12.9	10.6	2.9	5.3	21.6	22.3	3.3	8.9	9.1
Cycle Q Clear(g_c), s	9.8	17.4	5.7	12.9	10.6	2.9	5.3	21.6	22.3	3.3	8.9	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	202	740	330	515	852	380	116	636	567	82	602	591
V/C Ratio(X)	0.84	0.83	0.31	0.84	0.49	0.14	0.79	0.68	0.69	0.70	0.33	0.34
Avail Cap(c_a), veh/h	346	936	417	694	959	428	199	636	567	148	602	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	39.6	35.0	43.3	34.1	31.2	48.2	28.3	28.5	49.2	25.6	25.7
Incr Delay (d2), s/veh	8.8	5.1	0.5	6.9	0.4	0.2	11.1	5.7	6.8	10.1	1.5	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	7.6	2.1	5.7	4.4	1.1	2.6	9.4	8.8	1.6	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	44.7	35.5	50.3	34.6	31.4	59.4	34.0	35.3	59.3	27.1	27.3
LnGrp LOS	D	D	D	D	C	C	E	C	D	E	C	C
Approach Vol, veh/h		883			903			914			459	
Approach Delay, s/veh		45.4			41.9			37.1			31.2	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	44.0	21.5	28.2	13.1	42.0	18.2	31.5
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	8.8	37.8	21.2	27.8	11.8	34.8	20.5	* 29
Max Q Clear Time (g_c+I1), s	5.3	24.3	14.9	19.4	7.3	11.1	11.8	12.6
Green Ext Time (p_c), s	0.0	4.0	0.9	2.6	0.1	2.0	0.3	2.3

Intersection Summary	
HCM 6th Ctrl Delay	39.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	831	117	256	686	84	113	234	223	84	173	85
Future Volume (veh/h)	172	831	117	256	686	84	113	234	223	84	173	85
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	181	875	123	269	722	88	119	246	235	88	182	89
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	213	996	444	301	1171	522	146	521	442	111	484	411
Arrive On Green	0.12	0.28	0.28	0.17	0.33	0.33	0.08	0.28	0.28	0.06	0.26	0.26
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	181	875	123	269	722	88	119	246	235	88	182	89
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	11.0	26.1	5.0	16.4	18.9	3.3	7.3	12.1	13.9	5.4	8.8	4.9
Cycle Q Clear(g_c), s	11.0	26.1	5.0	16.4	18.9	3.3	7.3	12.1	13.9	5.4	8.8	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	213	996	444	301	1171	522	146	521	442	111	484	411
V/C Ratio(X)	0.85	0.88	0.28	0.89	0.62	0.17	0.81	0.47	0.53	0.79	0.38	0.22
Avail Cap(c_a), veh/h	342	1099	490	373	1171	522	186	521	442	148	484	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	37.7	17.0	44.7	30.9	14.8	49.6	32.8	33.5	50.8	33.3	31.8
Incr Delay (d2), s/veh	10.8	7.8	0.3	20.1	1.0	0.2	19.1	3.1	4.5	18.7	2.2	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	5.3	11.8	2.4	8.6	7.8	1.6	3.9	5.7	5.6	2.9	4.2	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.2	45.5	17.3	64.8	31.8	14.9	68.7	35.9	38.0	69.6	35.5	33.1
LnGrp LOS	E	D	B	E	C	B	E	D	D	E	D	C
Approach Vol, veh/h		1179			1079			600			359	
Approach Delay, s/veh		44.5			38.7			43.2			43.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	36.3	24.5	36.9	14.5	34.1	19.1	42.3
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	9.2	30.9	23.2	34.3	11.6	28.5	21.3	36.2
Max Q Clear Time (g_c+I1), s	7.4	15.9	18.4	28.1	9.3	10.8	13.0	20.9
Green Ext Time (p_c), s	0.0	1.9	0.3	3.0	0.1	1.1	0.3	4.3

Intersection Summary	
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	128	130	80	42
Demand Flow Rate, veh/h	132	134	83	43
Vehicles Circulating, veh/h	66	68	120	143
Vehicles Exiting, veh/h	120	135	78	59
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.7	3.6	3.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	132	134	83	43
Cap Entry Lane, veh/h	1290	1287	1221	1193
Entry HV Adj Factor	0.970	0.972	0.963	0.980
Flow Entry, veh/h	128	130	80	42
Cap Entry, veh/h	1252	1251	1176	1169
V/C Ratio	0.102	0.104	0.068	0.036
Control Delay, s/veh	3.7	3.7	3.6	3.4
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	110	203	211	139
Demand Flow Rate, veh/h	113	210	218	144
Vehicles Circulating, veh/h	211	135	98	218
Vehicles Exiting, veh/h	151	181	226	127
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.6	4.5	4.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	113	210	218	144
Cap Entry Lane, veh/h	1113	1202	1249	1105
Entry HV Adj Factor	0.973	0.967	0.969	0.965
Flow Entry, veh/h	110	203	211	139
Cap Entry, veh/h	1083	1163	1210	1067
V/C Ratio	0.102	0.175	0.175	0.130
Control Delay, s/veh	4.2	4.6	4.5	4.5
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	0

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	254	251	125	77
Demand Flow Rate, veh/h	261	258	129	79
Vehicles Circulating, veh/h	94	103	258	250
Vehicles Exiting, veh/h	235	284	97	111
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	4.3	4.6	4.1
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.946	0.054	0.915	0.085	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	247	14	236	22	129	79
Cap Entry Lane, veh/h	1304	1304	1293	1293	1061	1069
Entry HV Adj Factor	0.971	1.000	0.973	0.955	0.972	0.975
Flow Entry, veh/h	240	14	230	21	125	77
Cap Entry, veh/h	1265	1304	1258	1234	1031	1042
V/C Ratio	0.189	0.011	0.183	0.017	0.122	0.074
Control Delay, s/veh	4.5	2.8	4.4	3.1	4.6	4.1
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	0	0

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	36	54	254	186	46
Future Vol, veh/h	24	36	54	254	186	46
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	88	88	88	88	88	88
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	27	41	61	289	211	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	648	237	263	0	-	0
Stage 1	237	-	-	-	-	-
Stage 2	411	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	433	800	1295	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	409	800	1295	-	-	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1295	-	579	-	-
HCM Lane V/C Ratio	0.047	-	0.118	-	-
HCM Control Delay (s)	7.9	0	12	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	125	298	31	43	240
Future Vol, veh/h	62	125	298	31	43	240
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	70	140	335	35	48	270

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	701	335	0	0	370	0
Stage 1	335	-	-	-	-	-
Stage 2	366	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	403	705	-	-	1183	-
Stage 1	722	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	384	705	-	-	1183	-
Mov Cap-2 Maneuver	384	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	665	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	384	705	1183	-
HCM Lane V/C Ratio	-	-	0.181	0.199	0.041	-
HCM Control Delay (s)	-	-	16.4	11.4	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.7	0.1	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	10	82	95	5	37
Future Vol, veh/h	77	10	82	95	5	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	86	11	91	106	6	41

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	97	0	380	92
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1490	-	620	963
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	759	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1490	-	582	963
Mov Cap-2 Maneuver	-	-	-	-	582	-
Stage 1	-	-	-	-	929	-
Stage 2	-	-	-	-	713	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	9.2
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	582	963	-	-	1490	-
HCM Lane V/C Ratio	0.01	0.043	-	-	0.061	-
HCM Control Delay (s)	11.2	8.9	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.2	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	165	93	36	108	15
Future Vol, veh/h	5	165	93	36	108	15
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	80	80	80	80	80	80
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	206	116	45	135	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	422	145	154	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	277	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	586	900	1420	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	537	900	1420	-	-	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	5.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1420	-	882	-	-
HCM Lane V/C Ratio	0.082	-	0.241	-	-
HCM Control Delay (s)	7.8	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.9	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	60	19	321	303	5
Future Vol, veh/h	11	60	19	321	303	5
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	71	22	378	356	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	592	359	362	0	-	0
Stage 1	359	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	451	682	1189	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	442	682	1189	-	-	-
Mov Cap-2 Maneuver	442	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	782	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1189	-	629	-	-
HCM Lane V/C Ratio	0.019	-	0.133	-	-
HCM Control Delay (s)	8.1	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	166	37	305	87	18	347
Future Vol, veh/h	166	37	305	87	18	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	184	41	339	97	20	386

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	621	218	0	0	436	0
Stage 1	388	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	417	783	-	-	1113	-
Stage 1	652	-	-	-	-	-
Stage 2	781	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	409	783	-	-	1113	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	409	783	1113	-
HCM Lane V/C Ratio	-	-	0.451	0.053	0.018	-
HCM Control Delay (s)	-	-	20.8	9.9	8.3	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	2.3	0.2	0.1	-

Intersection	
Intersection Delay, s/veh	121.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	68	631	52	89	761	32	107	79	114	53	97	137
Future Vol, veh/h	68	631	52	89	761	32	107	79	114	53	97	137
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	73	678	56	96	818	34	115	85	123	57	104	147
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	121.6	184.5	29.5	22.5
HCM LOS	F	F	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	41%	0%	100%	80%	0%	100%	89%	0%	100%	0%
Vol Right, %	0%	59%	0%	0%	20%	0%	0%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	107	193	68	421	262	89	507	286	53	97	137
LT Vol	107	0	68	0	0	89	0	0	53	0	0
Through Vol	0	79	0	421	210	0	507	254	0	97	0
RT Vol	0	114	0	0	52	0	0	32	0	0	137
Lane Flow Rate	115	208	73	452	282	96	546	307	57	104	147
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.381	0.636	0.22	1.299	0.799	0.285	1.548	0.865	0.193	0.339	0.45
Departure Headway (Hd)	12.753	11.839	11.561	11.044	10.9	11.204	10.687	10.606	13.331	12.815	12.091
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	284	307	312	335	336	323	344	344	271	283	301
Service Time	10.453	9.539	9.261	8.744	8.6	8.904	8.387	8.306	11.031	10.515	9.791
HCM Lane V/C Ratio	0.405	0.678	0.234	1.349	0.839	0.297	1.587	0.892	0.21	0.367	0.488
HCM Control Delay	23.1	33.1	17.5	185.8	45.6	18.3	287.2	54	19.2	21.9	24.3
HCM Lane LOS	C	D	C	F	E	C	F	F	C	C	C
HCM 95th-tile Q	1.7	4.1	0.8	20.1	6.6	1.1	29.7	8	0.7	1.4	2.2

Intersection	
Intersection Delay, s/veh	336.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	658	53	43	582	45	56	175	47	85	141	161
Future Vol, veh/h	87	658	53	43	582	45	56	175	47	85	141	161
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	100	756	61	49	669	52	64	201	54	98	162	185
Number of Lanes	1	1	0	1	1	0	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	479	400.1	66.6	128.5
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	20%	100%	0%	100%	0%	22%
Vol Thru, %	63%	0%	93%	0%	93%	36%
Vol Right, %	17%	0%	7%	0%	7%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	278	87	711	43	627	387
LT Vol	56	87	0	43	0	85
Through Vol	175	0	658	0	582	141
RT Vol	47	0	53	0	45	161
Lane Flow Rate	320	100	817	49	721	445
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.85	0.274	2.111	0.135	1.863	1.118
Departure Headway (Hd)	14.812	12.104	11.514	12.232	11.643	13.204
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	249	299	327	295	317	280
Service Time	12.812	9.804	9.214	9.932	9.343	11.204
HCM Lane V/C Ratio	1.285	0.334	2.498	0.166	2.274	1.589
HCM Control Delay	66.6	19.3	535.2	16.8	426.4	128.5
HCM Lane LOS	F	C	F	C	F	F
HCM 95th-tile Q	6.8	1.1	48.5	0.5	38.9	12.9

Intersection	
Intersection Delay, s/veh	17.9
Intersection LOS	C

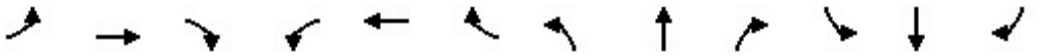
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	151	38	25	117	24	28	242	26	60	389	37
Future Vol, veh/h	33	151	38	25	117	24	28	242	26	60	389	37
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	38	174	44	29	134	28	32	278	30	69	447	43
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	16.9	14.1	20.4	18.1
HCM LOS	C	B	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	80%	0%	100%	0%	0%	100%	78%
Vol Right, %	0%	0%	100%	0%	20%	0%	0%	100%	0%	0%	22%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	28	242	26	33	189	25	117	24	60	259	167
LT Vol	28	0	0	33	0	25	0	0	60	0	0
Through Vol	0	242	0	0	151	0	117	0	0	259	130
RT Vol	0	0	26	0	38	0	0	24	0	0	37
Lane Flow Rate	32	278	30	38	217	29	134	28	69	298	192
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.075	0.61	0.06	0.09	0.477	0.071	0.315	0.059	0.153	0.619	0.389
Departure Headway (Hd)	8.406	7.898	7.186	8.546	7.905	8.94	8.433	7.723	7.979	7.471	7.313
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	425	456	496	418	454	399	425	462	448	483	490
Service Time	6.18	5.671	4.958	6.317	5.676	6.725	6.218	5.508	5.745	5.237	5.079
HCM Lane V/C Ratio	0.075	0.61	0.06	0.091	0.478	0.073	0.315	0.061	0.154	0.617	0.392
HCM Control Delay	11.9	22.4	10.4	12.2	17.7	12.4	15.1	11	12.2	21.7	14.7
HCM Lane LOS	B	C	B	B	C	B	C	B	B	C	B
HCM 95th-tile Q	0.2	4	0.2	0.3	2.5	0.2	1.3	0.2	0.5	4.1	1.8

HCM 6th Signalized Intersection Summary
9: Dinuba Boulevard & Riggin Avenue

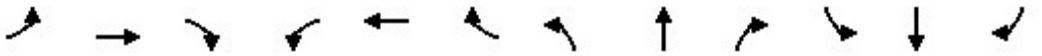
11/18/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	367	200	149	326	104	170	386	57	145	551	188
Future Volume (veh/h)	245	367	200	149	326	104	170	386	57	145	551	188
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	258	386	211	157	343	109	179	406	60	153	580	198
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	302	716	319	195	502	224	256	1256	560	276	1276	569
Arrive On Green	0.17	0.20	0.20	0.11	0.14	0.14	0.08	0.36	0.36	0.08	0.36	0.36
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	258	386	211	157	343	109	179	406	60	153	580	198
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	12.2	8.4	10.6	7.5	8.0	5.5	4.4	7.2	1.4	3.7	10.9	4.3
Cycle Q Clear(g_c), s	12.2	8.4	10.6	7.5	8.0	5.5	4.4	7.2	1.4	3.7	10.9	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	302	716	319	195	502	224	256	1256	560	276	1276	569
V/C Ratio(X)	0.85	0.54	0.66	0.81	0.68	0.49	0.70	0.32	0.11	0.55	0.45	0.35
Avail Cap(c_a), veh/h	528	1586	707	390	1311	585	383	1256	560	403	1276	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	30.7	31.6	37.4	35.1	34.0	38.8	20.0	7.4	38.0	20.8	5.7
Incr Delay (d2), s/veh	6.8	0.6	2.3	7.6	1.7	1.6	3.4	0.7	0.4	1.7	1.2	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	3.4	4.0	3.5	3.3	2.1	1.9	2.8	0.8	1.5	4.2	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	31.3	33.9	45.0	36.7	35.6	42.2	20.7	7.8	39.8	22.0	7.4
LnGrp LOS	D	C	C	D	D	D	D	C	A	D	C	A
Approach Vol, veh/h		855			609			645			931	
Approach Delay, s/veh		35.0			38.7			25.5			21.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	36.2	14.8	22.8	11.8	36.7	20.0	17.5
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	10.2	30.9	19.0	38.7	9.7	31.4	25.7	32.0
Max Q Clear Time (g_c+I1), s	5.7	9.2	9.5	12.6	6.4	12.9	14.2	10.0
Green Ext Time (p_c), s	0.2	2.5	0.3	3.0	0.2	4.0	0.5	2.3

Intersection Summary	
HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C



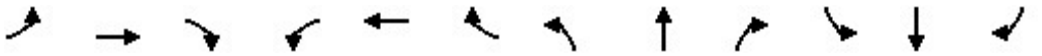
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	434	88	424	593	59	101	338	263	41	319	124
Future Volume (veh/h)	122	434	88	424	593	59	101	338	263	41	319	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	131	467	95	456	638	63	109	363	283	44	343	133
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	162	593	264	539	810	362	137	752	577	74	899	343
Arrive On Green	0.09	0.17	0.17	0.16	0.23	0.23	0.08	0.40	0.40	0.04	0.36	0.36
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1898	1458	1767	2496	951
Grp Volume(v), veh/h	131	467	95	456	638	63	109	337	309	44	241	235
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1593	1767	1763	1684
Q Serve(g_s), s	7.5	13.1	5.5	13.3	17.5	3.3	6.2	14.7	15.0	2.5	10.4	10.7
Cycle Q Clear(g_c), s	7.5	13.1	5.5	13.3	17.5	3.3	6.2	14.7	15.0	2.5	10.4	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.92	1.00		0.56
Lane Grp Cap(c), veh/h	162	593	264	539	810	362	137	698	631	74	635	607
V/C Ratio(X)	0.81	0.79	0.36	0.85	0.79	0.17	0.79	0.48	0.49	0.60	0.38	0.39
Avail Cap(c_a), veh/h	288	883	394	706	1034	461	271	698	631	134	635	607
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	41.1	37.9	42.2	37.3	31.8	46.7	23.2	23.3	48.5	24.4	24.5
Incr Delay (d2), s/veh	9.3	2.9	0.8	7.4	3.2	0.2	9.9	2.4	2.7	7.5	1.7	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	5.6	2.1	6.0	7.6	1.2	3.0	6.1	5.7	1.2	4.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	43.9	38.8	49.6	40.5	32.0	56.6	25.6	26.0	56.0	26.1	26.4
LnGrp LOS	E	D	D	D	D	C	E	C	C	E	C	C
Approach Vol, veh/h		693			1157			755			520	
Approach Delay, s/veh		45.4			43.6			30.2			28.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	47.0	22.0	23.5	14.2	43.3	15.6	29.9
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.8	40.8	21.2	25.8	15.8	32.8	16.8	* 30
Max Q Clear Time (g_c+I1), s	4.5	17.0	15.3	15.1	8.2	12.7	9.5	19.5
Green Ext Time (p_c), s	0.0	3.7	0.9	2.2	0.1	2.4	0.2	3.1

Intersection Summary	
HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	398	34	172	499	80	84	149	112	146	231	141
Future Volume (veh/h)	166	398	34	172	499	80	84	149	112	146	231	141
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	187	447	38	193	561	90	94	167	126	164	260	158
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	224	704	314	231	718	320	120	606	514	197	686	582
Arrive On Green	0.13	0.20	0.20	0.13	0.20	0.20	0.07	0.33	0.33	0.11	0.37	0.37
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	187	447	38	193	561	90	94	167	126	164	260	158
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	10.0	11.2	1.9	10.3	14.6	3.3	5.1	6.4	5.7	8.8	9.9	4.2
Cycle Q Clear(g_c), s	10.0	11.2	1.9	10.3	14.6	3.3	5.1	6.4	5.7	8.8	9.9	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	704	314	231	718	320	120	606	514	197	686	582
V/C Ratio(X)	0.84	0.63	0.12	0.84	0.78	0.28	0.78	0.28	0.25	0.83	0.38	0.27
Avail Cap(c_a), veh/h	406	1028	459	442	1101	491	267	606	514	249	686	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	35.5	31.7	41.0	36.5	16.6	44.3	24.1	23.8	42.1	22.3	8.1
Incr Delay (d2), s/veh	8.0	1.0	0.2	7.8	2.0	0.5	10.4	1.1	1.1	17.4	1.6	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	4.7	4.7	0.7	4.8	6.2	1.7	2.5	2.9	2.1	4.7	4.4	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	36.4	31.9	48.9	38.5	17.1	54.7	25.2	24.9	59.5	23.9	9.2
LnGrp LOS	D	D	C	D	D	B	D	C	C	E	C	A
Approach Vol, veh/h		672			844			387			582	
Approach Delay, s/veh		39.7			38.6			32.3			29.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	37.0	18.4	25.1	12.0	41.2	18.0	25.5
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	13.6	31.6	24.2	28.2	14.6	30.6	22.2	30.2
Max Q Clear Time (g_c+I1), s	10.8	8.4	12.3	13.2	7.1	11.9	12.0	16.6
Green Ext Time (p_c), s	0.1	1.2	0.4	2.4	0.1	1.8	0.3	3.1

Intersection Summary	
HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	4.3
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	48	159	311
Demand Flow Rate, veh/h	50	164	320
Vehicles Circulating, veh/h	144	43	19
Vehicles Exiting, veh/h	63	296	175
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.5	3.5	4.8
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	LR	LT	R	LT
Assumed Moves	LR	LT	R	LT
RT Channelized				
Lane Util	1.000	0.878	0.122	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
Entry Flow, veh/h	50	144	20	320
Cap Entry Lane, veh/h	1191	1366	1366	1353
Entry HV Adj Factor	0.960	0.971	0.950	0.972
Flow Entry, veh/h	48	140	19	311
Cap Entry, veh/h	1144	1326	1297	1315
V/C Ratio	0.042	0.105	0.015	0.236
Control Delay, s/veh	3.5	3.6	2.9	4.8
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	1

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	231	352	251	198
Demand Flow Rate, veh/h	237	362	259	204
Vehicles Circulating, veh/h	297	209	206	358
Vehicles Exiting, veh/h	265	256	328	213
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.9	6.5	5.5	6.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	237	362	259	204
Cap Entry Lane, veh/h	1019	1115	1118	958
Entry HV Adj Factor	0.973	0.972	0.970	0.970
Flow Entry, veh/h	231	352	251	198
Cap Entry, veh/h	992	1084	1085	929
V/C Ratio	0.233	0.325	0.232	0.213
Control Delay, s/veh	5.9	6.5	5.5	6.0
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Intersection	
Intersection Delay, s/veh	4.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	74	97	219	313
Demand Flow Rate, veh/h	76	100	226	322
Vehicles Circulating, veh/h	370	161	62	116
Vehicles Exiting, veh/h	68	127	384	145
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	3.9	4.3	5.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	76	100	226	322
Cap Entry Lane, veh/h	946	1171	1295	1226
Entry HV Adj Factor	0.969	0.970	0.969	0.973
Flow Entry, veh/h	74	97	219	313
Cap Entry, veh/h	917	1136	1255	1193
V/C Ratio	0.080	0.085	0.174	0.263
Control Delay, s/veh	4.7	3.9	4.3	5.4
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	383	279	317	492
Demand Flow Rate, veh/h	395	288	327	507
Vehicles Circulating, veh/h	370	414	468	223
Vehicles Exiting, veh/h	360	381	297	479
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.1	5.5	8.9	8.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.906	0.094	0.698	0.302	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	358	37	201	87	327	507
Cap Entry Lane, veh/h	1014	1014	974	974	856	1099
Entry HV Adj Factor	0.970	0.973	0.970	0.966	0.970	0.971
Flow Entry, veh/h	347	36	195	84	317	492
Cap Entry, veh/h	984	987	945	941	831	1067
V/C Ratio	0.353	0.036	0.206	0.089	0.382	0.461
Control Delay, s/veh	7.4	4.0	5.8	4.6	8.9	8.5
LOS	A	A	A	A	A	A
95th %tile Queue, veh	2	0	1	0	2	2

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	117	43	277	287	34
Future Vol, veh/h	55	117	43	277	287	34
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	61	130	48	308	319	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	742	338	357	0	-	0
Stage 1	338	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	382	702	1196	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	364	702	1196	-	-	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.2	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1196	-	541	-	-
HCM Lane V/C Ratio	0.04	-	0.353	-	-
HCM Control Delay (s)	8.1	0	15.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.6	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	38	265	42	60	318
Future Vol, veh/h	23	38	265	42	60	318
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	43	298	47	67	357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	789	298	0	0	345	0
Stage 1	298	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	358	739	-	-	1208	-
Stage 1	751	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	333	739	-	-	1208	-
Mov Cap-2 Maneuver	333	-	-	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	571	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	333	739	1208	-
HCM Lane V/C Ratio	-	-	0.078	0.058	0.056	-
HCM Control Delay (s)	-	-	16.7	10.2	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	0.2	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	85	17	60	108	29	101
Future Vol, veh/h	85	17	60	108	29	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	225
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	102	20	72	130	35	122

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	122	0	386	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	274	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1459	-	615	938
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1459	-	585	938
Mov Cap-2 Maneuver	-	-	-	-	585	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	732	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	585	938	-	-	1459	-
HCM Lane V/C Ratio	0.06	0.13	-	-	0.05	-
HCM Control Delay (s)	11.5	9.4	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	179	188	121	71	10
Future Vol, veh/h	17	179	188	121	71	10
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	81	81	81	81	81	81
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	21	221	232	149	88	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	707	94	100	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	400	960	1486	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	539	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	332	960	1486	-	-	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	539	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1486	-	825	-	-
HCM Lane V/C Ratio	0.156	-	0.293	-	-
HCM Control Delay (s)	7.9	0	11.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.6	-	1.2	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	31	43	299	324	12
Future Vol, veh/h	9	31	43	299	324	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	10	36	50	348	377	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	658	384	391	0	-	0
Stage 1	384	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	411	660	1160	-	-	-
Stage 1	685	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	393	660	1160	-	-	-
Mov Cap-2 Maneuver	393	-	-	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1160	-	572	-	-
HCM Lane V/C Ratio	0.043	-	0.081	-	-
HCM Control Delay (s)	8.2	-	11.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	92	10	323	134	20	340
Future Vol, veh/h	92	10	323	134	20	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	108	12	380	158	24	400

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	707	269	0	0	538	0
Stage 1	459	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	368	726	-	-	1019	-
Stage 1	600	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	359	726	-	-	1019	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	749	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	359	726	1019	-
HCM Lane V/C Ratio	-	-	0.301	0.016	0.023	-
HCM Control Delay (s)	-	-	19.3	10	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0	0.1	-

Intersection	
Intersection Delay, s/veh	174.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	130	913	77	113	672	45	58	81	72	43	63	85
Future Vol, veh/h	130	913	77	113	672	45	58	81	72	43	63	85
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	146	1026	87	127	755	51	65	91	81	48	71	96
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	260.5	130.8	27.1	20.4
HCM LOS	F	F	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	53%	0%	100%	80%	0%	100%	83%	0%	100%	0%
Vol Right, %	0%	47%	0%	0%	20%	0%	0%	17%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	153	130	609	381	113	448	269	43	63	85
LT Vol	58	0	130	0	0	113	0	0	43	0	0
Through Vol	0	81	0	609	304	0	448	224	0	63	0
RT Vol	0	72	0	0	77	0	0	45	0	0	85
Lane Flow Rate	65	172	146	684	428	127	503	302	48	71	96
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.221	0.543	0.409	1.819	1.123	0.361	1.363	0.808	0.166	0.233	0.296
Departure Headway (Hd)	13.641	12.812	10.531	10.017	9.872	11.16	10.648	10.527	14.075	13.562	12.843
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	265	284	345	369	373	325	347	348	257	266	282
Service Time	11.341	10.512	8.231	7.717	7.572	8.86	8.348	8.227	11.775	11.262	10.543
HCM Lane V/C Ratio	0.245	0.606	0.423	1.854	1.147	0.391	1.45	0.868	0.187	0.267	0.34
HCM Control Delay	20.2	29.7	20.3	402.3	116.1	20	209.9	45.5	19.6	20.3	20.9
HCM Lane LOS	C	D	C	F	F	C	F	E	C	C	C
HCM 95th-tile Q	0.8	3	1.9	42.6	15.5	1.6	22.9	6.9	0.6	0.9	1.2

Intersection	
Intersection Delay, s/veh	253.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	174	794	41	48	744	65	39	62	50	49	45	98
Future Vol, veh/h	174	794	41	48	744	65	39	62	50	49	45	98
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	181	827	43	50	775	68	41	65	52	51	47	102
Number of Lanes	1	1	0	1	1	0	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	283.5	311.2	18.3	19.5
HCM LOS	F	F	C	C

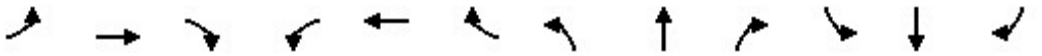
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	100%	0%	100%	0%	26%
Vol Thru, %	41%	0%	95%	0%	92%	23%
Vol Right, %	33%	0%	5%	0%	8%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	174	835	48	809	192
LT Vol	39	174	0	48	0	49
Through Vol	62	0	794	0	744	45
RT Vol	50	0	41	0	65	98
Lane Flow Rate	157	181	870	50	843	200
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.349	0.379	1.69	0.107	1.666	0.426
Departure Headway (Hd)	10.044	8.411	7.857	8.472	7.897	9.593
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	360	431	470	426	472	378
Service Time	8.044	6.111	5.557	6.172	5.597	7.593
HCM Lane V/C Ratio	0.436	0.42	1.851	0.117	1.786	0.529
HCM Control Delay	18.3	16.2	339.2	12.2	328.9	19.5
HCM Lane LOS	C	C	F	B	F	C
HCM 95th-tile Q	1.5	1.7	45.9	0.4	44.4	2.1

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	70	268	46	51	261	76	88	563	126	82	450	61
Future Vol, veh/h	70	268	46	51	261	76	88	563	126	82	450	61
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	76	291	50	55	284	83	96	612	137	89	489	66
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	88.3	54.8	320	61.7
HCM LOS	F	F	F	F

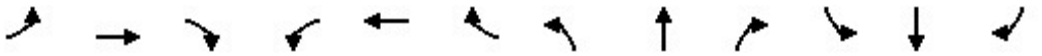
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	85%	0%	100%	0%	0%	100%	71%
Vol Right, %	0%	0%	100%	0%	15%	0%	0%	100%	0%	0%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	88	563	126	70	314	51	261	76	82	300	211
LT Vol	88	0	0	70	0	51	0	0	82	0	0
Through Vol	0	563	0	0	268	0	261	0	0	300	150
RT Vol	0	0	126	0	46	0	0	76	0	0	61
Lane Flow Rate	96	612	137	76	341	55	284	83	89	326	229
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.307	1.881	0.399	0.247	1.052	0.186	0.913	0.25	0.284	0.996	0.688
Departure Headway (Hd)	12.056	11.532	10.799	12.832	12.229	13.609	13.085	12.353	13.06	12.532	12.318
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	300	324	336	282	300	266	278	292	277	293	296
Service Time	9.756	9.232	8.499	10.532	9.929	11.309	10.785	10.053	10.76	10.232	10.018
HCM Lane V/C Ratio	0.32	1.889	0.408	0.27	1.137	0.207	1.022	0.284	0.321	1.113	0.774
HCM Control Delay	20	433.9	20.5	19.7	103.6	19.4	72.1	19.1	20.9	89.3	38.3
HCM Lane LOS	C	F	C	C	F	C	F	C	C	F	E
HCM 95th-tile Q	1.3	39.9	1.9	0.9	11.8	0.7	8.3	1	1.1	10.3	4.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	341	121	273	433	169	250	834	66	172	519	204
Future Volume (veh/h)	431	341	121	273	433	169	250	834	66	172	519	204
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	454	359	127	287	456	178	263	878	69	181	546	215
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	478	916	408	321	602	268	247	1022	456	228	1002	447
Arrive On Green	0.27	0.26	0.26	0.18	0.17	0.17	0.07	0.29	0.29	0.07	0.29	0.29
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	454	359	127	287	456	178	263	878	69	181	546	215
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	26.8	8.9	6.9	16.8	13.1	9.0	7.7	25.2	2.1	5.6	14.0	12.1
Cycle Q Clear(g_c), s	26.8	8.9	6.9	16.8	13.1	9.0	7.7	25.2	2.1	5.6	14.0	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	478	916	408	321	602	268	247	1022	456	228	1002	447
V/C Ratio(X)	0.95	0.39	0.31	0.90	0.76	0.66	1.07	0.86	0.15	0.80	0.54	0.48
Avail Cap(c_a), veh/h	478	1199	535	410	1063	474	247	1022	456	228	1002	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	32.4	31.6	42.4	41.9	26.3	49.2	35.5	10.1	48.8	32.0	31.3
Incr Delay (d2), s/veh	28.8	0.3	0.4	18.3	2.0	2.8	75.7	9.4	0.7	17.5	2.1	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	3.7	2.6	8.7	5.6	3.4	5.8	11.5	1.3	2.8	5.9	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.8	32.6	32.1	60.8	43.9	29.1	124.9	44.9	10.8	66.3	34.1	35.0
LnGrp LOS	E	C	C	E	D	C	F	D	B	E	C	D
Approach Vol, veh/h		940			921			1210			942	
Approach Delay, s/veh		49.1			46.3			60.3			40.5	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	36.3	24.6	32.9	13.0	35.7	34.0	23.4
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	7.1	31.0	24.6	36.1	7.7	30.4	28.7	32.0
Max Q Clear Time (g_c+I1), s	7.6	27.2	18.8	10.9	9.7	16.0	28.8	15.1
Green Ext Time (p_c), s	0.0	2.0	0.4	2.5	0.0	3.5	0.0	3.0

Intersection Summary	
HCM 6th Ctrl Delay	49.8
HCM 6th LOS	D



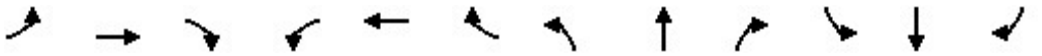
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	618	95	457	415	52	86	404	455	54	302	76
Future Volume (veh/h)	159	618	95	457	415	52	86	404	455	54	302	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	169	657	101	486	441	55	91	430	484	57	321	81
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	201	770	343	560	932	416	115	614	547	80	918	228
Arrive On Green	0.11	0.22	0.22	0.16	0.26	0.26	0.07	0.35	0.35	0.05	0.33	0.33
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1763	1572	1767	2798	696
Grp Volume(v), veh/h	169	657	101	486	441	55	91	430	484	57	201	201
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763	1730
Q Serve(g_s), s	10.2	19.4	5.8	15.0	11.4	2.9	5.5	22.8	31.5	3.5	9.4	9.6
Cycle Q Clear(g_c), s	10.2	19.4	5.8	15.0	11.4	2.9	5.5	22.8	31.5	3.5	9.4	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	201	770	343	560	932	416	115	614	547	80	579	568
V/C Ratio(X)	0.84	0.85	0.29	0.87	0.47	0.13	0.79	0.70	0.88	0.71	0.35	0.35
Avail Cap(c_a), veh/h	334	903	403	669	932	416	192	614	547	143	579	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	40.8	35.4	44.3	33.6	30.4	50.0	30.5	33.3	51.1	27.6	27.7
Incr Delay (d2), s/veh	9.4	7.0	0.5	10.2	0.4	0.1	11.3	6.5	18.5	11.0	1.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	8.7	2.2	6.9	4.7	1.1	2.7	10.1	13.9	1.7	4.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	47.8	35.9	54.5	34.0	30.6	61.3	37.1	51.8	62.1	29.3	29.5
LnGrp LOS	E	D	D	D	C	C	E	D	D	E	C	C
Approach Vol, veh/h		927			982			1005			459	
Approach Delay, s/veh		48.1			43.9			46.4			33.4	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	44.0	23.5	29.9	13.3	41.8	18.6	34.9
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	8.8	37.8	21.2	27.8	11.8	34.8	20.5	* 29
Max Q Clear Time (g_c+I1), s	5.5	33.5	17.0	21.4	7.5	11.6	12.2	13.4
Green Ext Time (p_c), s	0.0	2.1	0.7	2.3	0.1	2.0	0.3	2.4

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	831	117	256	686	167	113	334	223	132	232	112
Future Volume (veh/h)	217	831	117	256	686	167	113	334	223	132	232	112
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	228	875	123	269	722	176	119	352	235	139	244	118
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	259	984	439	299	1066	475	146	506	429	143	504	427
Arrive On Green	0.15	0.28	0.28	0.17	0.30	0.30	0.08	0.27	0.27	0.08	0.27	0.27
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	228	875	123	269	722	176	119	352	235	139	244	118
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	14.3	27.0	5.2	16.9	20.4	7.4	7.5	19.3	14.5	8.9	12.5	6.7
Cycle Q Clear(g_c), s	14.3	27.0	5.2	16.9	20.4	7.4	7.5	19.3	14.5	8.9	12.5	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	984	439	299	1066	475	146	506	429	143	504	427
V/C Ratio(X)	0.88	0.89	0.28	0.90	0.68	0.37	0.82	0.70	0.55	0.97	0.48	0.28
Avail Cap(c_a), veh/h	332	1067	476	362	1126	502	181	506	429	143	504	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	39.2	17.9	46.1	34.7	17.1	51.2	37.0	35.3	51.9	34.6	32.5
Incr Delay (d2), s/veh	19.3	8.9	0.3	21.6	1.5	0.5	20.6	7.7	5.0	65.6	3.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	12.4	2.5	9.0	8.6	3.6	4.1	9.6	5.9	6.5	6.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.8	48.1	18.2	67.7	36.2	17.6	71.8	44.7	40.2	117.5	38.0	34.1
LnGrp LOS	E	D	B	E	D	B	E	D	D	F	D	C
Approach Vol, veh/h		1226			1167			706			501	
Approach Delay, s/veh		48.6			40.7			47.8			59.1	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	36.3	25.0	37.5	14.7	36.2	22.4	40.1
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	9.2	30.9	23.2	34.3	11.6	28.5	21.3	36.2
Max Q Clear Time (g_c+I1), s	10.9	21.3	18.9	29.0	9.5	14.5	16.3	22.4
Green Ext Time (p_c), s	0.0	2.0	0.3	2.7	0.0	1.4	0.3	4.3

Intersection Summary	
HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	82	339	249
Demand Flow Rate, veh/h	84	349	257
Vehicles Circulating, veh/h	321	53	34
Vehicles Exiting, veh/h	81	238	371
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.5	4.6	4.4
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	LR	LT	R	LT
Assumed Moves	LR	LT	R	LT
RT Channelized				
Lane Util	1.000	0.920	0.080	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
Entry Flow, veh/h	84	321	28	257
Cap Entry Lane, veh/h	995	1353	1353	1333
Entry HV Adj Factor	0.976	0.971	0.964	0.969
Flow Entry, veh/h	82	312	27	249
Cap Entry, veh/h	971	1314	1305	1292
V/C Ratio	0.084	0.237	0.021	0.193
Control Delay, s/veh	4.5	4.8	2.9	4.4
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	1

Intersection	
Intersection Delay, s/veh	4.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	128	130	176	98
Demand Flow Rate, veh/h	132	134	182	101
Vehicles Circulating, veh/h	124	167	120	143
Vehicles Exiting, veh/h	120	135	136	158
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	4.2	4.3	3.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	132	134	182	101
Cap Entry Lane, veh/h	1216	1164	1221	1193
Entry HV Adj Factor	0.970	0.972	0.967	0.975
Flow Entry, veh/h	128	130	176	98
Cap Entry, veh/h	1180	1131	1181	1163
V/C Ratio	0.109	0.115	0.149	0.085
Control Delay, s/veh	4.0	4.2	4.3	3.8
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

Intersection	
Intersection Delay, s/veh	6.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	110	211	480	301
Demand Flow Rate, veh/h	113	218	495	311
Vehicles Circulating, veh/h	378	412	103	218
Vehicles Exiting, veh/h	151	186	388	412
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	6.6	6.9	6.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	113	218	495	311
Cap Entry Lane, veh/h	938	906	1242	1105
Entry HV Adj Factor	0.973	0.969	0.970	0.969
Flow Entry, veh/h	110	211	480	301
Cap Entry, veh/h	913	878	1205	1070
V/C Ratio	0.120	0.240	0.398	0.282
Control Delay, s/veh	5.1	6.6	6.9	6.1
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	1

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	259	259	125	77
Demand Flow Rate, veh/h	266	267	129	79
Vehicles Circulating, veh/h	94	103	263	259
Vehicles Exiting, veh/h	244	289	97	111
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	4.4	4.6	4.1
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.947	0.053	0.918	0.082	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	252	14	245	22	129	79
Cap Entry Lane, veh/h	1304	1304	1293	1293	1055	1060
Entry HV Adj Factor	0.971	1.000	0.973	0.955	0.972	0.975
Flow Entry, veh/h	245	14	238	21	125	77
Cap Entry, veh/h	1266	1304	1258	1234	1026	1033
V/C Ratio	0.193	0.011	0.189	0.017	0.122	0.075
Control Delay, s/veh	4.5	2.8	4.5	3.1	4.6	4.1
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	0	0

10-YEAR HORIZON CONDITIONS

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	26	20	39	15	20	10	56	272	10	15	202	51
Future Vol, veh/h	26	20	39	15	20	10	56	272	10	15	202	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	28	22	42	16	22	11	61	296	11	16	220	55

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	720	709	248	736	731	302	275	0	0	307	0	0
Stage 1	280	280	-	424	424	-	-	-	-	-	-	-
Stage 2	440	429	-	312	307	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	342	358	788	333	348	735	1282	-	-	1248	-	-
Stage 1	725	677	-	606	585	-	-	-	-	-	-	-
Stage 2	594	582	-	696	659	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	302	333	788	283	323	735	1282	-	-	1248	-	-
Mov Cap-2 Maneuver	302	333	-	283	323	-	-	-	-	-	-	-
Stage 1	684	667	-	571	552	-	-	-	-	-	-	-
Stage 2	530	549	-	628	649	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	17	1.3	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1282	-	-	434	350	1248	-	-
HCM Lane V/C Ratio	0.047	-	-	0.213	0.14	0.013	-	-
HCM Control Delay (s)	7.9	0	-	15.5	17	7.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.5	0	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	10	0	0	15	0
Future Vol, veh/h	0	10	0	0	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	11	0	0	16	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	7	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1602	-	1011	1074
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	1020	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1602	-	1011	1074
Mov Cap-2 Maneuver	-	-	-	-	1011	-
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	1020	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1011	-	-	1602	-
HCM Lane V/C Ratio	0.016	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	64	128	327	33	44	264
Future Vol, veh/h	64	128	327	33	44	264
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	70	139	355	36	48	287

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	738	355	0	0	391	0
Stage 1	355	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	384	687	-	-	1162	-
Stage 1	707	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	365	687	-	-	1162	-
Mov Cap-2 Maneuver	365	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	653	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	365	687	1162	-
HCM Lane V/C Ratio	-	-	0.191	0.203	0.041	-
HCM Control Delay (s)	-	-	17.2	11.6	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.8	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	81	11	2	91	10	5	20	11	15	20	10
Future Vol, veh/h	15	81	11	2	91	10	5	20	11	15	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	125	-	-	225	-	225	225	-	225
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	88	12	2	99	11	5	22	12	16	22	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	110	0	0	100	0	0	251	240	94	252	241	105
Stage 1	-	-	-	-	-	-	126	126	-	109	109	-
Stage 2	-	-	-	-	-	-	125	114	-	143	132	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1474	-	-	1486	-	-	700	660	960	699	659	947
Stage 1	-	-	-	-	-	-	875	790	-	894	803	-
Stage 2	-	-	-	-	-	-	877	799	-	857	785	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1474	-	-	1486	-	-	668	651	960	666	650	947
Mov Cap-2 Maneuver	-	-	-	-	-	-	668	651	-	666	650	-
Stage 1	-	-	-	-	-	-	865	781	-	883	802	-
Stage 2	-	-	-	-	-	-	842	798	-	813	776	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.1	10.1	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	668	651	960	1474	-	-	1486	-	-	666	650	947
HCM Lane V/C Ratio	0.008	0.033	0.012	0.011	-	-	0.001	-	-	0.024	0.033	0.011
HCM Control Delay (s)	10.4	10.7	8.8	7.5	0	-	7.4	-	-	10.5	10.7	8.8
HCM Lane LOS	B	B	A	A	A	-	A	-	-	B	B	A
HCM 95th %tile Q(veh)	0	0.1	0	0	-	-	0	-	-	0.1	0.1	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	63	63	0	0	0
Future Vol, veh/h	0	63	63	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	68	68	0	0	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	136	0
Stage 1	-	-	0	-
Stage 2	-	-	136	-
Critical Hdwy	4.13	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.53	-
Follow-up Hdwy	2.227	-	4.027	3.327
Pot Cap-1 Maneuver	-	-	753	-
Stage 1	-	-	-	-
Stage 2	-	-	782	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS		A

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	66	21	353	334	2
Future Vol, veh/h	11	66	21	353	334	2
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	12	72	23	384	363	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	602	364	365	0	-	0
Stage 1	364	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	445	677	1186	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	437	677	1186	-	-	-
Mov Cap-2 Maneuver	437	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1186	-	628	-	-
HCM Lane V/C Ratio	0.019	-	0.133	-	-
HCM Control Delay (s)	8.1	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	183	40	336	96	19	383
Future Vol, veh/h	183	40	336	96	19	383
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	199	43	365	104	21	416

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	667	235	0	0	469	0
Stage 1	417	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	390	764	-	-	1082	-
Stage 1	630	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	383	764	-	-	1082	-
Mov Cap-2 Maneuver	383	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	383	764	1082	-
HCM Lane V/C Ratio	-	-	0.519	0.057	0.019	-
HCM Control Delay (s)	-	-	24.1	10	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.9	0.2	0.1	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	26	57	19	34	29
Future Vol, veh/h	17	26	57	19	34	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	18	28	62	21	37	32
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.2	7.6	7.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	40%	54%
Vol Thru, %	100%	0%	0%	46%
Vol Right, %	0%	100%	60%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	19	43	63
LT Vol	0	0	17	34
Through Vol	57	0	0	29
RT Vol	0	19	26	0
Lane Flow Rate	62	21	47	68
Geometry Grp	7	7	2	5
Degree of Util (X)	0.08	0.023	0.051	0.082
Departure Headway (Hd)	4.669	3.968	3.921	4.303
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	767	901	897	829
Service Time	2.399	1.698	2.015	2.346
HCM Lane V/C Ratio	0.081	0.023	0.052	0.082
HCM Control Delay	7.8	6.8	7.2	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.2	0.3

Intersection	
Intersection Delay, s/veh	127.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	665	57	97	772	35	118	85	125	58	101	70
Future Vol, veh/h	47	665	57	97	772	35	118	85	125	58	101	70
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	51	715	61	104	830	38	127	91	134	62	109	75
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	137.9	180.3	31.6	20.7
HCM LOS	F	F	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	40%	0%	100%	80%	0%	100%	88%	0%	100%	0%
Vol Right, %	0%	60%	0%	0%	20%	0%	0%	12%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	210	47	443	279	97	515	292	58	101	70
LT Vol	118	0	47	0	0	97	0	0	58	0	0
Through Vol	0	85	0	443	222	0	515	257	0	101	0
RT Vol	0	125	0	0	57	0	0	35	0	0	70
Lane Flow Rate	127	226	51	477	300	104	553	314	62	109	75
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.412	0.678	0.15	1.351	0.837	0.304	1.539	0.867	0.213	0.355	0.232
Departure Headway (Hd)	12.633	11.716	11.396	10.879	10.731	11.02	10.503	10.417	13.462	12.945	12.221
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	287	312	317	338	339	329	349	349	268	280	296
Service Time	10.333	9.416	9.096	8.579	8.431	8.72	8.203	8.117	11.162	10.645	9.921
HCM Lane V/C Ratio	0.443	0.724	0.161	1.411	0.885	0.316	1.585	0.9	0.231	0.389	0.253
HCM Control Delay	23.9	35.9	16.1	205.9	50.2	18.5	282.7	53.6	19.8	22.6	18.6
HCM Lane LOS	C	E	C	F	F	C	F	F	C	C	C
HCM 95th-tile Q	1.9	4.6	0.5	22.1	7.4	1.3	29.7	8.1	0.8	1.5	0.9

Intersection	
Intersection Delay, s/veh	301.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	92	636	51	47	597	49	59	193	52	90	155	166
Future Vol, veh/h	92	636	51	47	597	49	59	193	52	90	155	166
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	100	691	55	51	649	53	64	210	57	98	168	180
Number of Lanes	1	1	0	1	1	0	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	407.9	382.7	70.3	132.4
HCM LOS	F	F	F	F

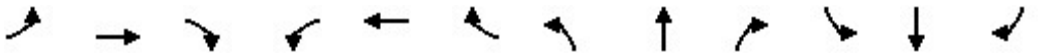
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	19%	100%	0%	100%	0%	22%
Vol Thru, %	63%	0%	93%	0%	92%	38%
Vol Right, %	17%	0%	7%	0%	8%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	304	92	687	47	646	411
LT Vol	59	92	0	47	0	90
Through Vol	193	0	636	0	597	155
RT Vol	52	0	51	0	49	166
Lane Flow Rate	330	100	747	51	702	447
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.879	0.275	1.94	0.141	1.825	1.133
Departure Headway (Hd)	14.369	12.144	11.554	12.08	11.489	12.934
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	254	298	321	299	323	286
Service Time	12.369	9.844	9.254	9.78	9.189	10.934
HCM Lane V/C Ratio	1.299	0.336	2.327	0.171	2.173	1.563
HCM Control Delay	70.3	19.4	459.9	16.8	409.3	132.4
HCM Lane LOS	F	C	F	C	F	F
HCM 95th-tile Q	7.4	1.1	42	0.5	38	13.4

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	167	42	27	129	25	31	229	29	59	330	33
Future Vol, veh/h	34	167	42	27	129	25	31	229	29	59	330	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
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	37	182	46	29	140	27	34	249	32	64	359	36
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	16.2	13.5	17	14.9
HCM LOS	C	B	C	B

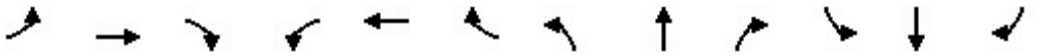
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	80%	0%	100%	0%	0%	100%	77%
Vol Right, %	0%	0%	100%	0%	20%	0%	0%	100%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	229	29	34	209	27	129	25	59	220	143
LT Vol	31	0	0	34	0	27	0	0	59	0	0
Through Vol	0	229	0	0	167	0	129	0	0	220	110
RT Vol	0	0	29	0	42	0	0	25	0	0	33
Lane Flow Rate	34	249	32	37	227	29	140	27	64	239	155
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.076	0.527	0.061	0.084	0.475	0.069	0.312	0.055	0.14	0.487	0.31
Departure Headway (Hd)	8.131	7.623	6.912	8.163	7.522	8.515	8.009	7.301	7.841	7.333	7.169
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	440	473	517	439	479	420	447	489	457	490	500
Service Time	5.893	5.385	4.673	5.919	5.279	6.283	5.777	5.069	5.598	5.09	4.926
HCM Lane V/C Ratio	0.077	0.526	0.062	0.084	0.474	0.069	0.313	0.055	0.14	0.488	0.31
HCM Control Delay	11.6	18.6	10.1	11.7	16.9	11.9	14.4	10.5	11.9	16.9	13.1
HCM Lane LOS	B	C	B	B	C	B	B	B	B	C	B
HCM 95th-tile Q	0.2	3	0.2	0.3	2.5	0.2	1.3	0.2	0.5	2.6	1.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	367	176	164	344	109	168	416	63	153	594	195
Future Volume (veh/h)	259	367	176	164	344	109	168	416	63	153	594	195
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	273	386	185	173	362	115	177	438	66	161	625	205
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	316	729	325	212	521	233	253	1219	543	284	1250	558
Arrive On Green	0.18	0.21	0.21	0.12	0.15	0.15	0.07	0.35	0.35	0.08	0.36	0.36
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	273	386	185	173	362	115	177	438	66	161	625	205
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	13.2	8.6	9.3	8.4	8.6	5.9	4.5	8.2	1.6	4.0	12.3	4.6
Cycle Q Clear(g_c), s	13.2	8.6	9.3	8.4	8.6	5.9	4.5	8.2	1.6	4.0	12.3	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	729	325	212	521	233	253	1219	543	284	1250	558
V/C Ratio(X)	0.86	0.53	0.57	0.82	0.69	0.49	0.70	0.36	0.12	0.57	0.50	0.37
Avail Cap(c_a), veh/h	517	1485	662	417	1285	573	376	1219	543	407	1250	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	31.0	31.3	37.7	35.5	34.4	39.7	21.3	7.7	38.7	22.1	5.9
Incr Delay (d2), s/veh	8.2	0.6	1.6	7.5	1.7	1.6	3.5	0.8	0.5	1.8	1.4	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	3.5	3.4	3.9	3.6	2.2	1.9	3.2	0.9	1.7	4.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	31.6	32.9	45.2	37.2	36.0	43.2	22.1	8.2	40.5	23.5	7.8
LnGrp LOS	D	C	C	D	D	D	D	C	A	D	C	A
Approach Vol, veh/h		844			650			681			991	
Approach Delay, s/veh		35.7			39.1			26.3			23.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	35.9	15.8	23.5	11.8	36.7	21.0	18.3
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	10.5	30.6	20.7	37.0	9.7	31.4	25.7	32.0
Max Q Clear Time (g_c+I1), s	6.0	10.2	10.4	11.3	6.5	14.3	15.2	10.6
Green Ext Time (p_c), s	0.2	2.7	0.3	2.9	0.2	4.2	0.6	2.4

Intersection Summary	
HCM 6th Ctrl Delay	30.4
HCM 6th LOS	C



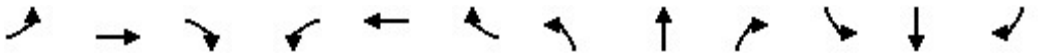
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	460	97	369	606	64	112	371	252	45	350	136
Future Volume (veh/h)	133	460	97	369	606	64	112	371	252	45	350	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	143	495	104	397	652	69	120	399	271	48	376	146
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	176	672	300	485	806	360	150	762	511	78	839	321
Arrive On Green	0.10	0.19	0.19	0.14	0.23	0.23	0.08	0.38	0.38	0.04	0.34	0.34
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	2019	1356	1767	2492	954
Grp Volume(v), veh/h	143	495	104	397	652	69	120	348	322	48	264	258
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1612	1767	1763	1684
Q Serve(g_s), s	7.9	13.1	5.7	11.1	17.3	3.5	6.6	15.2	15.4	2.6	11.6	11.9
Cycle Q Clear(g_c), s	7.9	13.1	5.7	11.1	17.3	3.5	6.6	15.2	15.4	2.6	11.6	11.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.84	1.00		0.57
Lane Grp Cap(c), veh/h	176	672	300	485	806	360	150	665	608	78	593	567
V/C Ratio(X)	0.81	0.74	0.35	0.82	0.81	0.19	0.80	0.52	0.53	0.61	0.45	0.45
Avail Cap(c_a), veh/h	323	999	446	733	1110	495	282	665	608	159	593	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	37.8	34.8	41.3	36.2	30.8	44.5	23.9	24.0	46.5	25.7	25.8
Incr Delay (d2), s/veh	8.7	1.6	0.7	4.4	3.2	0.3	9.3	2.9	3.3	7.5	2.4	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.5	2.1	4.8	7.4	1.3	3.1	6.3	5.9	1.3	4.9	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	39.4	35.5	45.8	39.4	31.1	53.9	26.9	27.3	54.0	28.1	28.4
LnGrp LOS	D	D	D	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h		742			1118			790			570	
Approach Delay, s/veh		41.3			41.1			31.2			30.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	43.6	19.8	25.1	14.6	39.6	16.1	28.9
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	8.9	37.4	21.2	28.1	15.8	30.5	18.1	* 31
Max Q Clear Time (g_c+I1), s	4.6	17.4	13.1	15.1	8.6	13.9	9.9	19.3
Green Ext Time (p_c), s	0.0	3.6	0.9	2.6	0.1	2.5	0.2	3.3

Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	427	37	180	531	58	93	127	118	78	152	107
Future Volume (veh/h)	164	427	37	180	531	58	93	127	118	78	152	107
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	178	464	40	196	577	63	101	138	128	85	165	116
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	217	709	316	236	748	334	130	655	555	110	634	537
Arrive On Green	0.12	0.20	0.20	0.13	0.21	0.21	0.07	0.35	0.35	0.06	0.34	0.34
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	178	464	40	196	577	63	101	138	128	85	165	116
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	8.8	10.8	1.9	9.7	13.8	2.2	5.0	4.7	5.1	4.2	5.8	2.9
Cycle Q Clear(g_c), s	8.8	10.8	1.9	9.7	13.8	2.2	5.0	4.7	5.1	4.2	5.8	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	709	316	236	748	334	130	655	555	110	634	537
V/C Ratio(X)	0.82	0.65	0.13	0.83	0.77	0.19	0.78	0.21	0.23	0.77	0.26	0.22
Avail Cap(c_a), veh/h	438	1110	495	477	1189	530	288	655	555	268	634	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	32.9	29.3	37.8	33.2	16.8	40.8	20.3	20.4	41.4	21.3	8.1
Incr Delay (d2), s/veh	7.5	1.0	0.2	7.3	1.7	0.3	9.7	0.7	1.0	10.9	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	4.5	0.7	4.4	5.7	1.1	2.5	2.0	1.9	2.1	2.5	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	33.9	29.5	45.1	35.0	17.1	50.5	21.0	21.4	52.3	22.3	9.1
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	C	A
Approach Vol, veh/h		682			836			367			366	
Approach Delay, s/veh		36.8			36.0			29.2			25.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	37.0	17.8	23.8	12.0	36.0	16.8	24.8
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	13.6	31.6	24.2	28.2	14.6	30.6	22.2	30.2
Max Q Clear Time (g_c+I1), s	6.2	7.1	11.7	12.8	7.0	7.8	10.8	15.8
Green Ext Time (p_c), s	0.1	1.1	0.4	2.5	0.1	1.2	0.3	3.2

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	4.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	182	280	169	62
Demand Flow Rate, veh/h	187	289	174	64
Vehicles Circulating, veh/h	140	134	163	286
Vehicles Exiting, veh/h	210	203	164	137
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	5.3	4.5	4.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	187	289	174	64
Cap Entry Lane, veh/h	1196	1204	1169	1031
Entry HV Adj Factor	0.971	0.969	0.971	0.966
Flow Entry, veh/h	182	280	169	62
Cap Entry, veh/h	1161	1167	1135	995
V/C Ratio	0.156	0.240	0.149	0.062
Control Delay, s/veh	4.5	5.3	4.5	4.2
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	0

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	79	100	151	90
Demand Flow Rate, veh/h	82	103	156	92
Vehicles Circulating, veh/h	142	88	63	122
Vehicles Exiting, veh/h	72	131	161	69
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.6	3.9	3.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	82	103	156	92
Cap Entry Lane, veh/h	1194	1261	1294	1218
Entry HV Adj Factor	0.969	0.970	0.969	0.978
Flow Entry, veh/h	79	100	151	90
Cap Entry, veh/h	1157	1224	1254	1191
V/C Ratio	0.069	0.082	0.121	0.076
Control Delay, s/veh	3.7	3.6	3.9	3.6
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	6.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	334	246	287	443
Demand Flow Rate, veh/h	344	253	296	456
Vehicles Circulating, veh/h	333	374	409	196
Vehicles Exiting, veh/h	319	331	268	431
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.2	5.0	7.7	7.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.901	0.099	0.692	0.308	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	310	34	175	78	296	456
Cap Entry Lane, veh/h	1049	1049	1010	1010	909	1130
Entry HV Adj Factor	0.972	0.971	0.969	0.974	0.970	0.971
Flow Entry, veh/h	301	33	170	76	287	443
Cap Entry, veh/h	1019	1018	979	984	882	1097
V/C Ratio	0.296	0.032	0.173	0.077	0.326	0.404
Control Delay, s/veh	6.5	3.8	5.3	4.3	7.7	7.5
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	1	2

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	61	20	126	15	20	10	45	300	10	15	308	37
Future Vol, veh/h	61	20	126	15	20	10	45	300	10	15	308	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	66	22	137	16	22	11	49	326	11	16	335	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	833	822	355	897	837	332	375	0	0	337	0	0
Stage 1	387	387	-	430	430	-	-	-	-	-	-	-
Stage 2	446	435	-	467	407	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	287	308	687	260	302	707	1178	-	-	1217	-	-
Stage 1	635	608	-	601	582	-	-	-	-	-	-	-
Stage 2	590	579	-	574	596	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	253	287	687	186	282	707	1178	-	-	1217	-	-
Mov Cap-2 Maneuver	253	287	-	186	282	-	-	-	-	-	-	-
Stage 1	603	598	-	570	552	-	-	-	-	-	-	-
Stage 2	530	549	-	435	586	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.1	21.1	1	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1178	-	-	419	272	1217	-	-
HCM Lane V/C Ratio	0.042	-	-	0.537	0.18	0.013	-	-
HCM Control Delay (s)	8.2	0	-	23.1	21.1	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	3.1	0.6	0	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	10	0	0	15	0
Future Vol, veh/h	0	10	0	0	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	11	0	0	16	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	7	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1602	-	1011	1074
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	1020	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1602	-	1011	1074
Mov Cap-2 Maneuver	-	-	-	-	1011	-
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	1020	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1011	-	-	1602	-
HCM Lane V/C Ratio	0.016	-	-	-	-
HCM Control Delay (s)	8.6	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	35	292	42	55	349
Future Vol, veh/h	23	35	292	42	55	349
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	25	38	317	46	60	379

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	816	317	0	0	363	0
Stage 1	317	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	345	721	-	-	1190	-
Stage 1	736	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	323	721	-	-	1190	-
Mov Cap-2 Maneuver	323	-	-	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	569	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	323	721	1190	-
HCM Lane V/C Ratio	-	-	0.077	0.053	0.05	-
HCM Control Delay (s)	-	-	17.1	10.3	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	0.2	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	78	19	7	111	10	32	20	12	15	20	10
Future Vol, veh/h	15	78	19	7	111	10	32	20	12	15	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	125	-	-	225	-	225	225	-	225
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	85	21	8	121	11	35	22	13	16	22	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	106	0	0	287	276	96	288	281	127
Stage 1	-	-	-	-	-	-	128	128	-	143	143	-
Stage 2	-	-	-	-	-	-	159	148	-	145	138	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1447	-	-	1479	-	-	663	630	958	662	626	921
Stage 1	-	-	-	-	-	-	873	788	-	857	777	-
Stage 2	-	-	-	-	-	-	841	773	-	855	780	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1447	-	-	1479	-	-	629	619	958	627	615	921
Mov Cap-2 Maneuver	-	-	-	-	-	-	629	619	-	627	615	-
Stage 1	-	-	-	-	-	-	863	779	-	847	773	-
Stage 2	-	-	-	-	-	-	803	769	-	810	771	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.4	10.6	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	629	619	958	1447	-	-	1479	-	-	627	615	921
HCM Lane V/C Ratio	0.055	0.035	0.014	0.011	-	-	0.005	-	-	0.026	0.035	0.012
HCM Control Delay (s)	11.1	11	8.8	7.5	0	-	7.4	-	-	10.9	11.1	9
HCM Lane LOS	B	B	A	A	A	-	A	-	-	B	B	A
HCM 95th %tile Q(veh)	0.2	0.1	0	0	-	-	0	-	-	0.1	0.1	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	119	73	0	0	0
Future Vol, veh/h	0	119	73	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	129	79	0	0	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	158	0
Stage 1	-	-	0	-
Stage 2	-	-	158	-
Critical Hdwy	4.13	-	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.53	-
Follow-up Hdwy	2.227	-	4.027	3.327
Pot Cap-1 Maneuver	-	-	732	-
Stage 1	-	-	-	-
Stage 2	-	-	765	-
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	0	-
Mov Cap-2 Maneuver	-	-	0	-
Stage 1	-	-	0	-
Stage 2	-	-	0	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS		A

Minor Lane/Major Mvmt	NBL	NBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	34	47	329	357	11
Future Vol, veh/h	6	34	47	329	357	11
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	7	37	51	358	388	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	675	394	400	0	-	0
Stage 1	394	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	401	652	1151	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	383	652	1151	-	-	-
Mov Cap-2 Maneuver	383	-	-	-	-	-
Stage 1	648	-	-	-	-	-
Stage 2	740	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1151	-	590	-	-
HCM Lane V/C Ratio	0.044	-	0.074	-	-
HCM Control Delay (s)	8.3	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	102	11	356	147	21	374
Future Vol, veh/h	102	11	356	147	21	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	111	12	387	160	23	407

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	717	274	0	0	547	0
Stage 1	467	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	362	721	-	-	1012	-
Stage 1	594	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	354	721	-	-	1012	-
Mov Cap-2 Maneuver	354	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	747	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	354	721	1012	-
HCM Lane V/C Ratio	-	-	0.313	0.017	0.023	-
HCM Control Delay (s)	-	-	19.7	10.1	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0.1	0.1	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	42	56	27	47	48
Future Vol, veh/h	34	42	56	27	47	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	37	46	61	29	51	52
Number of Lanes	1	0	1	1	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.6	7.6	8.1
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	WBLn1	SBLn1
Vol Left, %	0%	0%	45%	49%
Vol Thru, %	100%	0%	0%	51%
Vol Right, %	0%	100%	55%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	27	76	95
LT Vol	0	0	34	47
Through Vol	56	0	0	48
RT Vol	0	27	42	0
Lane Flow Rate	61	29	83	103
Geometry Grp	7	7	2	5
Degree of Util (X)	0.08	0.033	0.095	0.125
Departure Headway (Hd)	4.75	4.049	4.153	4.362
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	749	876	868	814
Service Time	2.515	1.813	2.153	2.434
HCM Lane V/C Ratio	0.081	0.033	0.096	0.127
HCM Control Delay	7.9	7	7.6	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.1	0.3	0.4

Intersection	
Intersection Delay, s/veh	155.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	52	929	84	125	689	50	64	82	79	47	65	40
Future Vol, veh/h	52	929	84	125	689	50	64	82	79	47	65	40
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	57	1010	91	136	749	54	70	89	86	51	71	43
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	242.4	106.7	24.9	18.4
HCM LOS	F	F	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	51%	0%	100%	79%	0%	100%	82%	0%	100%	0%
Vol Right, %	0%	49%	0%	0%	21%	0%	0%	18%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	161	52	619	394	125	459	280	47	65	40
LT Vol	64	0	52	0	0	125	0	0	47	0	0
Through Vol	0	82	0	619	310	0	459	230	0	65	0
RT Vol	0	79	0	0	84	0	0	50	0	0	40
Lane Flow Rate	70	175	57	673	428	136	499	304	51	71	43
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.225	0.524	0.151	1.711	1.07	0.366	1.276	0.767	0.17	0.226	0.131
Departure Headway (Hd)	12.789	11.946	10.097	9.585	9.432	10.401	9.89	9.762	13.35	12.837	12.118
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	282	305	357	384	389	348	369	374	270	281	298
Service Time	10.489	9.646	7.797	7.285	7.132	8.101	7.59	7.462	11.05	10.537	9.818
HCM Lane V/C Ratio	0.248	0.574	0.16	1.753	1.1	0.391	1.352	0.813	0.189	0.253	0.144
HCM Control Delay	19.2	27.1	14.6	353.8	97.1	19	172.3	38.3	18.8	19.2	16.6
HCM Lane LOS	C	D	B	F	F	C	F	E	C	C	C
HCM 95th-tile Q	0.8	2.8	0.5	39.5	14.2	1.6	20.9	6.2	0.6	0.8	0.4

Intersection	
Intersection Delay, s/veh	249.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	179	800	40	53	713	67	35	67	54	52	49	101
Future Vol, veh/h	179	800	40	53	713	67	35	67	54	52	49	101
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	186	833	42	55	743	70	36	70	56	54	51	105
Number of Lanes	1	1	0	1	1	0	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	294.6	292.9	18.7	20.3
HCM LOS	F	F	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	100%	0%	100%	0%	26%
Vol Thru, %	43%	0%	95%	0%	91%	24%
Vol Right, %	35%	0%	5%	0%	9%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	156	179	840	53	780	202
LT Vol	35	179	0	53	0	52
Through Vol	67	0	800	0	713	49
RT Vol	54	0	40	0	67	101
Lane Flow Rate	162	186	875	55	812	210
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.363	0.395	1.723	0.119	1.626	0.451
Departure Headway (Hd)	10.072	8.481	7.929	8.599	8.02	9.603
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	359	427	464	420	463	379
Service Time	8.072	6.181	5.629	6.299	5.72	7.603
HCM Lane V/C Ratio	0.451	0.436	1.886	0.131	1.754	0.554
HCM Control Delay	18.7	16.6	353.9	12.5	311.9	20.3
HCM Lane LOS	C	C	F	B	F	C
HCM 95th-tile Q	1.6	1.9	47.2	0.4	41.7	2.3

Intersection	
Intersection Delay, s/veh	146.7
Intersection LOS	F

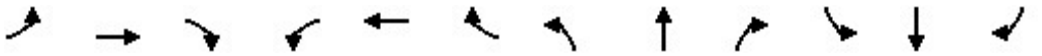
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	69	296	51	56	288	76	97	510	139	85	429	63
Future Vol, veh/h	69	296	51	56	288	76	97	510	139	85	429	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	75	322	55	61	313	83	105	554	151	92	466	68
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	132.3	72.5	264.1	59.3
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	85%	0%	100%	0%	0%	100%	69%
Vol Right, %	0%	0%	100%	0%	15%	0%	0%	100%	0%	0%	31%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	510	139	69	347	56	288	76	85	286	206
LT Vol	97	0	0	69	0	56	0	0	85	0	0
Through Vol	0	510	0	0	296	0	288	0	0	286	143
RT Vol	0	0	139	0	51	0	0	76	0	0	63
Lane Flow Rate	105	554	151	75	377	61	313	83	92	311	224
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.346	1.745	0.447	0.252	1.205	0.206	1.015	0.252	0.302	0.974	0.688
Departure Headway (Hd)	12.508	11.982	11.246	12.841	12.238	13.683	13.159	12.427	13.39	12.86	12.633
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	289	310	322	281	298	264	279	291	270	286	289
Service Time	10.208	9.682	8.946	10.541	9.938	11.383	10.859	10.127	11.09	10.56	10.333
HCM Lane V/C Ratio	0.363	1.787	0.469	0.267	1.265	0.231	1.122	0.285	0.341	1.087	0.775
HCM Control Delay	21.7	376	22.7	19.8	154.7	19.9	96.8	19.3	21.8	85	39.2
HCM Lane LOS	C	F	C	C	F	C	F	C	C	F	E
HCM 95th-tile Q	1.5	33.8	2.2	1	15.9	0.8	10.5	1	1.2	9.7	4.7

HCM 6th Signalized Intersection Summary
9: Dinuba Boulevard & Riggin Avenue

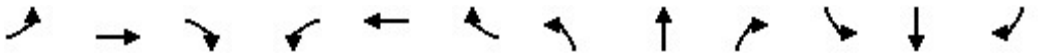
11/18/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	454	348	104	301	433	176	220	902	73	180	559	214
Future Volume (veh/h)	454	348	104	301	433	176	220	902	73	180	559	214
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	478	366	109	317	456	185	232	949	77	189	588	225
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	461	828	369	348	602	269	247	1068	476	215	1035	461
Arrive On Green	0.26	0.23	0.23	0.20	0.17	0.17	0.07	0.31	0.31	0.06	0.30	0.30
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	478	366	109	317	456	185	232	949	77	189	588	225
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	27.7	9.4	6.0	18.6	13.1	9.4	7.2	27.5	2.2	5.9	15.1	12.6
Cycle Q Clear(g_c), s	27.7	9.4	6.0	18.6	13.1	9.4	7.2	27.5	2.2	5.9	15.1	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	828	369	348	602	269	247	1068	476	215	1035	461
V/C Ratio(X)	1.04	0.44	0.30	0.91	0.76	0.69	0.94	0.89	0.16	0.88	0.57	0.49
Avail Cap(c_a), veh/h	461	1202	536	391	1063	474	247	1068	476	215	1035	461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	34.7	33.4	41.7	41.9	26.7	49.0	35.2	8.8	49.3	31.6	30.7
Incr Delay (d2), s/veh	51.6	0.4	0.4	23.4	2.0	3.1	41.1	11.0	0.7	31.6	2.3	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.0	3.9	2.3	10.0	5.6	3.6	4.4	12.7	1.4	3.3	6.4	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.9	35.0	33.8	65.1	43.9	29.8	90.1	46.2	9.6	80.9	33.9	34.4
LnGrp LOS	F	D	C	E	D	C	F	D	A	F	C	C
Approach Vol, veh/h		953			958			1258			1002	
Approach Delay, s/veh		62.9			48.2			52.1			42.9	
Approach LOS		E			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	37.7	26.2	30.2	13.0	36.7	33.0	23.4
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	6.7	32.4	23.5	36.2	7.7	31.4	27.7	32.0
Max Q Clear Time (g_c+I1), s	7.9	29.5	20.6	11.4	9.2	17.1	29.7	15.1
Green Ext Time (p_c), s	0.0	1.7	0.3	2.5	0.0	3.8	0.0	3.1

Intersection Summary	
HCM 6th Ctrl Delay	51.4
HCM 6th LOS	D



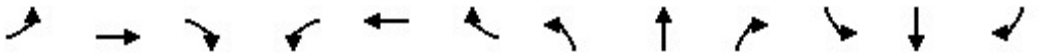
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	626	104	434	423	56	94	445	389	58	332	84
Future Volume (veh/h)	175	626	104	434	423	56	94	445	389	58	332	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	186	666	111	462	450	60	100	473	414	62	353	89
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	219	785	350	538	889	397	126	621	543	83	907	226
Arrive On Green	0.12	0.22	0.22	0.16	0.25	0.25	0.07	0.35	0.35	0.05	0.32	0.32
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1781	1557	1767	2797	696
Grp Volume(v), veh/h	186	666	111	462	450	60	100	468	419	62	221	221
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1575	1767	1763	1730
Q Serve(g_s), s	11.2	19.6	6.4	14.2	11.9	2.5	6.0	25.5	25.6	3.8	10.5	10.7
Cycle Q Clear(g_c), s	11.2	19.6	6.4	14.2	11.9	2.5	6.0	25.5	25.6	3.8	10.5	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.40
Lane Grp Cap(c), veh/h	219	785	350	538	889	397	126	614	549	83	571	561
V/C Ratio(X)	0.85	0.85	0.32	0.86	0.51	0.15	0.79	0.76	0.76	0.75	0.39	0.39
Avail Cap(c_a), veh/h	352	936	418	670	923	412	212	614	549	127	571	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	40.4	35.2	44.5	34.8	19.4	49.6	31.3	31.3	51.1	28.3	28.4
Incr Delay (d2), s/veh	10.6	6.4	0.5	9.1	0.4	0.2	10.7	8.7	9.7	12.7	2.0	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	5.3	8.7	2.4	6.5	4.9	1.2	2.9	11.6	10.5	1.9	4.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.1	46.8	35.8	53.7	35.2	19.6	60.3	40.0	41.0	63.7	30.3	30.5
LnGrp LOS	E	D	D	D	D	B	E	D	D	E	C	C
Approach Vol, veh/h		963			972			987			504	
Approach Delay, s/veh		47.5			43.0			42.5			34.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	44.0	22.8	30.4	13.9	41.4	19.6	33.6
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.8	37.8	21.2	28.8	13.0	32.6	21.6	* 28
Max Q Clear Time (g_c+I1), s	5.8	27.6	16.2	21.6	8.0	12.7	13.2	13.9
Green Ext Time (p_c), s	0.0	3.7	0.8	2.5	0.1	2.2	0.3	2.5

Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	186	891	129	273	737	91	125	254	232	90	188	91
Future Volume (veh/h)	186	891	129	273	737	91	125	254	232	90	188	91
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	196	938	136	287	776	96	132	267	244	95	198	96
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	224	1003	447	314	1182	527	158	496	421	143	481	407
Arrive On Green	0.13	0.28	0.28	0.18	0.34	0.34	0.09	0.27	0.27	0.08	0.26	0.26
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	196	938	136	287	776	96	132	267	244	95	198	96
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	12.9	30.6	5.9	18.8	22.2	3.8	8.7	14.5	15.9	6.2	10.5	5.7
Cycle Q Clear(g_c), s	12.9	30.6	5.9	18.8	22.2	3.8	8.7	14.5	15.9	6.2	10.5	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	1003	447	314	1182	527	158	496	421	143	481	407
V/C Ratio(X)	0.87	0.94	0.30	0.92	0.66	0.18	0.84	0.54	0.58	0.67	0.41	0.24
Avail Cap(c_a), veh/h	263	1021	455	332	1182	527	159	496	421	144	481	407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	41.2	18.3	47.7	33.5	15.0	52.9	37.0	37.5	52.7	36.3	34.5
Incr Delay (d2), s/veh	23.7	14.9	0.4	28.1	1.3	0.2	30.5	4.1	5.7	11.0	2.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	14.8	2.9	10.5	9.3	1.9	5.1	7.0	6.6	3.1	5.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.3	56.1	18.6	75.8	34.8	15.2	83.4	41.1	43.2	63.7	38.9	35.9
LnGrp LOS	E	E	B	E	C	B	F	D	D	E	D	D
Approach Vol, veh/h		1270			1159			643			389	
Approach Delay, s/veh		54.9			43.3			50.6			44.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	37.0	26.8	39.4	15.9	36.0	20.8	45.4
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	9.6	31.6	22.2	34.2	10.6	30.6	17.6	38.8
Max Q Clear Time (g_c+I1), s	8.2	17.9	20.8	32.6	10.7	12.5	14.9	24.2
Green Ext Time (p_c), s	0.0	1.9	0.1	1.0	0.0	1.2	0.1	4.5

Intersection Summary	
HCM 6th Ctrl Delay	49.0
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	3.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	140	143	87	45
Demand Flow Rate, veh/h	144	147	90	46
Vehicles Circulating, veh/h	72	75	130	157
Vehicles Exiting, veh/h	131	145	86	65
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.8	3.8	3.7	3.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	144	147	90	46
Cap Entry Lane, veh/h	1282	1278	1209	1176
Entry HV Adj Factor	0.971	0.973	0.965	0.980
Flow Entry, veh/h	140	143	87	45
Cap Entry, veh/h	1245	1243	1166	1152
V/C Ratio	0.112	0.115	0.074	0.039
Control Delay, s/veh	3.8	3.8	3.7	3.4
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	111	205	212	140
Demand Flow Rate, veh/h	114	211	219	145
Vehicles Circulating, veh/h	211	136	100	218
Vehicles Exiting, veh/h	152	183	225	129
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.6	4.5	4.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	114	211	219	145
Cap Entry Lane, veh/h	1113	1201	1246	1105
Entry HV Adj Factor	0.973	0.972	0.969	0.966
Flow Entry, veh/h	111	205	212	140
Cap Entry, veh/h	1083	1168	1208	1067
V/C Ratio	0.102	0.176	0.176	0.131
Control Delay, s/veh	4.2	4.6	4.5	4.5
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	0

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	258	255	131	82
Demand Flow Rate, veh/h	265	263	135	84
Vehicles Circulating, veh/h	98	108	263	254
Vehicles Exiting, veh/h	240	290	100	117
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	4.3	4.7	4.2
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.947	0.053	0.913	0.087	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	251	14	240	23	135	84
Cap Entry Lane, veh/h	1299	1299	1287	1287	1055	1065
Entry HV Adj Factor	0.971	1.000	0.973	0.957	0.972	0.976
Flow Entry, veh/h	244	14	233	22	131	82
Cap Entry, veh/h	1261	1299	1252	1231	1026	1039
V/C Ratio	0.193	0.011	0.186	0.018	0.128	0.079
Control Delay, s/veh	4.5	2.9	4.5	3.1	4.7	4.2
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	0	0

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	21	39	15	23	13	56	275	10	16	203	51
Future Vol, veh/h	26	21	39	15	23	13	56	275	10	16	203	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	28	23	42	16	25	14	61	299	11	17	221	55

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	729	715	249	742	737	305	276	0	0	310	0	0
Stage 1	283	283	-	427	427	-	-	-	-	-	-	-
Stage 2	446	432	-	315	310	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	337	355	787	330	345	732	1281	-	-	1245	-	-
Stage 1	722	675	-	604	584	-	-	-	-	-	-	-
Stage 2	590	581	-	694	657	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	294	329	787	279	320	732	1281	-	-	1245	-	-
Mov Cap-2 Maneuver	294	329	-	279	320	-	-	-	-	-	-	-
Stage 1	680	664	-	569	550	-	-	-	-	-	-	-
Stage 2	520	547	-	624	646	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.8	17	1.3	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1281	-	-	426	356	1245	-	-
HCM Lane V/C Ratio	0.048	-	-	0.219	0.156	0.014	-	-
HCM Control Delay (s)	8	0	-	15.8	17	7.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.5	0	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	10	15	6	15	5
Future Vol, veh/h	2	10	15	6	15	5
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, %	3	3	3	3	3	3
Mvmt Flow	2	11	16	7	16	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	13	0	47	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1599	-	960	1071
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	981	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1599	-	950	1071
Mov Cap-2 Maneuver	-	-	-	-	950	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	971	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.2	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	978	-	-	1599	-
HCM Lane V/C Ratio	0.022	-	-	0.01	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	131	327	34	45	264
Future Vol, veh/h	67	131	327	34	45	264
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	73	142	355	37	49	287

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	740	355	0	0	392	0
Stage 1	355	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	383	687	-	-	1161	-
Stage 1	707	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	364	687	-	-	1161	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	364	687	1161	-
HCM Lane V/C Ratio	-	-	0.2	0.207	0.042	-
HCM Control Delay (s)	-	-	17.3	11.6	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.8	0.1	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	83	11	67	97	10	5	25	33	15	35	10
Future Vol, veh/h	15	83	11	67	97	10	5	25	33	15	35	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	125	-	-	225	-	225	225	-	225
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	90	12	73	105	11	5	27	36	16	38	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	116	0	0	102	0	0	409	390	96	417	391	111
Stage 1	-	-	-	-	-	-	128	128	-	257	257	-
Stage 2	-	-	-	-	-	-	281	262	-	160	134	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1466	-	-	1484	-	-	551	544	958	544	543	940
Stage 1	-	-	-	-	-	-	873	788	-	745	693	-
Stage 2	-	-	-	-	-	-	724	690	-	840	784	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1466	-	-	1484	-	-	490	511	958	479	510	940
Mov Cap-2 Maneuver	-	-	-	-	-	-	490	511	-	479	510	-
Stage 1	-	-	-	-	-	-	863	779	-	736	659	-
Stage 2	-	-	-	-	-	-	641	656	-	771	775	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	2.9	10.6	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	490	511	958	1466	-	-	1484	-	-	479	510	940
HCM Lane V/C Ratio	0.011	0.053	0.037	0.011	-	-	0.049	-	-	0.034	0.075	0.012
HCM Control Delay (s)	12.4	12.4	8.9	7.5	0	-	7.6	-	-	12.8	12.6	8.9
HCM Lane LOS	B	B	A	A	A	-	A	-	-	B	B	A
HCM 95th %tile Q(veh)	0	0.2	0.1	0	-	-	0.2	-	-	0.1	0.2	0

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	171	99	36	108	15
Future Vol, veh/h	5	171	99	36	108	15
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, %	3	3	3	3	3	3
Mvmt Flow	5	186	108	39	117	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	380	125	133	0	-	0
Stage 1	125	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	620	923	1446	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	573	923	1446	-	-	-
Mov Cap-2 Maneuver	573	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	5.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1446	-	907	-	-
HCM Lane V/C Ratio	0.074	-	0.211	-	-
HCM Control Delay (s)	7.7	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	66	21	353	334	6
Future Vol, veh/h	12	66	21	353	334	6
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	72	23	384	363	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	605	367	370	0	-	0
Stage 1	367	-	-	-	-	-
Stage 2	238	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	443	675	1180	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	435	675	1180	-	-	-
Mov Cap-2 Maneuver	435	-	-	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1180	-	622	-	-
HCM Lane V/C Ratio	0.019	-	0.136	-	-
HCM Control Delay (s)	8.1	-	11.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	183	40	336	96	19	383
Future Vol, veh/h	183	40	336	96	19	383
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	199	43	365	104	21	416

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	667	235	0	0	469	0
Stage 1	417	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	390	764	-	-	1082	-
Stage 1	630	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	383	764	-	-	1082	-
Mov Cap-2 Maneuver	383	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.6	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	383	764	1082	-
HCM Lane V/C Ratio	-	-	0.519	0.057	0.019	-
HCM Control Delay (s)	-	-	24.1	10	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.9	0.2	0.1	-

Intersection	
Intersection Delay, s/veh	158.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	678	57	97	812	35	118	87	125	58	107	144
Future Vol, veh/h	72	678	57	97	812	35	118	87	125	58	107	144
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	77	729	61	104	873	38	127	94	134	62	115	155
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	167.3	237.6	36.7	25.3
HCM LOS	F	F	E	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	41%	0%	100%	80%	0%	100%	89%	0%	100%	0%
Vol Right, %	0%	59%	0%	0%	20%	0%	0%	11%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	212	72	452	283	97	541	306	58	107	144
LT Vol	118	0	72	0	0	97	0	0	58	0	0
Through Vol	0	87	0	452	226	0	541	271	0	107	0
RT Vol	0	125	0	0	57	0	0	35	0	0	144
Lane Flow Rate	127	228	77	486	304	104	582	329	62	115	155
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.434	0.724	0.244	1.464	0.904	0.324	1.729	0.969	0.219	0.388	0.492
Departure Headway (Hd)	13.522	12.609	12.234	11.716	11.57	11.852	11.333	11.25	14.131	13.614	12.891
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	268	290	296	316	316	306	326	325	256	266	282
Service Time	11.222	10.309	9.934	9.416	9.27	9.552	9.033	8.95	11.831	11.314	10.591
HCM Lane V/C Ratio	0.474	0.786	0.26	1.538	0.962	0.34	1.785	1.012	0.242	0.432	0.55
HCM Control Delay	26.2	42.5	18.8	255.3	64.6	20.1	367.1	77.4	20.7	24.7	27.5
HCM Lane LOS	D	E	C	F	F	C	F	F	C	C	D
HCM 95th-tile Q	2.1	5.2	0.9	24.7	8.6	1.4	34.9	10.2	0.8	1.8	2.5

Intersection	
Intersection Delay, s/veh	348.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	92	703	57	47	620	49	61	193	52	90	155	166
Future Vol, veh/h	92	703	57	47	620	49	61	193	52	90	155	166
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	100	764	62	51	674	53	66	210	57	98	168	180
Number of Lanes	1	1	0	1	1	0	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	495.8	412.7	73.8	135.4
HCM LOS	F	F	F	F

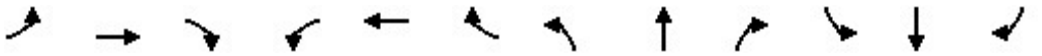
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	20%	100%	0%	100%	0%	22%
Vol Thru, %	63%	0%	93%	0%	93%	38%
Vol Right, %	17%	0%	7%	0%	7%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	306	92	760	47	669	411
LT Vol	61	92	0	47	0	90
Through Vol	193	0	703	0	620	155
RT Vol	52	0	57	0	49	166
Lane Flow Rate	333	100	826	51	727	447
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.885	0.276	2.151	0.141	1.894	1.135
Departure Headway (Hd)	15.058	12.298	11.707	12.438	11.847	13.532
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	243	294	322	290	313	273
Service Time	13.058	9.998	9.407	10.138	9.547	11.532
HCM Lane V/C Ratio	1.37	0.34	2.565	0.176	2.323	1.637
HCM Control Delay	73.8	19.6	553.4	17.2	440.5	135.4
HCM Lane LOS	F	C	F	C	F	F
HCM 95th-tile Q	7.4	1.1	49.3	0.5	39.4	13.1

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	167	42	27	129	27	31	255	29	65	407	40
Future Vol, veh/h	36	167	42	27	129	27	31	255	29	65	407	40
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	39	182	46	29	140	29	34	277	32	71	442	43
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	17.7	14.4	20.7	18.3
HCM LOS	C	B	C	C

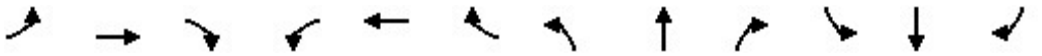
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	80%	0%	100%	0%	0%	100%	77%
Vol Right, %	0%	0%	100%	0%	20%	0%	0%	100%	0%	0%	23%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	255	29	36	209	27	129	27	65	271	176
LT Vol	31	0	0	36	0	27	0	0	65	0	0
Through Vol	0	255	0	0	167	0	129	0	0	271	136
RT Vol	0	0	29	0	42	0	0	27	0	0	40
Lane Flow Rate	34	277	32	39	227	29	140	29	71	295	191
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.08	0.616	0.064	0.094	0.502	0.073	0.331	0.064	0.159	0.62	0.393
Departure Headway (Hd)	8.507	7.998	7.285	8.603	7.962	9.014	8.507	7.797	8.082	7.574	7.412
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	420	449	490	416	452	396	421	457	442	475	483
Service Time	6.286	5.777	5.063	6.379	5.738	6.807	6.3	5.589	5.856	5.347	5.185
HCM Lane V/C Ratio	0.081	0.617	0.065	0.094	0.502	0.073	0.333	0.063	0.161	0.621	0.395
HCM Control Delay	12	22.9	10.6	12.3	18.6	12.5	15.5	11.1	12.4	22	14.9
HCM Lane LOS	B	C	B	B	C	B	C	B	B	C	B
HCM 95th-tile Q	0.3	4	0.2	0.3	2.8	0.2	1.4	0.2	0.6	4.1	1.8



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	398	213	164	355	109	181	416	63	153	594	195
Future Volume (veh/h)	259	398	213	164	355	109	181	416	63	153	594	195
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	273	419	224	173	374	115	191	438	66	161	625	205
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	316	741	330	212	533	238	266	1204	537	297	1236	551
Arrive On Green	0.18	0.21	0.21	0.12	0.15	0.15	0.08	0.34	0.34	0.09	0.35	0.35
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	273	419	224	173	374	115	191	438	66	161	625	205
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	13.3	9.5	11.7	8.5	9.0	6.0	4.9	8.3	1.6	4.0	12.5	4.7
Cycle Q Clear(g_c), s	13.3	9.5	11.7	8.5	9.0	6.0	4.9	8.3	1.6	4.0	12.5	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	316	741	330	212	533	238	266	1204	537	297	1236	551
V/C Ratio(X)	0.86	0.57	0.68	0.82	0.70	0.48	0.72	0.36	0.12	0.54	0.51	0.37
Avail Cap(c_a), veh/h	511	1468	655	412	1269	566	371	1204	537	402	1236	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	31.5	32.3	38.2	35.8	34.5	40.0	21.8	8.1	38.9	22.6	6.2
Incr Delay (d2), s/veh	8.6	0.7	2.4	7.6	1.7	1.5	4.0	0.9	0.5	1.5	1.5	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	3.9	4.4	3.9	3.8	2.3	2.1	3.3	0.9	1.7	5.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.1	32.1	34.8	45.7	37.5	36.1	44.0	22.7	8.5	40.4	24.1	8.1
LnGrp LOS	D	C	C	D	D	D	D	C	A	D	C	A
Approach Vol, veh/h		916			662			695			991	
Approach Delay, s/veh		36.3			39.4			27.2			23.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	35.9	15.9	24.0	12.3	36.7	21.2	18.7
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	10.5	30.6	20.7	37.0	9.7	31.4	25.7	32.0
Max Q Clear Time (g_c+I1), s	6.0	10.3	10.5	13.7	6.9	14.5	15.3	11.0
Green Ext Time (p_c), s	0.2	2.7	0.3	3.2	0.2	4.2	0.6	2.5

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C



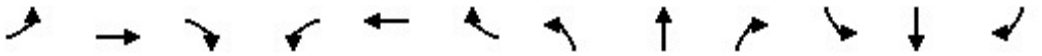
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	472	97	446	643	64	112	371	277	45	350	136
Future Volume (veh/h)	133	472	97	446	643	64	112	371	277	45	350	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	143	508	104	480	691	69	120	399	298	48	376	146
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	175	645	288	563	861	384	150	712	526	77	816	313
Arrive On Green	0.10	0.18	0.18	0.16	0.24	0.24	0.08	0.37	0.37	0.04	0.33	0.33
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1932	1429	1767	2492	954
Grp Volume(v), veh/h	143	508	104	480	691	69	120	364	333	48	264	258
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1598	1767	1763	1684
Q Serve(g_s), s	8.1	14.0	5.9	13.8	18.7	3.5	6.8	16.7	16.9	2.7	12.0	12.3
Cycle Q Clear(g_c), s	8.1	14.0	5.9	13.8	18.7	3.5	6.8	16.7	16.9	2.7	12.0	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.89	1.00		0.57
Lane Grp Cap(c), veh/h	175	645	288	563	861	384	150	649	589	77	577	551
V/C Ratio(X)	0.82	0.79	0.36	0.85	0.80	0.18	0.80	0.56	0.57	0.62	0.46	0.47
Avail Cap(c_a), veh/h	315	976	435	716	1084	483	275	649	589	155	577	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	39.6	36.3	41.2	36.1	30.3	45.6	25.5	25.6	47.7	27.0	27.1
Incr Delay (d2), s/veh	8.9	2.5	0.8	7.9	3.5	0.2	9.5	3.5	3.9	7.8	2.6	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.9	2.2	6.2	8.1	1.3	3.2	7.0	6.5	1.3	5.1	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	42.1	37.0	49.2	39.6	30.5	55.1	29.0	29.5	55.5	29.6	29.9
LnGrp LOS	D	D	D	D	D	C	E	C	C	E	C	C
Approach Vol, veh/h		755			1240			817			570	
Approach Delay, s/veh		43.6			42.8			33.0			31.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	43.6	22.5	24.8	14.8	39.4	16.3	31.0
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	8.9	37.4	21.2	28.1	15.8	30.5	18.1	* 31
Max Q Clear Time (g_c+I1), s	4.7	18.9	15.8	16.0	8.8	14.3	10.1	20.7
Green Ext Time (p_c), s	0.0	3.7	0.9	2.6	0.1	2.5	0.2	3.3

Intersection Summary	
HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	427	37	180	531	83	93	157	118	152	241	147
Future Volume (veh/h)	177	427	37	180	531	83	93	157	118	152	241	147
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	192	464	40	196	577	90	101	171	128	165	262	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	228	722	322	233	732	326	129	599	508	197	671	569
Arrive On Green	0.13	0.20	0.20	0.13	0.21	0.21	0.07	0.32	0.32	0.11	0.36	0.36
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	192	464	40	196	577	90	101	171	128	165	262	160
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	10.4	11.8	2.0	10.6	15.2	3.4	5.5	6.7	5.9	9.0	10.3	4.4
Cycle Q Clear(g_c), s	10.4	11.8	2.0	10.6	15.2	3.4	5.5	6.7	5.9	9.0	10.3	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	722	322	233	732	326	129	599	508	197	671	569
V/C Ratio(X)	0.84	0.64	0.12	0.84	0.79	0.28	0.79	0.29	0.25	0.84	0.39	0.28
Avail Cap(c_a), veh/h	401	1015	453	437	1087	485	264	599	508	245	671	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	35.6	31.8	41.5	36.8	16.7	44.6	24.7	24.4	42.6	23.2	8.5
Incr Delay (d2), s/veh	8.1	1.0	0.2	7.9	2.4	0.5	10.0	1.2	1.2	18.1	1.7	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	4.8	4.9	0.8	4.9	6.4	1.7	2.7	3.0	2.2	4.8	4.6	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	36.6	31.9	49.4	39.1	17.1	54.7	25.9	25.6	60.8	24.9	9.7
LnGrp LOS	D	D	C	D	D	B	D	C	C	E	C	A
Approach Vol, veh/h		696			863			400			587	
Approach Delay, s/veh		39.9			39.2			33.1			30.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	37.0	18.7	25.9	12.5	40.8	18.5	26.1
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	13.6	31.6	24.2	28.2	14.6	30.6	22.2	30.2
Max Q Clear Time (g_c+I1), s	11.0	8.7	12.6	13.8	7.5	12.3	12.4	17.2
Green Ext Time (p_c), s	0.1	1.3	0.4	2.5	0.1	1.8	0.3	3.1

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	48	159	303
Demand Flow Rate, veh/h	50	164	312
Vehicles Circulating, veh/h	142	44	19
Vehicles Exiting, veh/h	66	287	173
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.5	3.5	4.7
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	LR	LT	R	LT
Assumed Moves	LR	LT	R	LT
RT Channelized				
Lane Util	1.000	0.866	0.134	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
Entry Flow, veh/h	50	142	22	312
Cap Entry Lane, veh/h	1194	1364	1364	1353
Entry HV Adj Factor	0.960	0.971	0.955	0.972
Flow Entry, veh/h	48	138	21	303
Cap Entry, veh/h	1146	1325	1302	1315
V/C Ratio	0.042	0.104	0.016	0.231
Control Delay, s/veh	3.5	3.6	2.9	4.7
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	1

Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	182	280	199	149
Demand Flow Rate, veh/h	187	289	205	154
Vehicles Circulating, veh/h	230	165	163	286
Vehicles Exiting, veh/h	210	203	254	168
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.0	5.5	4.7	5.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	187	289	205	154
Cap Entry Lane, veh/h	1091	1166	1169	1031
Entry HV Adj Factor	0.971	0.969	0.971	0.969
Flow Entry, veh/h	182	280	199	149
Cap Entry, veh/h	1059	1130	1135	999
V/C Ratio	0.171	0.248	0.175	0.149
Control Delay, s/veh	5.0	5.5	4.7	5.0
LOS	A	A	A	A
95th %tile Queue, veh	1	1	1	1

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	79	103	225	317
Demand Flow Rate, veh/h	82	106	232	327
Vehicles Circulating, veh/h	377	164	70	122
Vehicles Exiting, veh/h	72	138	389	148
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.8	3.9	4.4	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	82	106	232	327
Cap Entry Lane, veh/h	939	1167	1285	1218
Entry HV Adj Factor	0.969	0.971	0.969	0.970
Flow Entry, veh/h	79	103	225	317
Cap Entry, veh/h	911	1133	1246	1182
V/C Ratio	0.087	0.091	0.181	0.268
Control Delay, s/veh	4.8	3.9	4.4	5.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	341	248	287	443
Demand Flow Rate, veh/h	351	255	296	456
Vehicles Circulating, veh/h	333	374	416	199
Vehicles Exiting, veh/h	322	338	268	431
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	5.0	7.7	7.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.903	0.097	0.694	0.306	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	317	34	177	78	296	456
Cap Entry Lane, veh/h	1049	1049	1010	1010	903	1126
Entry HV Adj Factor	0.972	0.971	0.969	0.974	0.970	0.971
Flow Entry, veh/h	308	33	172	76	287	443
Cap Entry, veh/h	1019	1018	979	984	875	1094
V/C Ratio	0.302	0.032	0.175	0.077	0.328	0.405
Control Delay, s/veh	6.6	3.8	5.3	4.3	7.7	7.5
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	1	2

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	61	23	126	15	22	12	45	302	10	18	311	37
Future Vol, veh/h	61	23	126	15	22	12	45	302	10	18	311	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	66	25	137	16	24	13	49	328	11	20	338	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	848	835	358	911	850	334	378	0	0	339	0	0
Stage 1	398	398	-	432	432	-	-	-	-	-	-	-
Stage 2	450	437	-	479	418	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	280	302	684	254	296	706	1175	-	-	1215	-	-
Stage 1	626	601	-	600	581	-	-	-	-	-	-	-
Stage 2	587	578	-	566	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	243	281	684	179	275	706	1175	-	-	1215	-	-
Mov Cap-2 Maneuver	243	281	-	179	275	-	-	-	-	-	-	-
Stage 1	594	588	-	569	551	-	-	-	-	-	-	-
Stage 2	523	549	-	424	577	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.7	21.5	1	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1175	-	-	406	271	1215	-	-
HCM Lane V/C Ratio	0.042	-	-	0.562	0.197	0.016	-	-
HCM Control Delay (s)	8.2	0	-	24.7	21.5	8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	3.3	0.7	0	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	7	10	10	4	15	17
Future Vol, veh/h	7	10	10	4	15	17
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, %	3	3	3	3	3	3
Mvmt Flow	8	11	11	4	16	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	19	0	40	14
Stage 1	-	-	-	-	14	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1591	-	969	1063
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	994	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1591	-	962	1063
Mov Cap-2 Maneuver	-	-	-	-	962	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	987	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.2	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1013	-	-	1591	-
HCM Lane V/C Ratio	0.034	-	-	0.007	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	25	37	292	46	58	349
Future Vol, veh/h	25	37	292	46	58	349
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	200	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	27	40	317	50	63	379

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	822	317	0	0	367	0
Stage 1	317	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	342	721	-	-	1186	-
Stage 1	736	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	319	721	-	-	1186	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	319	721	1186	-
HCM Lane V/C Ratio	-	-	0.085	0.056	0.053	-
HCM Control Delay (s)	-	-	17.3	10.3	8.2	0
HCM Lane LOS	-	-	C	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	0.2	-

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	85	19	50	115	10	32	37	85	15	30	10
Future Vol, veh/h	15	85	19	50	115	10	32	37	85	15	30	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	125	-	-	225	-	225	225	-	225
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	92	21	54	125	11	35	40	92	16	33	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	136	0	0	113	0	0	396	379	103	440	384	131
Stage 1	-	-	-	-	-	-	135	135	-	239	239	-
Stage 2	-	-	-	-	-	-	261	244	-	201	145	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1442	-	-	1470	-	-	562	552	949	526	548	916
Stage 1	-	-	-	-	-	-	866	783	-	762	706	-
Stage 2	-	-	-	-	-	-	742	702	-	799	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1470	-	-	510	525	949	431	521	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	510	525	-	431	521	-
Stage 1	-	-	-	-	-	-	856	774	-	753	680	-
Stage 2	-	-	-	-	-	-	672	676	-	676	766	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	2.2	10.7	12.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	510	525	949	1442	-	-	1470	-	-	431	521	916
HCM Lane V/C Ratio	0.068	0.077	0.097	0.011	-	-	0.037	-	-	0.038	0.063	0.012
HCM Control Delay (s)	12.6	12.4	9.2	7.5	0	-	7.5	-	-	13.7	12.4	9
HCM Lane LOS	B	B	A	A	A	-	A	-	-	B	B	A
HCM 95th %tile Q(veh)	0.2	0.2	0.3	0	-	-	0.1	-	-	0.1	0.2	0

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	190	194	121	71	10
Future Vol, veh/h	17	190	194	121	71	10
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, %	3	3	3	3	3	3
Mvmt Flow	18	207	211	132	77	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	637	83	88	0	-	0
Stage 1	83	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	440	974	1501	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	373	974	1501	-	-	-
Mov Cap-2 Maneuver	373	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	574	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1501	-	860	-	-
HCM Lane V/C Ratio	0.14	-	0.262	-	-
HCM Control Delay (s)	7.8	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.5	-	1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	34	47	329	357	13
Future Vol, veh/h	10	34	47	329	357	13
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	-	175	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	37	51	358	388	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	676	395	402	0	-	0
Stage 1	395	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Critical Hdwy	6.645	6.245	4.145	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3285	2.2285	-	-	-
Pot Cap-1 Maneuver	401	651	1149	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	383	651	1149	-	-	-
Mov Cap-2 Maneuver	383	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	740	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1149	-	562	-	-
HCM Lane V/C Ratio	0.044	-	0.085	-	-
HCM Control Delay (s)	8.3	-	12	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	102	11	356	147	21	374
Future Vol, veh/h	102	11	356	147	21	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	111	12	387	160	23	407

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	717	274	0	0	547	0
Stage 1	467	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.86	6.96	-	-	4.16	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	-	-	2.23	-
Pot Cap-1 Maneuver	362	721	-	-	1012	-
Stage 1	594	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	354	721	-	-	1012	-
Mov Cap-2 Maneuver	354	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	747	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	354	721	1012	-
HCM Lane V/C Ratio	-	-	0.313	0.017	0.023	-
HCM Control Delay (s)	-	-	19.7	10.1	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0.1	0.1	-

Intersection	
Intersection Delay, s/veh	194
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	135	974	84	125	715	50	64	89	79	47	69	89
Future Vol, veh/h	135	974	84	125	715	50	64	89	79	47	69	89
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	147	1059	91	136	777	54	70	97	86	51	75	97
Number of Lanes	1	2	0	1	2	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	3	3
HCM Control Delay	290.1	147.9	29.6	21.2
HCM LOS	F	F	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	53%	0%	100%	79%	0%	100%	83%	0%	100%	0%
Vol Right, %	0%	47%	0%	0%	21%	0%	0%	17%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	168	135	649	409	125	477	288	47	69	89
LT Vol	64	0	135	0	0	125	0	0	47	0	0
Through Vol	0	89	0	649	325	0	477	238	0	69	0
RT Vol	0	79	0	0	84	0	0	50	0	0	89
Lane Flow Rate	70	183	147	706	444	136	518	313	51	75	97
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.238	0.584	0.417	1.907	1.182	0.394	1.43	0.855	0.178	0.251	0.305
Departure Headway (Hd)	14.032	13.203	10.829	10.315	10.167	11.45	10.937	10.812	14.45	13.936	13.217
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	257	276	335	360	360	317	337	338	250	260	274
Service Time	11.732	10.903	8.529	8.015	7.867	9.15	8.637	8.512	12.15	11.636	10.917
HCM Lane V/C Ratio	0.272	0.663	0.439	1.961	1.233	0.429	1.537	0.926	0.204	0.288	0.354
HCM Control Delay	21.1	32.9	21.1	441.8	138	21.4	238.4	53.2	20.3	21.2	21.6
HCM Lane LOS	C	D	C	F	F	C	F	F	C	C	C
HCM 95th-tile Q	0.9	3.4	2	45.1	17.2	1.8	24.8	7.7	0.6	1	1.3

Intersection	
Intersection Delay, s/veh	299.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	179	845	44	53	789	67	42	67	54	52	49	101
Future Vol, veh/h	179	845	44	53	789	67	42	67	54	52	49	101
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	186	880	46	55	822	70	44	70	56	54	51	105
Number of Lanes	1	1	0	1	1	0	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	339.3	365.3	19.8	21.1
HCM LOS	F	F	C	C

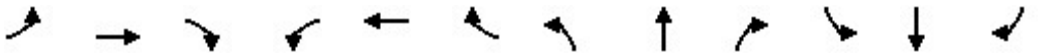
Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	100%	0%	100%	0%	26%
Vol Thru, %	41%	0%	95%	0%	92%	24%
Vol Right, %	33%	0%	5%	0%	8%	50%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	163	179	889	53	856	202
LT Vol	42	179	0	53	0	52
Through Vol	67	0	845	0	789	49
RT Vol	54	0	44	0	67	101
Lane Flow Rate	170	186	926	55	892	210
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.38	0.397	1.836	0.12	1.797	0.454
Departure Headway (Hd)	10.499	8.728	8.172	8.752	8.177	10.043
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	345	416	454	412	455	362
Service Time	8.499	6.428	5.872	6.452	5.877	8.043
HCM Lane V/C Ratio	0.493	0.447	2.04	0.133	1.96	0.58
HCM Control Delay	19.8	17.1	404.2	12.6	387.1	21.1
HCM Lane LOS	C	C	F	B	F	C
HCM 95th-tile Q	1.7	1.9	51.9	0.4	49.8	2.3

Intersection	
Intersection Delay, s/veh	201.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	296	51	56	288	83	97	597	139	89	479	67
Future Vol, veh/h	76	296	51	56	288	83	97	597	139	89	479	67
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, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	83	322	55	61	313	90	105	649	151	97	521	73
Number of Lanes	1	1	0	1	1	1	1	1	1	1	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	2
HCM Control Delay	143.3	76.5	385.3	82
HCM LOS	F	F	F	F

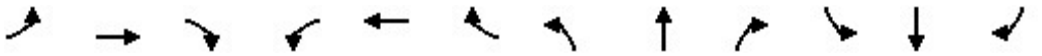
Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	100%	0%	100%	0%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	85%	0%	100%	0%	0%	100%	70%
Vol Right, %	0%	0%	100%	0%	15%	0%	0%	100%	0%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	597	139	76	347	56	288	83	89	319	227
LT Vol	97	0	0	76	0	56	0	0	89	0	0
Through Vol	0	597	0	0	296	0	288	0	0	319	160
RT Vol	0	0	139	0	51	0	0	83	0	0	67
Lane Flow Rate	105	649	151	83	377	61	313	90	97	347	246
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.354	2.091	0.458	0.285	1.24	0.208	1.028	0.279	0.319	1.096	0.764
Departure Headway (Hd)	12.849	12.322	11.585	13.465	12.862	14.418	13.892	13.157	13.996	13.464	13.244
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	282	305	313	268	287	251	263	275	258	274	276
Service Time	10.549	10.022	9.285	11.165	10.562	12.118	11.592	10.857	11.696	11.164	10.944
HCM Lane V/C Ratio	0.372	2.128	0.482	0.31	1.314	0.243	1.19	0.327	0.376	1.266	0.891
HCM Control Delay	22.4	528.5	23.7	21.4	170	20.9	103.3	20.9	23.1	122.1	48.7
HCM Lane LOS	C	F	C	C	F	C	F	C	C	F	E
HCM 95th-tile Q	1.5	44.9	2.3	1.1	16.4	0.8	10.5	1.1	1.3	12.2	5.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	454	368	129	301	467	176	262	902	73	180	559	214
Future Volume (veh/h)	454	368	129	301	467	176	262	902	73	180	559	214
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	478	387	136	317	492	185	276	949	77	189	588	225
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	455	854	381	347	639	285	244	1054	470	212	1022	456
Arrive On Green	0.26	0.24	0.24	0.20	0.18	0.18	0.07	0.30	0.30	0.06	0.29	0.29
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	478	387	136	317	492	185	276	949	77	189	588	225
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	27.7	10.0	7.7	18.9	14.3	9.4	7.7	28.0	2.3	5.9	15.4	12.8
Cycle Q Clear(g_c), s	27.7	10.0	7.7	18.9	14.3	9.4	7.7	28.0	2.3	5.9	15.4	12.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	455	854	381	347	639	285	244	1054	470	212	1022	456
V/C Ratio(X)	1.05	0.45	0.36	0.91	0.77	0.65	1.13	0.90	0.16	0.89	0.58	0.49
Avail Cap(c_a), veh/h	455	1188	530	386	1050	468	244	1054	470	212	1022	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	34.7	33.8	42.3	41.9	26.4	49.9	36.0	9.2	50.0	32.4	31.5
Incr Delay (d2), s/veh	55.7	0.4	0.6	24.1	2.0	2.5	98.1	12.1	0.7	34.1	2.4	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	4.2	2.9	10.2	6.1	3.6	6.5	13.0	1.5	3.4	6.5	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.6	35.0	34.3	66.3	43.9	28.8	148.0	48.1	9.9	84.1	34.7	35.2
LnGrp LOS	F	D	C	E	D	C	F	D	A	F	C	D
Approach Vol, veh/h		1001			994			1302			1002	
Approach Delay, s/veh		63.9			48.2			67.0			44.2	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	37.7	26.4	31.3	13.0	36.7	33.0	24.8
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	6.7	32.4	23.5	36.2	7.7	31.4	27.7	32.0
Max Q Clear Time (g_c+I1), s	7.9	30.0	20.9	12.0	9.7	17.4	29.7	16.3
Green Ext Time (p_c), s	0.0	1.4	0.3	2.7	0.0	3.7	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	56.6
HCM 6th LOS	E



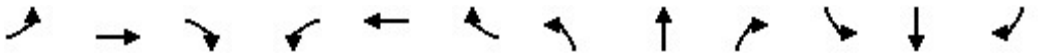
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	668	104	485	447	56	94	445	475	58	332	84
Future Volume (veh/h)	175	668	104	485	447	56	94	445	475	58	332	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	186	711	111	516	476	60	100	473	505	62	353	89
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	218	813	362	582	965	430	125	593	529	81	871	217
Arrive On Green	0.12	0.23	0.23	0.17	0.27	0.27	0.07	0.34	0.34	0.05	0.31	0.31
Sat Flow, veh/h	1767	3526	1572	3428	3526	1572	1767	1763	1572	1767	2797	696
Grp Volume(v), veh/h	186	711	111	516	476	60	100	473	505	62	221	221
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1714	1763	1572	1767	1763	1572	1767	1763	1730
Q Serve(g_s), s	11.6	21.8	6.6	16.5	12.7	2.5	6.3	27.3	35.2	3.9	11.1	11.3
Cycle Q Clear(g_c), s	11.6	21.8	6.6	16.5	12.7	2.5	6.3	27.3	35.2	3.9	11.1	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	218	813	362	582	965	430	125	593	529	81	549	539
V/C Ratio(X)	0.86	0.87	0.31	0.89	0.49	0.14	0.80	0.80	0.95	0.77	0.40	0.41
Avail Cap(c_a), veh/h	340	904	403	647	965	430	205	593	529	123	549	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	41.6	35.8	45.5	34.2	19.0	51.4	33.8	36.4	53.0	30.4	30.5
Incr Delay (d2), s/veh	12.0	8.9	0.5	13.1	0.4	0.1	10.9	10.7	29.2	14.5	2.2	2.3
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	5.6	10.0	2.5	7.8	5.3	1.2	3.1	12.7	16.9	2.0	4.8	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	50.5	36.2	58.6	34.6	19.1	62.3	44.4	65.6	67.5	32.6	32.8
LnGrp LOS	E	D	D	E	C	B	E	D	E	E	C	C
Approach Vol, veh/h		1008			1052			1078			504	
Approach Delay, s/veh		50.8			45.5			56.0			37.0	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	44.0	24.9	32.1	14.2	41.2	20.0	36.9
Change Period (Y+Rc), s	6.2	6.2	5.8	6.2	6.2	6.2	6.2	* 6.2
Max Green Setting (Gmax), s	7.8	37.8	21.2	28.8	13.0	32.6	21.6	* 28
Max Q Clear Time (g_c+I1), s	5.9	37.2	18.5	23.8	8.3	13.3	13.6	14.7
Green Ext Time (p_c), s	0.0	0.3	0.6	2.1	0.1	2.1	0.3	2.5

Intersection Summary	
HCM 6th Ctrl Delay	48.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	891	129	273	737	174	125	355	232	139	247	117
Future Volume (veh/h)	231	891	129	273	737	174	125	355	232	139	247	117
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	243	938	136	287	776	183	132	374	244	146	260	123
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	263	1003	447	314	1103	492	158	496	420	144	481	408
Arrive On Green	0.15	0.28	0.28	0.18	0.31	0.31	0.09	0.27	0.27	0.08	0.26	0.26
Sat Flow, veh/h	1767	3526	1572	1767	3526	1572	1767	1856	1572	1767	1856	1572
Grp Volume(v), veh/h	243	938	136	287	776	183	132	374	244	146	260	123
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1767	1763	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	16.0	30.7	5.9	18.8	22.9	8.0	8.7	21.9	15.9	9.6	14.3	7.4
Cycle Q Clear(g_c), s	16.0	30.7	5.9	18.8	22.9	8.0	8.7	21.9	15.9	9.6	14.3	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	1003	447	314	1103	492	158	496	420	144	481	408
V/C Ratio(X)	0.92	0.94	0.30	0.92	0.70	0.37	0.84	0.75	0.58	1.02	0.54	0.30
Avail Cap(c_a), veh/h	263	1020	455	332	1157	516	158	496	420	144	481	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	41.2	18.3	47.7	35.8	17.5	53.0	39.7	37.5	54.3	37.7	35.2
Incr Delay (d2), s/veh	35.7	15.0	0.4	28.1	1.8	0.5	30.5	10.2	5.7	79.7	4.3	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	14.8	2.9	10.5	9.7	3.9	5.1	11.1	6.6	7.4	6.9	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.3	56.2	18.7	75.8	37.6	17.9	83.5	49.9	43.3	134.0	42.0	37.1
LnGrp LOS	F	E	B	E	D	B	F	D	D	F	D	D
Approach Vol, veh/h		1317			1246			750			529	
Approach Delay, s/veh		57.7			43.5			53.7			66.2	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	37.0	26.8	39.4	15.9	36.1	23.4	42.8
Change Period (Y+Rc), s	5.4	5.4	5.8	5.8	5.4	5.4	5.8	5.8
Max Green Setting (Gmax), s	9.6	31.6	22.2	34.2	10.6	30.6	17.6	38.8
Max Q Clear Time (g_c+I1), s	11.6	23.9	20.8	32.7	10.7	16.3	18.0	24.9
Green Ext Time (p_c), s	0.0	1.9	0.1	1.0	0.0	1.5	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	53.5
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	4.6
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	2	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	90	345	257
Demand Flow Rate, veh/h	93	355	265
Vehicles Circulating, veh/h	325	57	38
Vehicles Exiting, veh/h	87	246	380
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.6	4.7	4.5
Approach LOS	A	A	A

Lane	Left	Left	Right	Left
Designated Moves	LR	LT	R	LT
Assumed Moves	LR	LT	R	LT
RT Channelized				
Lane Util	1.000	0.915	0.085	1.000
Follow-Up Headway, s	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.544	4.544	4.976
Entry Flow, veh/h	93	325	30	265
Cap Entry Lane, veh/h	991	1348	1348	1327
Entry HV Adj Factor	0.968	0.971	0.967	0.970
Flow Entry, veh/h	90	316	29	257
Cap Entry, veh/h	959	1309	1303	1287
V/C Ratio	0.094	0.241	0.022	0.200
Control Delay, s/veh	4.6	4.8	2.9	4.5
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	1

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	140	143	183	100
Demand Flow Rate, veh/h	144	147	189	103
Vehicles Circulating, veh/h	129	174	130	157
Vehicles Exiting, veh/h	131	145	143	164
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.1	4.3	4.4	3.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	144	147	189	103
Cap Entry Lane, veh/h	1210	1155	1209	1176
Entry HV Adj Factor	0.971	0.973	0.968	0.975
Flow Entry, veh/h	140	143	183	100
Cap Entry, veh/h	1175	1124	1170	1146
V/C Ratio	0.119	0.127	0.156	0.088
Control Delay, s/veh	4.1	4.3	4.4	3.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

Intersection	
Intersection Delay, s/veh	6.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	111	213	460	290
Demand Flow Rate, veh/h	114	219	474	299
Vehicles Circulating, veh/h	365	391	104	218
Vehicles Exiting, veh/h	152	187	375	392
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.0	6.4	6.7	6.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	114	219	474	299
Cap Entry Lane, veh/h	951	926	1241	1105
Entry HV Adj Factor	0.973	0.973	0.970	0.969
Flow Entry, veh/h	111	213	460	290
Cap Entry, veh/h	926	901	1204	1070
V/C Ratio	0.120	0.236	0.382	0.271
Control Delay, s/veh	5.0	6.4	6.7	6.0
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	1

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	2	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	262	262	131	82
Demand Flow Rate, veh/h	269	270	135	84
Vehicles Circulating, veh/h	98	108	267	261
Vehicles Exiting, veh/h	247	294	100	117
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	4.4	4.7	4.2
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	R	LT	R	LTR	LTR
Assumed Moves	LT	R	LT	R	LTR	LTR
RT Channelized						
Lane Util	0.948	0.052	0.915	0.085	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535	2.535	2.609	2.609
Critical Headway, s	4.544	4.544	4.544	4.544	4.976	4.976
Entry Flow, veh/h	255	14	247	23	135	84
Cap Entry Lane, veh/h	1299	1299	1287	1287	1051	1057
Entry HV Adj Factor	0.971	1.000	0.973	0.957	0.972	0.976
Flow Entry, veh/h	248	14	240	22	131	82
Cap Entry, veh/h	1261	1299	1252	1231	1022	1032
V/C Ratio	0.196	0.011	0.192	0.018	0.128	0.079
Control Delay, s/veh	4.5	2.9	4.5	3.1	4.7	4.2
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	0	1	0	0	0

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	3	5	12	9	15
Future Vol, veh/h	4	3	5	12	9	15
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, %	3	3	3	3	3	3
Mvmt Flow	4	3	5	13	10	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	7	0	29	6
Stage 1	-	-	-	-	6	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1607	-	983	1074
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1607	-	980	1074
Mov Cap-2 Maneuver	-	-	-	-	980	-
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	994	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1037	-	-	1607	-
HCM Lane V/C Ratio	0.025	-	-	0.003	-
HCM Control Delay (s)	8.6	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	4	8	5	12	25
Future Vol, veh/h	15	4	8	5	12	25
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, %	3	3	3	3	3	3
Mvmt Flow	16	4	9	5	13	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	20	0	41	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1590	-	968	1058
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1590	-	962	1058
Mov Cap-2 Maneuver	-	-	-	-	962	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	991	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1025	-	-	1590	-
HCM Lane V/C Ratio	0.039	-	-	0.005	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	37	12	13	40	0
Future Vol, veh/h	0	37	12	13	40	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	40	13	14	43	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	83	43	43	0	-	0
Stage 1	43	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	916	1025	1559	-	-	-
Stage 1	977	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	909	1025	1559	-	-	-
Mov Cap-2 Maneuver	909	-	-	-	-	-
Stage 1	969	-	-	-	-	-
Stage 2	980	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	3.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1559	-	1025	-	-
HCM Lane V/C Ratio	0.008	-	0.039	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	46	16	25	77	0
Future Vol, veh/h	0	46	16	25	77	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	50	17	27	84	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	145	84	84	0	-	0
Stage 1	84	-	-	-	-	-
Stage 2	61	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	845	972	1506	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	836	972	1506	-	-	-
Mov Cap-2 Maneuver	836	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	2.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1506	-	972	-	-
HCM Lane V/C Ratio	0.012	-	0.051	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	154	106	8	22	9
Future Vol, veh/h	3	154	106	8	22	9
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, %	3	3	3	3	3	3
Mvmt Flow	3	167	115	9	24	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	124	0	-	0	293	120
Stage 1	-	-	-	-	120	-
Stage 2	-	-	-	-	173	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1457	-	-	-	696	929
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1457	-	-	-	695	929
Mov Cap-2 Maneuver	-	-	-	-	695	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	855	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1457	-	-	-	750
HCM Lane V/C Ratio	0.002	-	-	-	0.045
HCM Control Delay (s)	7.5	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	125	110	7	22	9
Future Vol, veh/h	3	125	110	7	22	9
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, %	3	3	3	3	3	3
Mvmt Flow	3	136	120	8	24	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	128	0	-	0	266	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1452	-	-	-	721	924
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	883	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1452	-	-	-	720	924
Mov Cap-2 Maneuver	-	-	-	-	720	-
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	883	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1452	-	-	-	769
HCM Lane V/C Ratio	0.002	-	-	-	0.044
HCM Control Delay (s)	7.5	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	76	3	6	102	11	9	0	19	33	0	23
Future Vol, veh/h	8	76	3	6	102	11	9	0	19	33	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	9	83	3	7	111	12	10	0	21	36	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	123	0	0	86	0	0	247	240	85	244	235	117
Stage 1	-	-	-	-	-	-	103	103	-	131	131	-
Stage 2	-	-	-	-	-	-	144	137	-	113	104	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1458	-	-	1504	-	-	705	660	971	708	664	932
Stage 1	-	-	-	-	-	-	900	808	-	870	786	-
Stage 2	-	-	-	-	-	-	856	781	-	890	807	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1458	-	-	1504	-	-	680	653	971	687	657	932
Mov Cap-2 Maneuver	-	-	-	-	-	-	680	653	-	687	657	-
Stage 1	-	-	-	-	-	-	895	803	-	865	782	-
Stage 2	-	-	-	-	-	-	829	777	-	866	802	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.4	9.4	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	854	1458	-	-	1504	-	-	770
HCM Lane V/C Ratio	0.036	0.006	-	-	0.004	-	-	0.079
HCM Control Delay (s)	9.4	7.5	0	-	7.4	0	-	10.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	145	2	4	111	6	12
Future Vol, veh/h	145	2	4	111	6	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, %	3	3	3	3	3	3
Mvmt Flow	158	2	4	121	7	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	160	0	288	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	129	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1413	-	700	884
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	894	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1413	-	698	884
Mov Cap-2 Maneuver	-	-	-	-	698	-
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	891	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	812	-	-	1413	-
HCM Lane V/C Ratio	0.024	-	-	0.003	-
HCM Control Delay (s)	9.5	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	10	17	8	6	10
Future Vol, veh/h	14	10	17	8	6	10
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, %	3	3	3	3	3	3
Mvmt Flow	15	11	18	9	7	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	66	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1582	-	937	1054
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	975	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1582	-	927	1054
Mov Cap-2 Maneuver	-	-	-	-	927	-
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	964	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1002	-	-	1582	-
HCM Lane V/C Ratio	0.017	-	-	0.012	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	14	28	17	8	16
Future Vol, veh/h	10	14	28	17	8	16
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, %	3	3	3	3	3	3
Mvmt Flow	11	15	30	18	9	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	97	19
Stage 1	-	-	-	-	19	-
Stage 2	-	-	-	-	78	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1582	-	900	1056
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	943	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1582	-	883	1056
Mov Cap-2 Maneuver	-	-	-	-	883	-
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.6	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	991	-	-	1582	-
HCM Lane V/C Ratio	0.026	-	-	0.019	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	42	45	26	0
Future Vol, veh/h	0	25	42	45	26	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	27	46	49	28	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	169	28	28	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	141	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	819	1044	1579	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	883	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	794	1044	1579	-	-	-
Mov Cap-2 Maneuver	794	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1579	-	1044	-	-
HCM Lane V/C Ratio	0.029	-	0.026	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	30	51	87	51	0
Future Vol, veh/h	0	30	51	87	51	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	33	55	95	55	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	260	55	55	0	-	0
Stage 1	55	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	727	1009	1544	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	699	1009	1544	-	-	-
Mov Cap-2 Maneuver	699	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	827	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	2.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1544	-	1009	-	-
HCM Lane V/C Ratio	0.036	-	0.032	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	193	180	24	14	6
Future Vol, veh/h	10	193	180	24	14	6
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, %	3	3	3	3	3	3
Mvmt Flow	11	210	196	26	15	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	222	0	-	0	441	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	232	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1341	-	-	-	572	829
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1341	-	-	-	567	829
Mov Cap-2 Maneuver	-	-	-	-	567	-
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1341	-	-	-	626
HCM Lane V/C Ratio	0.008	-	-	-	0.035
HCM Control Delay (s)	7.7	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	188	152	24	14	6
Future Vol, veh/h	10	188	152	24	14	6
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, %	3	3	3	3	3	3
Mvmt Flow	11	204	165	26	15	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	191	0	-	0	404	178
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1377	-	-	-	601	862
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1377	-	-	-	596	862
Mov Cap-2 Maneuver	-	-	-	-	596	-
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	809	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1377	-	-	-	657
HCM Lane V/C Ratio	0.008	-	-	-	0.033
HCM Control Delay (s)	7.6	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	25	163	11	21	99	38	6	0	12	23	0	15
Future Vol, veh/h	25	163	11	21	99	38	6	0	12	23	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	27	177	12	23	108	41	7	0	13	25	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	149	0	0	189	0	0	420	432	183	419	418	129
Stage 1	-	-	-	-	-	-	237	237	-	175	175	-
Stage 2	-	-	-	-	-	-	183	195	-	244	243	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1426	-	-	1379	-	-	542	515	857	543	524	918
Stage 1	-	-	-	-	-	-	764	707	-	824	752	-
Stage 2	-	-	-	-	-	-	816	737	-	757	703	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1426	-	-	1379	-	-	517	495	857	519	504	918
Mov Cap-2 Maneuver	-	-	-	-	-	-	517	495	-	519	504	-
Stage 1	-	-	-	-	-	-	748	692	-	807	738	-
Stage 2	-	-	-	-	-	-	787	724	-	730	688	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1	10.3	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	703	1426	-	-	1379	-	-	626
HCM Lane V/C Ratio	0.028	0.019	-	-	0.017	-	-	0.066
HCM Control Delay (s)	10.3	7.6	0	-	7.7	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	7	14	172	4	8
Future Vol, veh/h	195	7	14	172	4	8
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, %	3	3	3	3	3	3
Mvmt Flow	212	8	15	187	4	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	220	0	433	216
Stage 1	-	-	-	-	216	-
Stage 2	-	-	-	-	217	-
Critical Hdwy	-	-	4.13	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.227	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1343	-	578	821
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1343	-	571	821
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	807	-

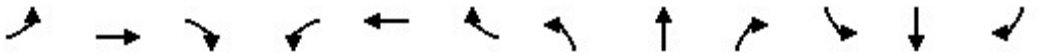
Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	716	-	-	1343	-
HCM Lane V/C Ratio	0.018	-	-	0.011	-
HCM Control Delay (s)	10.1	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

20-YEAR HORIZON CONDITIONS

HCM 6th Signalized Intersection Summary
9: Dinuba Boulevard & Riggin Avenue

11/19/2021



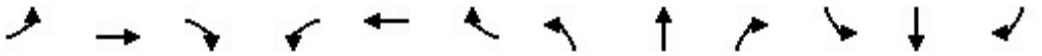
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	438	207	200	411	120	192	488	77	172	695	213
Future Volume (veh/h)	291	438	207	200	411	120	192	488	77	172	695	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	306	461	218	211	433	126	202	514	81	181	732	224
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	393	663	296	250	757	338	276	1231	549	306	1261	562
Arrive On Green	0.11	0.19	0.19	0.14	0.21	0.21	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	3428	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	306	461	218	211	433	126	202	514	81	181	732	224
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	8.0	11.3	12.1	10.8	10.2	4.7	5.4	10.3	2.0	4.7	15.7	9.9
Cycle Q Clear(g_c), s	8.0	11.3	12.1	10.8	10.2	4.7	5.4	10.3	2.0	4.7	15.7	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	393	663	296	250	757	338	276	1231	549	306	1261	562
V/C Ratio(X)	0.78	0.69	0.74	0.85	0.57	0.37	0.73	0.42	0.15	0.59	0.58	0.40
Avail Cap(c_a), veh/h	636	1256	560	414	1427	636	393	1231	549	422	1261	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	35.1	35.4	38.8	32.6	17.0	41.6	22.8	7.5	40.5	24.0	22.1
Incr Delay (d2), s/veh	3.3	1.3	3.6	8.1	0.7	0.7	4.1	1.0	0.6	1.8	2.0	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	3.4	4.7	4.7	5.0	4.2	2.3	2.3	4.1	1.2	2.0	6.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	36.4	39.0	46.9	33.3	17.7	45.7	23.9	8.1	42.4	25.9	24.2
LnGrp LOS	D	D	D	D	C	B	D	C	A	D	C	C
Approach Vol, veh/h		985			770			797			1137	
Approach Delay, s/veh		39.1			34.5			27.8			28.2	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	37.9	18.4	22.7	12.8	38.7	15.9	25.2
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	11.5	32.6	21.7	33.0	10.7	33.4	17.2	37.5
Max Q Clear Time (g_c+I1), s	6.7	12.3	12.8	14.1	7.4	17.7	10.0	12.2
Green Ext Time (p_c), s	0.2	3.3	0.4	3.3	0.2	4.8	0.6	3.0

Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
9: Dinuba Boulevard & Riggin Avenue

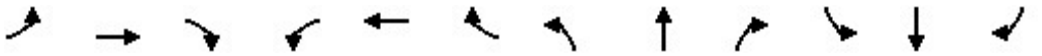
11/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	506	410	121	367	513	192	248	1061	89	200	651	237
Future Volume (veh/h)	506	410	121	367	513	192	248	1061	89	200	651	237
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	533	432	127	386	540	202	261	1117	94	211	685	249
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	614	575	257	386	714	318	323	1224	546	219	1118	499
Arrive On Green	0.18	0.16	0.16	0.22	0.20	0.20	0.09	0.35	0.35	0.06	0.32	0.32
Sat Flow, veh/h	3428	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	533	432	127	386	540	202	261	1117	94	211	685	249
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	15.7	12.1	7.6	22.7	15.0	9.7	7.8	31.7	2.2	6.4	17.2	13.4
Cycle Q Clear(g_c), s	15.7	12.1	7.6	22.7	15.0	9.7	7.8	31.7	2.2	6.4	17.2	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	614	575	257	386	714	318	323	1224	546	219	1118	499
V/C Ratio(X)	0.87	0.75	0.49	1.00	0.76	0.63	0.81	0.91	0.17	0.96	0.61	0.50
Avail Cap(c_a), veh/h	742	1119	499	386	1126	502	337	1224	546	219	1118	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	41.5	39.6	40.6	39.0	23.8	46.1	32.3	6.0	48.5	29.9	28.6
Incr Delay (d2), s/veh	9.3	2.0	1.5	45.9	1.7	2.1	13.2	11.8	0.7	50.1	2.5	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	5.2	2.9	14.3	6.4	3.6	3.8	14.5	1.6	4.2	7.2	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	43.5	41.1	86.5	40.7	25.9	59.4	44.0	6.7	98.6	32.4	32.2
LnGrp LOS	D	D	D	F	D	C	E	D	A	F	C	C
Approach Vol, veh/h		1092			1128			1472			1145	
Approach Delay, s/veh		46.8			53.7			44.4			44.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	41.7	28.0	22.3	15.2	38.5	23.9	26.3
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	6.7	36.4	22.7	33.0	10.3	32.8	22.5	33.2
Max Q Clear Time (g_c+I1), s	8.4	33.7	24.7	14.1	9.8	19.2	17.7	17.0
Green Ext Time (p_c), s	0.0	1.8	0.0	2.8	0.0	4.3	0.9	3.6

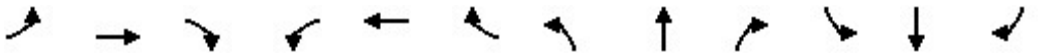
Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	469	244	200	422	120	205	488	77	172	695	213
Future Volume (veh/h)	291	469	244	200	422	120	205	488	77	172	695	213
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	306	494	257	211	444	126	216	514	81	181	732	224
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	392	677	302	249	770	344	291	1252	558	284	1244	555
Arrive On Green	0.11	0.19	0.19	0.14	0.22	0.22	0.09	0.36	0.36	0.08	0.36	0.36
Sat Flow, veh/h	3428	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	306	494	257	211	444	126	216	514	81	181	732	224
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	8.1	12.4	11.2	10.9	10.6	4.8	5.8	10.4	3.3	4.8	16.0	10.1
Cycle Q Clear(g_c), s	8.1	12.4	11.2	10.9	10.6	4.8	5.8	10.4	3.3	4.8	16.0	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	392	677	302	249	770	344	291	1252	558	284	1244	555
V/C Ratio(X)	0.78	0.73	0.85	0.85	0.58	0.37	0.74	0.41	0.15	0.64	0.59	0.40
Avail Cap(c_a), veh/h	628	1239	553	390	1371	611	424	1252	558	417	1244	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	35.6	20.8	39.4	32.8	17.5	41.9	22.7	20.4	41.7	24.6	22.7
Incr Delay (d2), s/veh	3.4	1.5	6.7	9.9	0.7	0.7	4.0	1.0	0.5	2.4	2.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.2	4.3	5.2	4.3	2.3	2.5	4.1	1.2	2.0	6.5	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	37.2	27.5	49.3	33.5	18.1	45.9	23.7	21.0	44.0	26.7	24.9
LnGrp LOS	D	D	C	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1057			781			811			1137	
Approach Delay, s/veh		36.7			35.3			29.3			29.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	38.9	18.5	23.3	13.3	38.7	16.0	25.8
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	11.5	33.6	20.7	33.0	11.7	33.4	17.2	36.5
Max Q Clear Time (g_c+I1), s	6.8	12.4	12.9	14.4	7.8	18.0	10.1	12.6
Green Ext Time (p_c), s	0.2	3.3	0.3	3.7	0.2	4.8	0.6	3.1

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

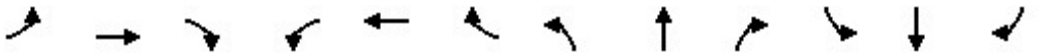


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	506	431	145	367	547	192	289	1061	89	200	651	237
Future Volume (veh/h)	506	431	145	367	547	192	289	1061	89	200	651	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	533	454	153	386	576	202	304	1117	94	211	685	249
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	613	604	269	382	736	328	364	1213	541	217	1062	474
Arrive On Green	0.18	0.17	0.17	0.22	0.21	0.21	0.11	0.35	0.35	0.06	0.30	0.30
Sat Flow, veh/h	3428	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	533	454	153	386	576	202	304	1117	94	211	685	249
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	15.9	12.9	9.4	22.7	16.2	12.2	9.2	32.2	2.3	6.5	17.8	8.3
Cycle Q Clear(g_c), s	15.9	12.9	9.4	22.7	16.2	12.2	9.2	32.2	2.3	6.5	17.8	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	613	604	269	382	736	328	364	1213	541	217	1062	474
V/C Ratio(X)	0.87	0.75	0.57	1.01	0.78	0.62	0.84	0.92	0.17	0.97	0.65	0.53
Avail Cap(c_a), veh/h	735	1108	494	382	1115	497	373	1213	541	217	1062	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	41.4	39.9	41.1	39.3	37.7	46.0	32.9	6.3	49.0	31.7	10.8
Incr Delay (d2), s/veh	9.6	1.9	1.9	48.6	2.1	1.9	14.8	12.7	0.7	52.9	3.0	4.1
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	7.3	5.5	3.6	14.6	6.9	4.7	4.5	14.8	1.6	4.3	7.6	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.5	43.3	41.8	89.7	41.4	39.6	60.8	45.7	7.0	102.0	34.7	15.0
LnGrp LOS	D	D	D	F	D	D	E	D	A	F	C	B
Approach Vol, veh/h		1140			1164			1515			1145	
Approach Delay, s/veh		47.0			57.1			46.3			42.8	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	41.7	28.0	23.3	16.5	37.2	24.1	27.2
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	6.7	36.4	22.7	33.0	11.5	31.6	22.5	33.2
Max Q Clear Time (g_c+I1), s	8.5	34.2	24.7	14.9	11.2	19.8	17.9	18.2
Green Ext Time (p_c), s	0.0	1.5	0.0	3.0	0.0	4.0	0.9	3.7

Intersection Summary	
HCM 6th Ctrl Delay	48.2
HCM 6th LOS	D

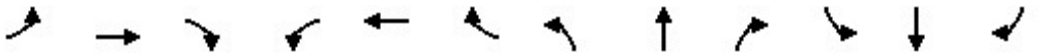
MITIGATION



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	574	47	81	675	29	97	69	104	48	83	57
Future Volume (veh/h)	39	574	47	81	675	29	97	69	104	48	83	57
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	42	617	51	87	726	31	104	74	112	52	89	61
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	81	966	80	131	1108	47	144	114	172	94	264	224
Arrive On Green	0.05	0.29	0.29	0.07	0.32	0.32	0.08	0.17	0.17	0.05	0.14	0.14
Sat Flow, veh/h	1767	3297	272	1767	3445	147	1767	666	1008	1767	1856	1572
Grp Volume(v), veh/h	42	329	339	87	371	386	104	0	186	52	89	61
Grp Sat Flow(s),veh/h/ln	1767	1763	1807	1767	1763	1829	1767	0	1674	1767	1856	1572
Q Serve(g_s), s	1.0	7.2	7.2	2.1	8.0	8.0	2.5	0.0	4.6	1.3	1.9	1.5
Cycle Q Clear(g_c), s	1.0	7.2	7.2	2.1	8.0	8.0	2.5	0.0	4.6	1.3	1.9	1.5
Prop In Lane	1.00		0.15	1.00		0.08	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	81	516	529	131	567	588	144	0	285	94	264	224
V/C Ratio(X)	0.52	0.64	0.64	0.66	0.65	0.66	0.72	0.00	0.65	0.55	0.34	0.27
Avail Cap(c_a), veh/h	261	1061	1087	421	1221	1267	502	0	1045	301	948	803
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	1.00	1.00
Uniform Delay (d), s/veh	20.5	13.5	13.5	19.8	12.8	12.8	19.7	0.0	17.0	20.3	17.0	16.9
Incr Delay (d2), s/veh	5.1	1.3	1.3	5.6	1.3	1.2	6.6	0.0	2.5	4.9	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.2	2.3	0.9	2.4	2.5	1.1	0.0	1.6	0.6	0.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	14.9	14.8	25.4	14.1	14.1	26.3	0.0	19.6	25.3	17.8	17.5
LnGrp LOS	C	B	B	C	B	B	C	A	B	C	B	B
Approach Vol, veh/h		710			844			290			202	
Approach Delay, s/veh		15.5			15.3			22.0			19.6	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	12.0	7.8	17.4	8.1	10.8	6.5	18.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	27.5	10.5	26.5	12.5	22.5	6.5	30.5
Max Q Clear Time (g_c+I1), s	3.3	6.6	4.1	9.2	4.5	3.9	3.0	10.0
Green Ext Time (p_c), s	0.0	0.9	0.1	3.4	0.1	0.5	0.0	4.2

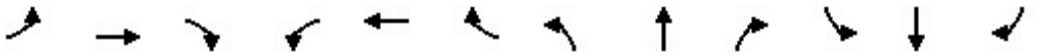
Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	549	43	40	525	42	50	159	43	81	128	157
Future Volume (veh/h)	82	549	43	40	525	42	50	159	43	81	128	157
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	631	49	46	603	48	57	183	49	93	147	180
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	121	742	58	77	698	56	132	350	84	155	198	213
Arrive On Green	0.07	0.44	0.44	0.04	0.41	0.41	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1767	1700	132	1767	1696	135	207	1143	276	280	646	694
Grp Volume(v), veh/h	94	0	680	46	0	651	289	0	0	420	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1832	1767	0	1831	1626	0	0	1620	0	0
Q Serve(g_s), s	3.3	0.0	21.0	1.6	0.0	20.5	0.0	0.0	0.0	6.1	0.0	0.0
Cycle Q Clear(g_c), s	3.3	0.0	21.0	1.6	0.0	20.5	8.9	0.0	0.0	15.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.07	0.20		0.17	0.22		0.43
Lane Grp Cap(c), veh/h	121	0	799	77	0	754	566	0	0	566	0	0
V/C Ratio(X)	0.78	0.00	0.85	0.59	0.00	0.86	0.51	0.00	0.00	0.74	0.00	0.00
Avail Cap(c_a), veh/h	221	0	1157	148	0	1081	863	0	0	854	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.0	0.0	16.0	29.7	0.0	17.0	18.2	0.0	0.0	20.2	0.0	0.0
Incr Delay (d2), s/veh	10.2	0.0	4.3	7.1	0.0	5.2	0.7	0.0	0.0	2.0	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	1.6	0.0	7.8	0.8	0.0	7.9	3.2	0.0	0.0	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	0.0	20.2	36.7	0.0	22.2	18.9	0.0	0.0	22.2	0.0	0.0
LnGrp LOS	D	A	C	D	A	C	B	A	A	C	A	A
Approach Vol, veh/h		774			697			289			420	
Approach Delay, s/veh		22.5			23.1			18.9			22.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.8	7.3	32.1		23.8	8.8	30.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		31.3	5.3	39.9		31.3	7.9	37.3				
Max Q Clear Time (g_c+I1), s		10.9	3.6	23.0		17.0	5.3	22.5				
Green Ext Time (p_c), s		1.7	0.0	3.9		2.3	0.0	3.5				

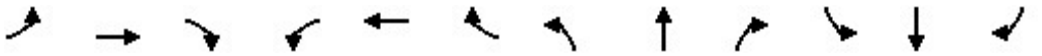
Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	137	35	22	106	20	26	205	23	49	295	28
Future Volume (veh/h)	28	137	35	22	106	20	26	205	23	49	295	28
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	32	157	40	25	122	23	30	236	26	56	339	32
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	68	256	65	55	319	270	64	388	329	106	759	71
Arrive On Green	0.04	0.18	0.18	0.03	0.17	0.17	0.04	0.21	0.21	0.06	0.23	0.23
Sat Flow, veh/h	1767	1427	363	1767	1856	1572	1767	1856	1572	1767	3258	306
Grp Volume(v), veh/h	32	0	197	25	122	23	30	236	26	56	182	189
Grp Sat Flow(s),veh/h/ln	1767	0	1790	1767	1856	1572	1767	1856	1572	1767	1763	1801
Q Serve(g_s), s	0.6	0.0	3.5	0.5	2.0	0.4	0.6	4.0	0.5	1.1	3.1	3.1
Cycle Q Clear(g_c), s	0.6	0.0	3.5	0.5	2.0	0.4	0.6	4.0	0.5	1.1	3.1	3.1
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	68	0	321	55	319	270	64	388	329	106	411	419
V/C Ratio(X)	0.47	0.00	0.61	0.46	0.38	0.09	0.47	0.61	0.08	0.53	0.44	0.45
Avail Cap(c_a), veh/h	434	0	1217	434	1261	1069	434	1583	1342	537	1606	1641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	0.0	13.1	16.5	12.7	12.0	16.3	12.4	11.0	15.8	11.3	11.4
Incr Delay (d2), s/veh	5.1	0.0	1.9	5.9	0.8	0.1	5.3	1.5	0.1	4.0	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.1	0.2	0.7	0.1	0.3	1.3	0.1	0.4	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.3	0.0	15.0	22.4	13.4	12.2	21.6	13.9	11.1	19.8	12.1	12.1
LnGrp LOS	C	A	B	C	B	B	C	B	B	B	B	B
Approach Vol, veh/h		229			170			292			427	
Approach Delay, s/veh		15.9			14.6			14.5			13.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.6	11.7	5.6	10.7	5.8	12.6	5.8	10.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	29.5	8.5	23.5	8.5	31.5	8.5	23.5
Max Q Clear Time (g_c+I1), s	3.1	6.0	2.5	5.5	2.6	5.1	2.6	4.0
Green Ext Time (p_c), s	0.0	1.2	0.0	0.9	0.0	2.0	0.0	0.6

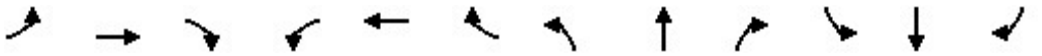
Intersection Summary	
HCM 6th Ctrl Delay	14.3
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	813	69	103	606	41	53	67	65	39	53	33
Future Volume (veh/h)	43	813	69	103	606	41	53	67	65	39	53	33
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	48	913	78	116	681	46	60	75	73	44	60	37
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	301	1267	108	151	1006	68	99	115	112	80	227	193
Arrive On Green	0.17	0.39	0.39	0.09	0.30	0.30	0.06	0.13	0.13	0.05	0.12	0.12
Sat Flow, veh/h	1767	3287	281	1767	3351	226	1767	864	841	1767	1856	1572
Grp Volume(v), veh/h	48	490	501	116	358	369	60	0	148	44	60	37
Grp Sat Flow(s),veh/h/ln	1767	1763	1805	1767	1763	1815	1767	0	1704	1767	1856	1572
Q Serve(g_s), s	1.2	12.1	12.1	3.3	9.1	9.2	1.7	0.0	4.2	1.3	1.5	0.7
Cycle Q Clear(g_c), s	1.2	12.1	12.1	3.3	9.1	9.2	1.7	0.0	4.2	1.3	1.5	0.7
Prop In Lane	1.00		0.16	1.00		0.12	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	301	679	696	151	529	545	99	0	227	80	227	193
V/C Ratio(X)	0.16	0.72	0.72	0.77	0.68	0.68	0.61	0.00	0.65	0.55	0.26	0.19
Avail Cap(c_a), veh/h	301	1117	1143	396	1275	1312	258	0	714	224	741	628
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	1.00	1.00
Uniform Delay (d), s/veh	18.1	13.4	13.4	23.0	15.8	15.8	23.7	0.0	21.1	24.0	20.4	7.4
Incr Delay (d2), s/veh	0.2	1.5	1.4	8.0	1.5	1.5	5.9	0.0	3.2	5.7	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.8	3.9	1.5	3.1	3.2	0.8	0.0	1.7	0.6	0.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	14.9	14.8	30.9	17.3	17.3	29.5	0.0	24.3	29.7	21.0	7.9
LnGrp LOS	B	B	B	C	B	B	C	A	C	C	C	A
Approach Vol, veh/h		1039			843			208			141	
Approach Delay, s/veh		15.0			19.2			25.8			20.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	11.3	8.9	24.3	7.4	10.8	13.2	19.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	21.5	11.5	32.5	7.5	20.5	6.9	37.1
Max Q Clear Time (g_c+I1), s	3.3	6.2	5.3	14.1	3.7	3.5	3.2	11.2
Green Ext Time (p_c), s	0.0	0.6	0.1	5.6	0.0	0.3	0.0	4.2

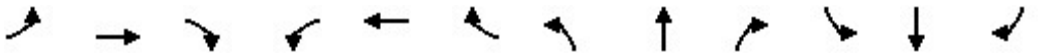
Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	704	34	44	626	63	30	57	46	47	41	96
Future Volume (veh/h)	170	704	34	44	626	63	30	57	46	47	41	96
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	177	733	35	46	652	66	31	59	48	49	43	100
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	227	965	46	81	774	78	120	140	96	131	76	136
Arrive On Green	0.13	0.55	0.55	0.05	0.47	0.47	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	1757	84	1767	1658	168	247	876	599	304	478	850
Grp Volume(v), veh/h	177	0	768	46	0	718	138	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1840	1767	0	1825	1721	0	0	1632	0	0
Q Serve(g_s), s	5.3	0.0	17.8	1.4	0.0	19.0	0.0	0.0	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	5.3	0.0	17.8	1.4	0.0	19.0	3.9	0.0	0.0	6.0	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.09	0.22		0.35	0.26		0.52
Lane Grp Cap(c), veh/h	227	0	1011	81	0	852	355	0	0	343	0	0
V/C Ratio(X)	0.78	0.00	0.76	0.57	0.00	0.84	0.39	0.00	0.00	0.56	0.00	0.00
Avail Cap(c_a), veh/h	434	0	1690	177	0	1410	691	0	0	669	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.2	0.0	9.6	25.7	0.0	12.9	21.1	0.0	0.0	21.9	0.0	0.0
Incr Delay (d2), s/veh	5.8	0.0	1.2	6.1	0.0	2.5	0.7	0.0	0.0	1.4	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	2.3	0.0	4.7	0.7	0.0	6.0	1.5	0.0	0.0	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.0	0.0	10.8	31.8	0.0	15.4	21.8	0.0	0.0	23.3	0.0	0.0
LnGrp LOS	C	A	B	C	A	B	C	A	A	C	A	A
Approach Vol, veh/h		945			764			138			192	
Approach Delay, s/veh		14.2			16.4			21.8			23.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.3	7.0	34.7		13.3	11.6	30.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	5.5	50.5		20.5	13.5	42.5				
Max Q Clear Time (g_c+I1), s		5.9	3.4	19.8		8.0	7.3	21.0				
Green Ext Time (p_c), s		0.6	0.0	5.6		0.8	0.2	4.7				

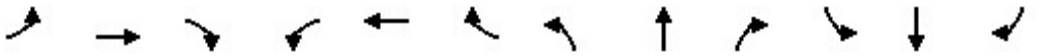
Intersection Summary												
HCM 6th Ctrl Delay			16.4									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	243	42	46	237	63	80	446	114	70	373	52
Future Volume (veh/h)	57	243	42	46	237	63	80	446	114	70	373	52
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	62	264	46	50	258	68	87	485	124	76	405	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	99	340	59	86	396	336	120	616	522	112	1017	142
Arrive On Green	0.06	0.22	0.22	0.05	0.21	0.21	0.07	0.33	0.33	0.06	0.33	0.33
Sat Flow, veh/h	1767	1539	268	1767	1856	1572	1767	1856	1572	1767	3106	434
Grp Volume(v), veh/h	62	0	310	50	258	68	87	485	124	76	229	233
Grp Sat Flow(s),veh/h/ln	1767	0	1807	1767	1856	1572	1767	1856	1572	1767	1763	1777
Q Serve(g_s), s	1.8	0.0	8.7	1.5	6.8	1.9	2.6	12.7	2.1	2.3	5.4	5.5
Cycle Q Clear(g_c), s	1.8	0.0	8.7	1.5	6.8	1.9	2.6	12.7	2.1	2.3	5.4	5.5
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	99	0	399	86	396	336	120	616	522	112	577	582
V/C Ratio(X)	0.62	0.00	0.78	0.58	0.65	0.20	0.73	0.79	0.24	0.68	0.40	0.40
Avail Cap(c_a), veh/h	247	0	724	181	674	571	332	1261	1069	280	1146	1155
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	0.0	19.7	25.0	19.3	17.4	24.5	16.2	5.9	24.6	14.0	14.0
Incr Delay (d2), s/veh	6.3	0.0	3.3	6.0	1.8	0.3	8.1	2.3	0.2	7.1	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	3.4	0.7	2.7	0.6	1.2	4.6	0.9	1.1	1.8	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	0.0	23.0	31.0	21.1	17.7	32.7	18.5	6.2	31.7	14.4	14.4
LnGrp LOS	C	A	C	C	C	B	C	B	A	C	B	B
Approach Vol, veh/h		372			376			696			538	
Approach Delay, s/veh		24.3			21.8			18.1			16.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	22.3	7.1	16.3	8.1	22.1	7.5	16.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	36.5	5.5	21.5	10.1	34.9	7.5	19.5
Max Q Clear Time (g_c+I1), s	4.3	14.7	3.5	10.7	4.6	7.5	3.8	8.8
Green Ext Time (p_c), s	0.0	3.1	0.0	1.2	0.1	2.6	0.0	1.1

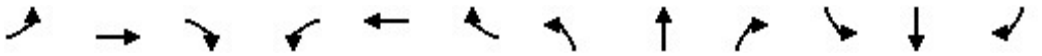
Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	588	47	81	715	29	97	71	104	48	89	131
Future Volume (veh/h)	63	588	47	81	715	29	97	71	104	48	89	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	632	51	87	769	31	104	76	112	52	96	141
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	111	1054	85	128	1136	46	141	114	168	93	261	222
Arrive On Green	0.06	0.32	0.32	0.07	0.33	0.33	0.08	0.17	0.17	0.05	0.14	0.14
Sat Flow, veh/h	1767	3304	266	1767	3454	139	1767	677	998	1767	1856	1572
Grp Volume(v), veh/h	68	337	346	87	392	408	104	0	188	52	96	141
Grp Sat Flow(s),veh/h/ln	1767	1763	1808	1767	1763	1830	1767	0	1676	1767	1856	1572
Q Serve(g_s), s	1.7	7.5	7.5	2.2	8.9	8.9	2.7	0.0	4.9	1.3	2.2	2.8
Cycle Q Clear(g_c), s	1.7	7.5	7.5	2.2	8.9	8.9	2.7	0.0	4.9	1.3	2.2	2.8
Prop In Lane	1.00		0.15	1.00		0.08	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	111	562	577	128	580	602	141	0	281	93	261	222
V/C Ratio(X)	0.61	0.60	0.60	0.68	0.68	0.68	0.74	0.00	0.67	0.56	0.37	0.64
Avail Cap(c_a), veh/h	362	1083	1110	400	1121	1164	476	0	921	286	820	695
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	1.00	1.00
Uniform Delay (d), s/veh	21.2	13.3	13.3	21.0	13.4	13.4	20.9	0.0	18.1	21.5	18.1	9.2
Incr Delay (d2), s/veh	5.3	1.0	1.0	6.1	1.4	1.3	7.4	0.0	2.7	5.2	0.9	3.0
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	0.8	2.3	2.4	1.0	2.8	2.9	1.2	0.0	1.8	0.6	0.8	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	14.3	14.3	27.1	14.8	14.8	28.3	0.0	20.8	26.6	18.9	12.3
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	B	B
Approach Vol, veh/h		751			887			292			289	
Approach Delay, s/veh		15.4			16.0			23.5			17.1	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	12.3	7.9	19.3	8.2	11.0	7.4	19.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	25.5	10.5	28.5	12.5	20.5	9.5	29.5
Max Q Clear Time (g_c+I1), s	3.3	6.9	4.2	9.5	4.7	4.8	3.7	10.9
Green Ext Time (p_c), s	0.0	0.9	0.1	3.6	0.1	0.8	0.0	4.3

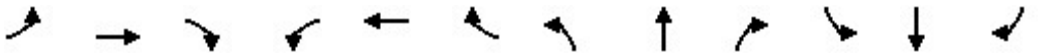
Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	617	49	40	547	42	52	159	43	81	128	157
Future Volume (veh/h)	82	617	49	40	547	42	52	159	43	81	128	157
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	94	709	56	46	629	48	60	183	49	93	147	180
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	120	789	62	74	747	57	126	330	80	147	191	207
Arrive On Green	0.07	0.46	0.46	0.04	0.44	0.44	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1767	1697	134	1767	1702	130	213	1087	262	280	630	682
Grp Volume(v), veh/h	94	0	765	46	0	677	292	0	0	420	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1831	1767	0	1832	1562	0	0	1591	0	0
Q Serve(g_s), s	3.7	0.0	27.3	1.8	0.0	23.4	0.0	0.0	0.0	6.9	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	27.3	1.8	0.0	23.4	10.7	0.0	0.0	17.6	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.07	0.21		0.17	0.22		0.43
Lane Grp Cap(c), veh/h	120	0	851	74	0	804	535	0	0	545	0	0
V/C Ratio(X)	0.78	0.00	0.90	0.62	0.00	0.84	0.55	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	161	0	1042	132	0	1011	734	0	0	740	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.7	0.0	17.5	33.5	0.0	17.8	20.7	0.0	0.0	23.2	0.0	0.0
Incr Delay (d2), s/veh	15.9	0.0	9.1	8.2	0.0	5.4	0.9	0.0	0.0	3.5	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	2.0	0.0	11.4	0.9	0.0	9.3	3.9	0.0	0.0	6.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	0.0	26.6	41.7	0.0	23.1	21.6	0.0	0.0	26.6	0.0	0.0
LnGrp LOS	D	A	C	D	A	C	C	A	A	C	A	A
Approach Vol, veh/h		859			723			292			420	
Approach Delay, s/veh		29.0			24.3			21.6			26.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.1	7.5	37.6		26.1	9.3	35.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.7	5.3	40.5		30.7	6.5	39.3				
Max Q Clear Time (g_c+I1), s		12.7	3.8	29.3		19.6	5.7	25.4				
Green Ext Time (p_c), s		1.6	0.0	3.8		2.1	0.0	3.6				

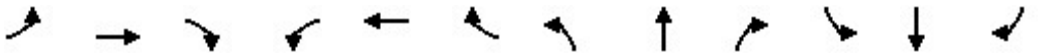
Intersection Summary												
HCM 6th Ctrl Delay			26.2									
HCM 6th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	137	35	22	106	22	26	231	23	55	372	34
Future Volume (veh/h)	30	137	35	22	106	22	26	231	23	55	372	34
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	34	157	40	25	122	25	30	266	26	63	428	39
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	71	252	64	54	311	263	64	418	354	115	831	75
Arrive On Green	0.04	0.18	0.18	0.03	0.17	0.17	0.04	0.23	0.23	0.06	0.25	0.25
Sat Flow, veh/h	1767	1427	363	1767	1856	1572	1767	1856	1572	1767	3268	297
Grp Volume(v), veh/h	34	0	197	25	122	25	30	266	26	63	230	237
Grp Sat Flow(s),veh/h/ln	1767	0	1790	1767	1856	1572	1767	1856	1572	1767	1763	1802
Q Serve(g_s), s	0.7	0.0	3.6	0.5	2.1	0.5	0.6	4.6	0.5	1.2	4.0	4.0
Cycle Q Clear(g_c), s	0.7	0.0	3.6	0.5	2.1	0.5	0.6	4.6	0.5	1.2	4.0	4.0
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	71	0	317	54	311	263	64	418	354	115	448	458
V/C Ratio(X)	0.48	0.00	0.62	0.46	0.39	0.09	0.47	0.64	0.07	0.55	0.51	0.52
Avail Cap(c_a), veh/h	419	0	1124	370	1113	943	370	1579	1338	567	1697	1735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	13.6	17.1	13.3	12.6	16.9	12.6	10.9	16.2	11.5	11.5
Incr Delay (d2), s/veh	5.0	0.0	2.0	6.0	0.8	0.2	5.3	1.6	0.1	4.0	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.2	0.2	0.7	0.1	0.3	1.5	0.1	0.5	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	0.0	15.6	23.0	14.1	12.8	22.3	14.2	11.0	20.3	12.4	12.4
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		231			172			322			530	
Approach Delay, s/veh		16.6			15.2			14.7			13.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	12.6	5.6	10.8	5.8	13.6	5.9	10.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	30.5	7.5	22.5	7.5	34.5	8.5	21.5
Max Q Clear Time (g_c+I1), s	3.2	6.6	2.5	5.6	2.6	6.0	2.7	4.1
Green Ext Time (p_c), s	0.1	1.4	0.0	0.8	0.0	2.7	0.0	0.5

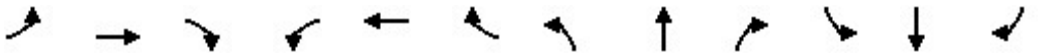
Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	858	69	103	633	41	53	74	65	39	57	81
Future Volume (veh/h)	126	858	69	103	633	41	53	74	65	39	57	81
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	142	964	78	116	711	46	60	83	73	44	64	91
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	186	1313	106	150	1270	82	154	124	109	79	174	147
Arrive On Green	0.11	0.40	0.40	0.09	0.38	0.38	0.09	0.14	0.14	0.04	0.09	0.09
Sat Flow, veh/h	1767	3303	267	1767	3362	217	1767	911	801	1767	1856	1572
Grp Volume(v), veh/h	142	514	528	116	373	384	60	0	156	44	64	91
Grp Sat Flow(s),veh/h/ln	1767	1763	1807	1767	1763	1816	1767	0	1711	1767	1856	1572
Q Serve(g_s), s	4.2	13.3	13.3	3.4	8.9	8.9	1.7	0.0	4.6	1.3	1.7	2.1
Cycle Q Clear(g_c), s	4.2	13.3	13.3	3.4	8.9	8.9	1.7	0.0	4.6	1.3	1.7	2.1
Prop In Lane	1.00		0.15	1.00		0.12	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	186	701	719	150	666	686	154	0	232	79	174	147
V/C Ratio(X)	0.77	0.73	0.73	0.77	0.56	0.56	0.39	0.00	0.67	0.55	0.37	0.62
Avail Cap(c_a), veh/h	499	1104	1132	347	953	982	248	0	685	218	711	603
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	1.00	1.00
Uniform Delay (d), s/veh	23.3	13.7	13.7	24.0	13.1	13.1	23.1	0.0	22.0	25.0	22.8	11.4
Incr Delay (d2), s/veh	6.4	1.5	1.5	8.1	0.7	0.7	1.6	0.0	3.3	5.9	1.3	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	1.8	4.2	4.3	1.6	2.8	2.9	0.7	0.0	1.8	0.6	0.7	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	15.2	15.2	32.0	13.9	13.9	24.7	0.0	25.3	31.0	24.1	15.6
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	B
Approach Vol, veh/h		1184			873			216			199	
Approach Delay, s/veh		16.9			16.3			25.1			21.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	11.8	9.0	25.8	9.2	9.5	10.1	24.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.6	21.4	10.5	33.5	7.5	20.5	15.1	28.9
Max Q Clear Time (g_c+I1), s	3.3	6.6	5.4	15.3	3.7	4.1	6.2	10.9
Green Ext Time (p_c), s	0.0	0.6	0.1	6.0	0.0	0.5	0.2	4.0

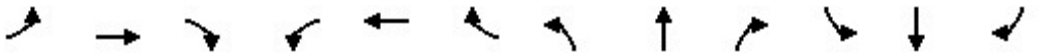
Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	749	38	44	702	63	37	57	46	47	41	96
Future Volume (veh/h)	170	749	38	44	702	63	37	57	46	47	41	96
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	177	780	40	46	731	66	39	59	48	49	43	100
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	223	1022	52	78	842	76	123	127	86	121	73	131
Arrive On Green	0.13	0.58	0.58	0.04	0.50	0.50	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1767	1750	90	1767	1677	151	321	838	567	313	477	859
Grp Volume(v), veh/h	177	0	820	46	0	797	146	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1839	1767	0	1828	1726	0	0	1649	0	0
Q Serve(g_s), s	6.0	0.0	20.6	1.6	0.0	23.7	0.0	0.0	0.0	2.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	20.6	1.6	0.0	23.7	4.7	0.0	0.0	6.7	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.08	0.27		0.33	0.26		0.52
Lane Grp Cap(c), veh/h	223	0	1075	78	0	918	337	0	0	324	0	0
V/C Ratio(X)	0.79	0.00	0.76	0.59	0.00	0.87	0.43	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	376	0	1582	147	0	1335	568	0	0	552	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.1	0.0	9.6	28.8	0.0	13.5	24.1	0.0	0.0	24.9	0.0	0.0
Incr Delay (d2), s/veh	6.2	0.0	1.3	6.9	0.0	4.4	0.9	0.0	0.0	1.7	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	2.6	0.0	5.6	0.8	0.0	8.1	1.9	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	0.0	10.9	35.7	0.0	18.0	25.0	0.0	0.0	26.6	0.0	0.0
LnGrp LOS	C	A	B	D	A	B	C	A	A	C	A	A
Approach Vol, veh/h		997			843			146			192	
Approach Delay, s/veh		14.7			18.9			25.0			26.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.9	7.2	40.4		13.9	12.3	35.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	5.1	52.9		18.5	13.1	44.9				
Max Q Clear Time (g_c+I1), s		6.7	3.6	22.6		8.7	8.0	25.7				
Green Ext Time (p_c), s		0.5	0.0	6.2		0.7	0.2	5.2				

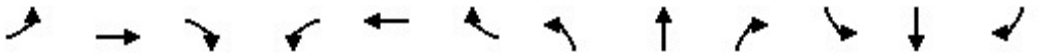
Intersection Summary												
HCM 6th Ctrl Delay			18.1									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	243	42	46	237	70	80	532	114	75	424	56
Future Volume (veh/h)	64	243	42	46	237	70	80	532	114	75	424	56
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	70	264	46	50	258	76	87	578	124	82	461	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	329	57	83	377	320	113	700	593	110	1176	155
Arrive On Green	0.06	0.21	0.21	0.05	0.20	0.20	0.06	0.38	0.38	0.06	0.38	0.38
Sat Flow, veh/h	1767	1539	268	1767	1856	1572	1767	1856	1572	1767	3132	412
Grp Volume(v), veh/h	70	0	310	50	258	76	87	578	124	82	259	263
Grp Sat Flow(s),veh/h/ln	1767	0	1807	1767	1856	1572	1767	1856	1572	1767	1763	1781
Q Serve(g_s), s	2.3	0.0	9.8	1.7	7.7	2.4	2.9	16.9	2.2	2.7	6.4	6.5
Cycle Q Clear(g_c), s	2.3	0.0	9.8	1.7	7.7	2.4	2.9	16.9	2.2	2.7	6.4	6.5
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	101	0	386	83	377	320	113	700	593	110	662	669
V/C Ratio(X)	0.69	0.00	0.80	0.60	0.68	0.24	0.77	0.83	0.21	0.75	0.39	0.39
Avail Cap(c_a), veh/h	191	0	618	162	603	511	298	1191	1009	221	1055	1066
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	22.4	28.0	22.1	20.0	27.7	16.9	5.9	27.7	13.7	13.7
Incr Delay (d2), s/veh	8.1	0.0	4.0	6.8	2.2	0.4	10.6	2.6	0.2	9.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	4.0	0.8	3.2	0.8	1.4	6.2	0.9	1.4	2.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.0	26.4	34.8	24.3	20.4	38.2	19.4	6.1	37.3	14.1	14.1
LnGrp LOS	D	A	C	C	C	C	D	B	A	D	B	B
Approach Vol, veh/h		380			384			789			604	
Approach Delay, s/veh		28.1			24.9			19.4			17.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	27.1	7.3	17.3	8.3	27.0	7.9	16.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	38.5	5.5	20.5	10.1	35.9	6.5	19.5
Max Q Clear Time (g_c+I1), s	4.7	18.9	3.7	11.8	4.9	8.5	4.3	9.7
Green Ext Time (p_c), s	0.0	3.7	0.0	1.0	0.1	3.0	0.0	1.1

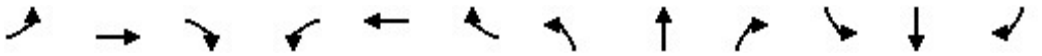
Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	617	52	89	721	32	107	77	114	53	91	63
Future Volume (veh/h)	43	617	52	89	721	32	107	77	114	53	91	63
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	46	663	56	96	775	34	115	83	123	57	98	68
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	85	1003	85	134	1145	50	150	121	180	99	279	237
Arrive On Green	0.05	0.30	0.30	0.08	0.33	0.33	0.08	0.18	0.18	0.06	0.15	0.15
Sat Flow, veh/h	1767	3291	278	1767	3440	151	1767	675	1000	1767	1856	1572
Grp Volume(v), veh/h	46	355	364	96	397	412	115	0	206	57	98	68
Grp Sat Flow(s),veh/h/ln	1767	1763	1806	1767	1763	1828	1767	0	1675	1767	1856	1572
Q Serve(g_s), s	1.2	8.2	8.2	2.5	9.1	9.1	3.0	0.0	5.4	1.5	2.2	1.8
Cycle Q Clear(g_c), s	1.2	8.2	8.2	2.5	9.1	9.1	3.0	0.0	5.4	1.5	2.2	1.8
Prop In Lane	1.00		0.15	1.00		0.08	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	85	537	550	134	587	609	150	0	301	99	279	237
V/C Ratio(X)	0.54	0.66	0.66	0.71	0.68	0.68	0.77	0.00	0.68	0.58	0.35	0.29
Avail Cap(c_a), veh/h	256	996	1020	433	1172	1216	478	0	946	282	842	714
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	1.00	1.00
Uniform Delay (d), s/veh	21.8	14.2	14.2	21.2	13.5	13.5	21.0	0.0	18.0	21.6	17.9	17.7
Incr Delay (d2), s/veh	5.3	1.4	1.4	6.9	1.4	1.3	7.9	0.0	2.8	5.2	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.7	2.7	1.1	2.9	3.0	1.4	0.0	2.0	0.7	0.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	15.6	15.6	28.0	14.9	14.8	28.9	0.0	20.8	26.8	18.6	18.4
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	B	B
Approach Vol, veh/h		765			905			321			223	
Approach Delay, s/veh		16.3			16.2			23.7			20.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	12.9	8.1	18.8	8.5	11.6	6.8	20.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	26.5	11.5	26.5	12.7	21.3	6.8	31.2
Max Q Clear Time (g_c+I1), s	3.5	7.4	4.5	10.2	5.0	4.2	3.2	11.1
Green Ext Time (p_c), s	0.0	1.0	0.1	3.7	0.1	0.6	0.0	4.5

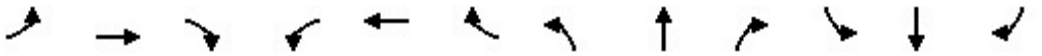
Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	590	47	43	559	45	54	175	47	85	141	161
Future Volume (veh/h)	87	590	47	43	559	45	54	175	47	85	141	161
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	100	678	54	49	643	52	62	201	54	98	162	185
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	766	61	76	715	58	123	347	85	149	206	210
Arrive On Green	0.07	0.45	0.45	0.04	0.42	0.42	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1767	1696	135	1767	1694	137	201	1075	262	276	637	650
Grp Volume(v), veh/h	100	0	732	49	0	695	317	0	0	445	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1831	1767	0	1831	1538	0	0	1563	0	0
Q Serve(g_s), s	4.1	0.0	27.0	2.0	0.0	26.1	0.0	0.0	0.0	7.6	0.0	0.0
Cycle Q Clear(g_c), s	4.1	0.0	27.0	2.0	0.0	26.1	12.2	0.0	0.0	19.7	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.07	0.20		0.17	0.22		0.42
Lane Grp Cap(c), veh/h	128	0	827	76	0	773	555	0	0	564	0	0
V/C Ratio(X)	0.78	0.00	0.89	0.65	0.00	0.90	0.57	0.00	0.00	0.79	0.00	0.00
Avail Cap(c_a), veh/h	163	0	980	122	0	937	725	0	0	730	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.7	0.0	18.5	34.8	0.0	19.9	20.7	0.0	0.0	23.4	0.0	0.0
Incr Delay (d2), s/veh	17.1	0.0	8.7	8.9	0.0	10.1	0.9	0.0	0.0	4.4	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	2.2	0.0	11.4	1.0	0.0	11.4	4.3	0.0	0.0	7.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	0.0	27.2	43.6	0.0	30.0	21.7	0.0	0.0	27.8	0.0	0.0
LnGrp LOS	D	A	C	D	A	C	C	A	A	C	A	A
Approach Vol, veh/h		832			744			317			445	
Approach Delay, s/veh		30.1			30.9			21.7			27.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.3	7.7	37.8		28.3	9.8	35.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		31.9	5.1	39.5		31.9	6.8	37.8				
Max Q Clear Time (g_c+I1), s		14.2	4.0	29.0		21.7	6.1	28.1				
Green Ext Time (p_c), s		1.8	0.0	3.4		2.1	0.0	3.1				

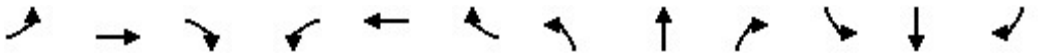
Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	151	38	25	117	22	28	216	26	54	312	31
Future Volume (veh/h)	31	151	38	25	117	22	28	216	26	54	312	31
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	36	174	44	29	134	25	32	248	30	62	359	36
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	74	273	69	62	342	289	67	395	335	113	774	77
Arrive On Green	0.04	0.19	0.19	0.03	0.18	0.18	0.04	0.21	0.21	0.06	0.24	0.24
Sat Flow, veh/h	1767	1429	361	1767	1856	1572	1767	1856	1572	1767	3238	323
Grp Volume(v), veh/h	36	0	218	29	134	25	32	248	30	62	194	201
Grp Sat Flow(s),veh/h/ln	1767	0	1790	1767	1856	1572	1767	1856	1572	1767	1763	1797
Q Serve(g_s), s	0.7	0.0	4.1	0.6	2.3	0.5	0.6	4.4	0.6	1.2	3.4	3.5
Cycle Q Clear(g_c), s	0.7	0.0	4.1	0.6	2.3	0.5	0.6	4.4	0.6	1.2	3.4	3.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	74	0	342	62	342	289	67	395	335	113	421	430
V/C Ratio(X)	0.49	0.00	0.64	0.47	0.39	0.09	0.48	0.63	0.09	0.55	0.46	0.47
Avail Cap(c_a), veh/h	415	0	1162	366	1153	977	415	1511	1281	561	1582	1613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	13.5	17.1	13.0	12.3	17.1	12.9	11.4	16.4	11.8	11.8
Incr Delay (d2), s/veh	4.9	0.0	2.0	5.5	0.7	0.1	5.2	1.6	0.1	4.1	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.3	0.3	0.8	0.1	0.3	1.4	0.1	0.5	1.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	0.0	15.5	22.6	13.7	12.4	22.2	14.6	11.5	20.5	12.6	12.6
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		254			188			310			457	
Approach Delay, s/veh		16.4			14.9			15.1			13.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	12.2	5.8	11.4	5.9	13.2	6.0	11.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	29.5	7.5	23.5	8.5	32.5	8.5	22.5
Max Q Clear Time (g_c+I1), s	3.2	6.4	2.6	6.1	2.6	5.5	2.7	4.3
Green Ext Time (p_c), s	0.1	1.3	0.0	1.0	0.0	2.2	0.0	0.6

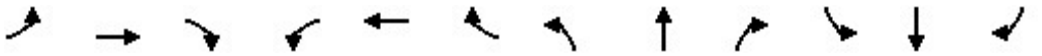
Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	868	77	113	646	45	58	74	72	43	59	36
Future Volume (veh/h)	47	868	77	113	646	45	58	74	72	43	59	36
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	975	87	127	726	51	65	83	81	48	66	40
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	89	1304	116	165	1475	104	101	120	117	83	239	203
Arrive On Green	0.05	0.40	0.40	0.09	0.44	0.44	0.06	0.14	0.14	0.05	0.13	0.13
Sat Flow, veh/h	1767	3274	292	1767	3341	235	1767	862	842	1767	1856	1572
Grp Volume(v), veh/h	53	525	537	127	383	394	65	0	164	48	66	40
Grp Sat Flow(s),veh/h/ln	1767	1763	1803	1767	1763	1813	1767	0	1704	1767	1856	1572
Q Serve(g_s), s	1.6	14.2	14.2	3.9	8.6	8.7	2.0	0.0	5.1	1.5	1.8	1.3
Cycle Q Clear(g_c), s	1.6	14.2	14.2	3.9	8.6	8.7	2.0	0.0	5.1	1.5	1.8	1.3
Prop In Lane	1.00		0.16	1.00		0.13	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	89	702	718	165	778	800	101	0	237	83	239	203
V/C Ratio(X)	0.60	0.75	0.75	0.77	0.49	0.49	0.65	0.00	0.69	0.58	0.28	0.20
Avail Cap(c_a), veh/h	225	1058	1082	364	1197	1232	238	0	620	212	648	549
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	1.00	1.00
Uniform Delay (d), s/veh	25.9	14.4	14.4	24.7	11.1	11.1	25.8	0.0	22.9	26.0	21.9	21.7
Incr Delay (d2), s/veh	6.3	1.6	1.6	7.4	0.5	0.5	6.8	0.0	3.6	6.2	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.6	4.7	1.8	2.6	2.7	0.9	0.0	2.1	0.7	0.7	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	16.0	16.0	32.1	11.6	11.6	32.6	0.0	26.5	32.2	22.6	22.2
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1115			904			229			154	
Approach Delay, s/veh		16.8			14.5			28.2			25.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	12.2	9.7	26.7	7.7	11.7	7.3	29.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.7	20.3	11.5	33.5	7.5	19.5	7.1	37.9
Max Q Clear Time (g_c+I1), s	3.5	7.1	5.9	16.2	4.0	3.8	3.6	10.7
Green Ext Time (p_c), s	0.0	0.6	0.1	6.0	0.0	0.3	0.0	4.7

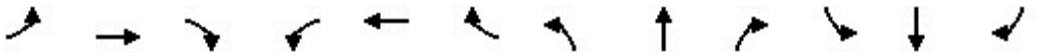
Intersection Summary	
HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	750	37	48	668	65	32	62	50	49	45	98
Future Volume (veh/h)	174	750	37	48	668	65	32	62	50	49	45	98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	181	781	39	50	696	68	33	65	52	51	47	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	229	995	50	83	808	79	113	140	95	125	79	134
Arrive On Green	0.13	0.57	0.57	0.05	0.49	0.49	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	1752	88	1767	1664	163	248	882	600	311	495	839
Grp Volume(v), veh/h	181	0	820	50	0	764	150	0	0	200	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1840	1767	0	1826	1730	0	0	1646	0	0
Q Serve(g_s), s	5.9	0.0	20.8	1.7	0.0	22.1	0.0	0.0	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	5.9	0.0	20.8	1.7	0.0	22.1	4.6	0.0	0.0	6.7	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.09	0.22		0.35	0.25		0.51
Lane Grp Cap(c), veh/h	229	0	1045	83	0	887	349	0	0	337	0	0
V/C Ratio(X)	0.79	0.00	0.78	0.60	0.00	0.86	0.43	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	399	0	1591	157	0	1328	613	0	0	593	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.2	0.0	10.1	27.9	0.0	13.6	23.1	0.0	0.0	23.9	0.0	0.0
Incr Delay (d2), s/veh	6.0	0.0	1.5	6.7	0.0	4.0	0.8	0.0	0.0	1.7	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	2.6	0.0	5.8	0.8	0.0	7.5	1.9	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	0.0	11.6	34.7	0.0	17.6	24.0	0.0	0.0	25.6	0.0	0.0
LnGrp LOS	C	A	B	C	A	B	C	A	A	C	A	A
Approach Vol, veh/h		1001			814			150			200	
Approach Delay, s/veh		15.1			18.6			24.0			25.6	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.0	7.3	38.5		14.0	12.2	33.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5	5.3	51.7		19.5	13.5	43.5				
Max Q Clear Time (g_c+I1), s		6.6	3.7	22.8		8.7	7.9	24.1				
Green Ext Time (p_c), s		0.6	0.0	6.1		0.8	0.2	4.9				

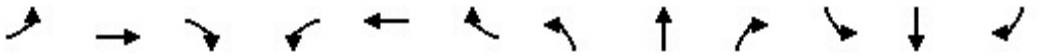
Intersection Summary												
HCM 6th Ctrl Delay			18.0									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	268	46	51	261	69	88	477	126	78	400	57
Future Volume (veh/h)	63	268	46	51	261	69	88	477	126	78	400	57
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	68	291	50	55	284	75	96	518	137	85	435	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	361	62	89	422	358	124	640	542	113	1049	149
Arrive On Green	0.06	0.23	0.23	0.05	0.23	0.23	0.07	0.34	0.34	0.06	0.34	0.34
Sat Flow, veh/h	1767	1543	265	1767	1856	1572	1767	1856	1572	1767	3100	439
Grp Volume(v), veh/h	68	0	341	55	284	75	96	518	137	85	246	251
Grp Sat Flow(s),veh/h/ln	1767	0	1808	1767	1856	1572	1767	1856	1572	1767	1763	1776
Q Serve(g_s), s	2.2	0.0	10.4	1.8	8.2	2.3	3.1	14.9	2.5	2.8	6.3	6.4
Cycle Q Clear(g_c), s	2.2	0.0	10.4	1.8	8.2	2.3	3.1	14.9	2.5	2.8	6.3	6.4
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	101	0	423	89	422	358	124	640	542	113	596	601
V/C Ratio(X)	0.67	0.00	0.81	0.62	0.67	0.21	0.77	0.81	0.25	0.75	0.41	0.42
Avail Cap(c_a), veh/h	226	0	694	166	649	550	319	1155	979	226	1004	1012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	21.2	27.3	20.7	18.4	26.8	17.5	6.5	27.0	14.9	14.9
Incr Delay (d2), s/veh	7.6	0.0	3.7	6.8	1.9	0.3	9.7	2.5	0.2	9.6	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	4.2	0.9	3.3	0.8	1.5	5.6	1.1	1.4	2.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.7	0.0	24.9	34.0	22.5	18.7	36.5	20.0	6.8	36.6	15.4	15.4
LnGrp LOS	C	A	C	C	C	B	D	B	A	D	B	B
Approach Vol, veh/h		409			414			751			582	
Approach Delay, s/veh		26.5			23.4			19.7			18.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.2	24.7	7.5	18.2	8.6	24.3	7.8	17.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	36.5	5.5	22.5	10.6	33.4	7.5	20.5
Max Q Clear Time (g_c+I1), s	4.8	16.9	3.8	12.4	5.1	8.4	4.2	10.2
Green Ext Time (p_c), s	0.0	3.3	0.0	1.3	0.1	2.8	0.0	1.3

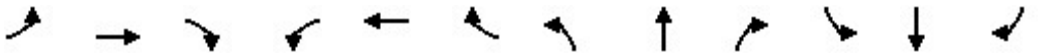
Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	631	52	89	761	32	107	79	114	53	97	137
Future Volume (veh/h)	68	631	52	89	761	32	107	79	114	53	97	137
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	73	678	56	96	818	34	115	85	123	57	104	147
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	113	1086	90	131	1171	49	150	121	176	97	273	231
Arrive On Green	0.06	0.33	0.33	0.07	0.34	0.34	0.08	0.18	0.18	0.05	0.15	0.15
Sat Flow, veh/h	1767	3297	272	1767	3449	143	1767	685	992	1767	1856	1572
Grp Volume(v), veh/h	73	362	372	96	418	434	115	0	208	57	104	147
Grp Sat Flow(s),veh/h/ln	1767	1763	1807	1767	1763	1830	1767	0	1677	1767	1856	1572
Q Serve(g_s), s	2.0	8.6	8.6	2.6	10.1	10.1	3.1	0.0	5.8	1.6	2.5	3.1
Cycle Q Clear(g_c), s	2.0	8.6	8.6	2.6	10.1	10.1	3.1	0.0	5.8	1.6	2.5	3.1
Prop In Lane	1.00		0.15	1.00		0.08	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	113	581	595	131	598	621	150	0	297	97	273	231
V/C Ratio(X)	0.64	0.62	0.62	0.73	0.70	0.70	0.77	0.00	0.70	0.59	0.38	0.63
Avail Cap(c_a), veh/h	340	1031	1057	383	1074	1115	454	0	852	261	740	627
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	1.00	1.00
Uniform Delay (d), s/veh	22.6	14.0	14.0	22.4	14.1	14.1	22.1	0.0	19.1	22.8	19.0	10.0
Incr Delay (d2), s/veh	6.0	1.1	1.1	7.7	1.5	1.4	7.9	0.0	3.0	5.5	0.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.8	2.8	1.2	3.3	3.4	1.5	0.0	2.1	0.7	1.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	15.1	15.1	30.1	15.6	15.6	30.0	0.0	22.1	28.3	19.9	12.9
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	B	B
Approach Vol, veh/h		807			948			323			308	
Approach Delay, s/veh		16.3			17.1			24.9			18.1	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	13.3	8.2	20.8	8.7	11.8	7.7	21.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.3	25.1	10.7	28.9	12.7	19.7	9.5	30.1
Max Q Clear Time (g_c+I1), s	3.6	7.8	4.6	10.6	5.1	5.1	4.0	12.1
Green Ext Time (p_c), s	0.0	1.0	0.1	3.9	0.1	0.8	0.1	4.6

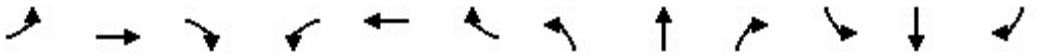
Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	658	53	43	582	45	56	175	47	85	141	161
Future Volume (veh/h)	87	658	53	43	582	45	56	175	47	85	141	161
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	100	756	61	49	669	52	64	201	54	98	162	185
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	127	804	65	72	754	59	117	327	80	141	197	202
Arrive On Green	0.07	0.47	0.47	0.04	0.44	0.44	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1767	1694	137	1767	1700	132	201	1019	248	272	615	631
Grp Volume(v), veh/h	100	0	817	49	0	721	319	0	0	445	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1831	1767	0	1832	1468	0	0	1519	0	0
Q Serve(g_s), s	4.6	0.0	34.9	2.3	0.0	29.7	0.0	0.0	0.0	8.6	0.0	0.0
Cycle Q Clear(g_c), s	4.6	0.0	34.9	2.3	0.0	29.7	14.6	0.0	0.0	23.2	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.07	0.20		0.17	0.22		0.42
Lane Grp Cap(c), veh/h	127	0	868	72	0	812	523	0	0	540	0	0
V/C Ratio(X)	0.79	0.00	0.94	0.68	0.00	0.89	0.61	0.00	0.00	0.82	0.00	0.00
Avail Cap(c_a), veh/h	140	0	923	109	0	892	589	0	0	605	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.6	0.0	20.5	38.9	0.0	21.0	23.5	0.0	0.0	26.7	0.0	0.0
Incr Delay (d2), s/veh	23.5	0.0	16.6	10.5	0.0	10.2	1.5	0.0	0.0	8.2	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	2.7	0.0	16.5	1.1	0.0	13.2	5.2	0.0	0.0	9.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	0.0	37.1	49.5	0.0	31.2	24.9	0.0	0.0	34.9	0.0	0.0
LnGrp LOS	E	A	D	D	A	C	C	A	A	C	A	A
Approach Vol, veh/h		917			770			319			445	
Approach Delay, s/veh		39.8			32.4			24.9			34.9	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	30.9	7.9	43.5	30.9	10.4	41.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	29.9	5.1	41.5	29.9	6.5	40.1
Max Q Clear Time (g_c+I1), s	16.6	4.3	36.9	25.2	6.6	31.7
Green Ext Time (p_c), s	1.6	0.0	2.2	1.2	0.0	2.9

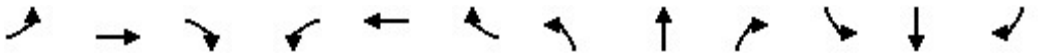
Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	151	38	25	117	24	28	242	26	60	389	37
Future Volume (veh/h)	33	151	38	25	117	24	28	242	26	60	389	37
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	38	174	44	29	134	28	32	278	30	69	447	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	77	269	68	61	333	282	67	425	360	121	844	81
Arrive On Green	0.04	0.19	0.19	0.03	0.18	0.18	0.04	0.23	0.23	0.07	0.26	0.26
Sat Flow, veh/h	1767	1429	361	1767	1856	1572	1767	1856	1572	1767	3251	311
Grp Volume(v), veh/h	38	0	218	29	134	28	32	278	30	69	242	248
Grp Sat Flow(s),veh/h/ln	1767	0	1790	1767	1856	1572	1767	1856	1572	1767	1763	1799
Q Serve(g_s), s	0.8	0.0	4.2	0.6	2.4	0.6	0.7	5.1	0.6	1.4	4.4	4.5
Cycle Q Clear(g_c), s	0.8	0.0	4.2	0.6	2.4	0.6	0.7	5.1	0.6	1.4	4.4	4.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	77	0	337	61	333	282	67	425	360	121	458	467
V/C Ratio(X)	0.49	0.00	0.65	0.47	0.40	0.10	0.48	0.65	0.08	0.57	0.53	0.53
Avail Cap(c_a), veh/h	353	0	1073	353	1112	942	353	1507	1277	541	1620	1654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	14.1	17.8	13.6	12.9	17.7	13.1	11.4	17.0	11.9	11.9
Incr Delay (d2), s/veh	4.8	0.0	2.1	5.5	0.8	0.2	5.2	1.7	0.1	4.2	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.4	0.3	0.8	0.2	0.3	1.7	0.2	0.6	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	0.0	16.2	23.3	14.4	13.0	22.9	14.8	11.5	21.2	12.9	12.9
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		256			191			340			559	
Approach Delay, s/veh		17.1			15.6			15.3			13.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	13.1	5.8	11.6	5.9	14.2	6.1	11.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	30.5	7.5	22.5	7.5	34.5	7.5	22.5
Max Q Clear Time (g_c+I1), s	3.4	7.1	2.6	6.2	2.7	6.5	2.8	4.4
Green Ext Time (p_c), s	0.1	1.5	0.0	0.9	0.0	2.8	0.0	0.6

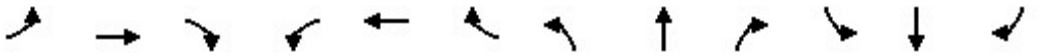
Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	913	77	113	672	45	58	81	72	43	63	85
Future Volume (veh/h)	130	913	77	113	672	45	58	81	72	43	63	85
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	146	1026	87	127	755	51	65	91	81	48	71	96
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	188	1342	114	164	1321	89	99	129	115	82	247	209
Arrive On Green	0.11	0.41	0.41	0.09	0.39	0.39	0.06	0.14	0.14	0.05	0.13	0.13
Sat Flow, veh/h	1767	3289	279	1767	3351	226	1767	905	806	1767	1856	1572
Grp Volume(v), veh/h	146	550	563	127	397	409	65	0	172	48	71	96
Grp Sat Flow(s),veh/h/ln	1767	1763	1805	1767	1763	1815	1767	0	1711	1767	1856	1572
Q Serve(g_s), s	4.7	15.6	15.6	4.1	10.2	10.2	2.1	0.0	5.6	1.5	2.0	3.3
Cycle Q Clear(g_c), s	4.7	15.6	15.6	4.1	10.2	10.2	2.1	0.0	5.6	1.5	2.0	3.3
Prop In Lane	1.00		0.15	1.00		0.12	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	188	719	737	164	695	716	99	0	244	82	247	209
V/C Ratio(X)	0.78	0.76	0.76	0.77	0.57	0.57	0.66	0.00	0.70	0.59	0.29	0.46
Avail Cap(c_a), veh/h	381	1017	1042	320	957	985	198	0	663	167	687	582
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	1.00	1.00
Uniform Delay (d), s/veh	25.3	14.8	14.8	25.7	13.7	13.7	26.9	0.0	23.7	27.1	22.7	23.2
Incr Delay (d2), s/veh	6.7	2.2	2.2	7.6	0.7	0.7	7.2	0.0	3.7	6.5	0.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.2	5.3	1.9	3.3	3.4	1.0	0.0	2.3	0.7	0.8	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	17.0	17.0	33.3	14.5	14.5	34.1	0.0	27.4	33.6	23.3	24.8
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1259			933			237			215	
Approach Delay, s/veh		18.7			17.0			29.2			26.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.2	12.8	9.9	28.2	7.7	12.2	10.7	27.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	22.5	10.5	33.5	6.5	21.5	12.5	31.5
Max Q Clear Time (g_c+I1), s	3.5	7.6	6.1	17.6	4.1	5.3	6.7	12.2
Green Ext Time (p_c), s	0.0	0.7	0.1	6.1	0.0	0.5	0.2	4.4

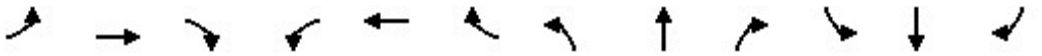
Intersection Summary	
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	794	41	48	744	65	39	62	50	49	45	98
Future Volume (veh/h)	174	794	41	48	744	65	39	62	50	49	45	98
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	181	827	43	50	775	68	41	65	52	51	47	102
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	224	1048	54	80	870	76	115	128	86	117	76	130
Arrive On Green	0.13	0.60	0.60	0.05	0.52	0.52	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1767	1748	91	1767	1681	148	310	832	560	320	495	849
Grp Volume(v), veh/h	181	0	870	50	0	843	158	0	0	200	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1839	1767	0	1829	1703	0	0	1664	0	0
Q Serve(g_s), s	6.7	0.0	24.1	1.9	0.0	27.6	0.0	0.0	0.0	1.9	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	24.1	1.9	0.0	27.6	5.6	0.0	0.0	7.5	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.08	0.26		0.33	0.25		0.51
Lane Grp Cap(c), veh/h	224	0	1102	80	0	947	329	0	0	323	0	0
V/C Ratio(X)	0.81	0.00	0.79	0.63	0.00	0.89	0.48	0.00	0.00	0.62	0.00	0.00
Avail Cap(c_a), veh/h	304	0	1400	135	0	1217	568	0	0	558	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.4	0.0	10.2	31.4	0.0	14.4	26.3	0.0	0.0	27.1	0.0	0.0
Incr Delay (d2), s/veh	10.9	0.0	2.4	7.8	0.0	7.0	1.1	0.0	0.0	1.9	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	3.2	0.0	7.1	0.9	0.0	10.3	2.3	0.0	0.0	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	0.0	12.6	39.1	0.0	21.4	27.4	0.0	0.0	29.0	0.0	0.0
LnGrp LOS	D	A	B	D	A	C	C	A	A	C	A	A
Approach Vol, veh/h		1051			893			158			200	
Approach Delay, s/veh		17.2			22.4			27.4			29.0	
Approach LOS		B			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.8	7.5	44.6		14.8	13.0	39.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		20.5	5.1	50.9		20.5	11.5	44.5				
Max Q Clear Time (g_c+I1), s		7.6	3.9	26.1		9.5	8.7	29.6				
Green Ext Time (p_c), s		0.6	0.0	6.5		0.8	0.1	5.0				

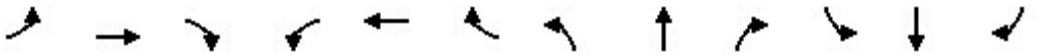
Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	268	46	51	261	76	88	563	126	82	450	61
Future Volume (veh/h)	70	268	46	51	261	76	88	563	126	82	450	61
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	291	50	55	284	83	96	612	137	89	489	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	348	60	85	402	341	124	721	611	114	1197	161
Arrive On Green	0.06	0.23	0.23	0.05	0.22	0.22	0.07	0.39	0.39	0.06	0.38	0.38
Sat Flow, veh/h	1767	1543	265	1767	1856	1572	1767	1856	1572	1767	3123	420
Grp Volume(v), veh/h	76	0	341	55	284	83	96	612	137	89	275	280
Grp Sat Flow(s),veh/h/ln	1767	0	1808	1767	1856	1572	1767	1856	1572	1767	1763	1780
Q Serve(g_s), s	2.8	0.0	11.9	2.0	9.3	2.1	3.5	19.9	3.9	3.3	7.5	7.6
Cycle Q Clear(g_c), s	2.8	0.0	11.9	2.0	9.3	2.1	3.5	19.9	3.9	3.3	7.5	7.6
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	101	0	408	85	402	341	124	721	611	114	675	682
V/C Ratio(X)	0.76	0.00	0.84	0.65	0.71	0.24	0.77	0.85	0.22	0.78	0.41	0.41
Avail Cap(c_a), veh/h	179	0	572	139	545	462	284	1080	915	201	943	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	24.4	30.9	23.9	11.8	30.2	18.4	13.5	30.4	14.9	14.9
Incr Delay (d2), s/veh	10.8	0.0	7.5	8.0	2.6	0.4	9.7	4.2	0.2	10.8	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	5.3	1.0	4.0	1.0	1.7	7.8	1.2	1.6	2.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	0.0	31.8	38.8	26.5	12.2	39.9	22.6	13.7	41.2	15.3	15.3
LnGrp LOS	D	A	C	D	C	B	D	C	B	D	B	B
Approach Vol, veh/h		417			422			845			644	
Approach Delay, s/veh		33.6			25.3			23.1			18.9	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	30.2	7.7	19.4	9.1	29.8	8.3	18.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	38.4	5.2	20.9	10.6	35.3	6.7	19.4
Max Q Clear Time (g_c+I1), s	5.3	21.9	4.0	13.9	5.5	9.6	4.8	11.3
Green Ext Time (p_c), s	0.0	3.8	0.0	1.0	0.1	3.2	0.0	1.1

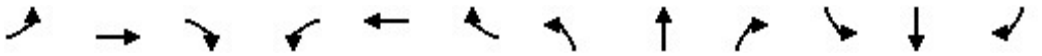
Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	665	57	97	772	35	118	85	125	58	101	70
Future Volume (veh/h)	47	665	57	97	772	35	118	85	125	58	101	70
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	51	715	61	104	830	38	127	91	134	62	109	75
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	90	1056	90	135	1191	55	166	126	186	102	278	236
Arrive On Green	0.05	0.32	0.32	0.08	0.35	0.35	0.09	0.19	0.19	0.06	0.15	0.15
Sat Flow, veh/h	1767	3288	280	1767	3433	157	1767	678	998	1767	1856	1572
Grp Volume(v), veh/h	51	383	393	104	426	442	127	0	225	62	109	75
Grp Sat Flow(s),veh/h/ln	1767	1763	1805	1767	1763	1827	1767	0	1676	1767	1856	1572
Q Serve(g_s), s	1.4	9.5	9.5	2.9	10.5	10.5	3.5	0.0	6.3	1.7	2.7	2.1
Cycle Q Clear(g_c), s	1.4	9.5	9.5	2.9	10.5	10.5	3.5	0.0	6.3	1.7	2.7	2.1
Prop In Lane	1.00		0.16	1.00		0.09	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	90	566	580	135	611	634	166	0	312	102	278	236
V/C Ratio(X)	0.57	0.68	0.68	0.77	0.70	0.70	0.76	0.00	0.72	0.61	0.39	0.32
Avail Cap(c_a), veh/h	246	979	1003	426	1158	1201	468	0	771	313	691	586
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	1.00	1.00
Uniform Delay (d), s/veh	23.3	14.8	14.8	22.8	14.1	14.1	22.2	0.0	19.2	23.1	19.3	19.0
Incr Delay (d2), s/veh	5.6	1.4	1.4	8.9	1.4	1.4	7.1	0.0	3.1	5.8	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	3.2	1.4	3.3	3.5	1.6	0.0	2.3	0.8	1.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	16.2	16.2	31.6	15.6	15.5	29.3	0.0	22.3	28.9	20.2	19.8
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	B
Approach Vol, veh/h		827			972			352			246	
Approach Delay, s/veh		17.0			17.3			24.9			22.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	13.9	8.3	20.6	9.2	12.0	7.0	21.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.9	23.1	12.1	27.9	13.3	18.7	7.0	33.0
Max Q Clear Time (g_c+I1), s	3.7	8.3	4.9	11.5	5.5	4.7	3.4	12.5
Green Ext Time (p_c), s	0.0	1.0	0.1	4.0	0.2	0.6	0.0	5.0

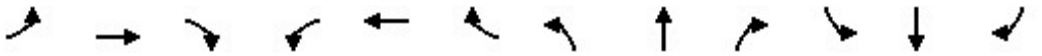
Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	636	51	47	597	49	59	193	52	90	155	166
Future Volume (veh/h)	92	636	51	47	597	49	59	193	52	90	155	166
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	100	691	55	51	649	53	64	210	57	98	168	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	128	767	61	77	716	59	122	346	85	147	211	203
Arrive On Green	0.07	0.45	0.45	0.04	0.42	0.42	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1767	1696	135	1767	1692	138	199	1061	262	271	648	622
Grp Volume(v), veh/h	100	0	746	51	0	702	331	0	0	446	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1831	1767	0	1831	1522	0	0	1541	0	0
Q Serve(g_s), s	4.2	0.0	28.5	2.1	0.0	27.1	0.0	0.0	0.0	7.3	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	28.5	2.1	0.0	27.1	13.4	0.0	0.0	20.7	0.0	0.0
Prop In Lane	1.00		0.07	1.00		0.08	0.19		0.17	0.22		0.40
Lane Grp Cap(c), veh/h	128	0	828	77	0	775	553	0	0	561	0	0
V/C Ratio(X)	0.78	0.00	0.90	0.66	0.00	0.91	0.60	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	159	0	957	119	0	915	703	0	0	706	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	34.5	0.0	19.2	35.6	0.0	20.4	21.3	0.0	0.0	23.9	0.0	0.0
Incr Delay (d2), s/veh	18.1	0.0	10.5	9.4	0.0	11.2	1.0	0.0	0.0	5.0	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	2.3	0.0	12.4	1.1	0.0	12.2	4.7	0.0	0.0	7.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.6	0.0	29.7	45.0	0.0	31.6	22.4	0.0	0.0	28.9	0.0	0.0
LnGrp LOS	D	A	C	D	A	C	C	A	A	C	A	A
Approach Vol, veh/h		846			753			331			446	
Approach Delay, s/veh		32.4			32.5			22.4			28.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		29.2	7.8	38.7		29.2	10.0	36.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		31.9	5.1	39.5		31.9	6.8	37.8				
Max Q Clear Time (g_c+I1), s		15.4	4.1	30.5		22.7	6.2	29.1				
Green Ext Time (p_c), s		1.8	0.0	3.2		2.0	0.0	2.9				

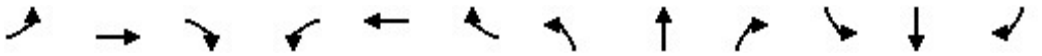
Intersection Summary												
HCM 6th Ctrl Delay			30.4									
HCM 6th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	167	42	27	129	25	31	229	29	59	330	33
Future Volume (veh/h)	34	167	42	27	129	25	31	229	29	59	330	33
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	37	182	46	29	140	27	34	249	32	64	359	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	76	282	71	62	351	297	71	395	334	115	771	77
Arrive On Green	0.04	0.20	0.20	0.03	0.19	0.19	0.04	0.21	0.21	0.07	0.24	0.24
Sat Flow, veh/h	1767	1429	361	1767	1856	1572	1767	1856	1572	1767	3238	323
Grp Volume(v), veh/h	37	0	228	29	140	27	34	249	32	64	194	201
Grp Sat Flow(s),veh/h/ln	1767	0	1791	1767	1856	1572	1767	1856	1572	1767	1763	1797
Q Serve(g_s), s	0.8	0.0	4.3	0.6	2.4	0.5	0.7	4.5	0.6	1.3	3.5	3.5
Cycle Q Clear(g_c), s	0.8	0.0	4.3	0.6	2.4	0.5	0.7	4.5	0.6	1.3	3.5	3.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	76	0	353	62	351	297	71	395	334	115	420	428
V/C Ratio(X)	0.49	0.00	0.65	0.47	0.40	0.09	0.48	0.63	0.10	0.55	0.46	0.47
Avail Cap(c_a), veh/h	409	0	1146	361	1137	964	361	1491	1263	553	1608	1640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	13.6	17.4	13.1	12.3	17.3	13.1	11.6	16.6	12.0	12.0
Incr Delay (d2), s/veh	4.8	0.0	2.0	5.5	0.7	0.1	5.0	1.7	0.1	4.1	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.4	0.3	0.8	0.1	0.3	1.5	0.2	0.5	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	0.0	15.6	22.9	13.8	12.4	22.3	14.8	11.7	20.8	12.8	12.8
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		265			196			315			459	
Approach Delay, s/veh		16.5			14.9			15.3			13.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	12.3	5.8	11.7	6.0	13.2	6.1	11.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	29.5	7.5	23.5	7.5	33.5	8.5	22.5
Max Q Clear Time (g_c+I1), s	3.3	6.5	2.6	6.3	2.7	5.5	2.8	4.4
Green Ext Time (p_c), s	0.1	1.3	0.0	1.0	0.0	2.2	0.0	0.7

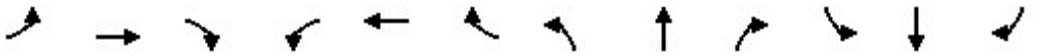
Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	929	84	125	689	50	64	82	79	47	65	40
Future Volume (veh/h)	52	929	84	125	689	50	64	82	79	47	65	40
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	57	1010	91	136	749	54	70	89	86	51	71	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	91	1318	119	175	1503	108	102	125	121	85	249	211
Arrive On Green	0.05	0.40	0.40	0.10	0.45	0.45	0.06	0.14	0.14	0.05	0.13	0.13
Sat Flow, veh/h	1767	3271	295	1767	3335	240	1767	867	838	1767	1856	1572
Grp Volume(v), veh/h	57	544	557	136	396	407	70	0	175	51	71	43
Grp Sat Flow(s),veh/h/ln	1767	1763	1803	1767	1763	1812	1767	0	1705	1767	1856	1572
Q Serve(g_s), s	1.9	15.7	15.7	4.4	9.4	9.4	2.3	0.0	5.8	1.7	2.0	1.4
Cycle Q Clear(g_c), s	1.9	15.7	15.7	4.4	9.4	9.4	2.3	0.0	5.8	1.7	2.0	1.4
Prop In Lane	1.00		0.16	1.00		0.13	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	91	710	726	175	794	817	102	0	245	85	249	211
V/C Ratio(X)	0.63	0.77	0.77	0.78	0.50	0.50	0.68	0.00	0.71	0.60	0.29	0.20
Avail Cap(c_a), veh/h	219	1004	1026	345	1130	1161	198	0	623	165	643	545
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	1.00	1.00
Uniform Delay (d), s/veh	27.3	15.2	15.2	25.9	11.4	11.5	27.2	0.0	24.0	27.5	22.9	22.7
Incr Delay (d2), s/veh	6.9	2.3	2.3	7.2	0.5	0.5	7.8	0.0	3.8	6.6	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.3	5.5	2.0	2.9	2.9	1.1	0.0	2.3	0.8	0.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.2	17.5	17.4	33.0	11.9	11.9	35.0	0.0	27.9	34.1	23.6	23.2
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1158			939			245			165	
Approach Delay, s/veh		18.3			15.0			29.9			26.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	13.0	10.3	28.2	7.9	12.4	7.5	31.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	21.5	11.5	33.5	6.6	20.4	7.3	37.7
Max Q Clear Time (g_c+I1), s	3.7	7.8	6.4	17.7	4.3	4.0	3.9	11.4
Green Ext Time (p_c), s	0.0	0.7	0.1	6.0	0.0	0.3	0.0	4.8

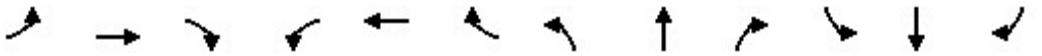
Intersection Summary	
HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	800	40	53	713	67	35	67	54	52	49	101
Future Volume (veh/h)	179	800	40	53	713	67	35	67	54	52	49	101
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	186	833	42	55	743	70	36	70	56	54	51	105
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	231	1027	52	85	842	79	108	139	95	121	81	133
Arrive On Green	0.13	0.59	0.59	0.05	0.50	0.50	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	1751	88	1767	1670	157	255	870	594	323	506	830
Grp Volume(v), veh/h	186	0	875	55	0	813	162	0	0	210	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1840	1767	0	1827	1719	0	0	1659	0	0
Q Serve(g_s), s	6.7	0.0	24.7	2.0	0.0	26.2	0.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	24.7	2.0	0.0	26.2	5.6	0.0	0.0	7.8	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.09	0.22		0.35	0.26		0.50
Lane Grp Cap(c), veh/h	231	0	1079	85	0	921	342	0	0	335	0	0
V/C Ratio(X)	0.81	0.00	0.81	0.65	0.00	0.88	0.47	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	336	0	1446	142	0	1236	557	0	0	543	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.8	0.0	10.7	30.8	0.0	14.6	25.6	0.0	0.0	26.4	0.0	0.0
Incr Delay (d2), s/veh	8.8	0.0	2.6	7.9	0.0	6.1	1.0	0.0	0.0	1.9	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	3.1	0.0	7.5	1.0	0.0	9.6	2.3	0.0	0.0	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	0.0	13.4	38.7	0.0	20.7	26.6	0.0	0.0	28.3	0.0	0.0
LnGrp LOS	D	A	B	D	A	C	C	A	A	C	A	A
Approach Vol, veh/h		1061			868			162			210	
Approach Delay, s/veh		17.4			21.8			26.6			28.3	
Approach LOS		B			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.0	7.7	43.1		15.0	13.1	37.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5	5.3	51.7		19.5	12.5	44.5				
Max Q Clear Time (g_c+I1), s		7.6	4.0	26.7		9.8	8.7	28.2				
Green Ext Time (p_c), s		0.6	0.0	6.6		0.8	0.2	5.0				

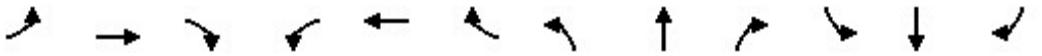
Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	296	51	56	288	76	97	510	139	85	429	63
Future Volume (veh/h)	69	296	51	56	288	76	97	510	139	85	429	63
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	75	322	55	61	313	83	105	554	151	92	466	68
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	101	383	65	91	450	381	136	661	561	118	1070	155
Arrive On Green	0.06	0.25	0.25	0.05	0.24	0.24	0.08	0.36	0.36	0.07	0.35	0.35
Sat Flow, veh/h	1767	1544	264	1767	1856	1572	1767	1856	1572	1767	3089	448
Grp Volume(v), veh/h	75	0	377	61	313	83	105	554	151	92	265	269
Grp Sat Flow(s),veh/h/ln	1767	0	1808	1767	1856	1572	1767	1856	1572	1767	1763	1775
Q Serve(g_s), s	2.7	0.0	12.9	2.2	10.0	2.7	3.8	17.8	3.1	3.3	7.5	7.6
Cycle Q Clear(g_c), s	2.7	0.0	12.9	2.2	10.0	2.7	3.8	17.8	3.1	3.3	7.5	7.6
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	101	0	449	91	450	381	136	661	561	118	610	615
V/C Ratio(X)	0.74	0.00	0.84	0.67	0.70	0.22	0.77	0.84	0.27	0.78	0.43	0.44
Avail Cap(c_a), veh/h	182	0	637	169	640	542	326	1011	857	204	838	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	23.2	30.3	22.4	19.7	29.4	19.2	7.4	29.8	16.3	16.4
Incr Delay (d2), s/veh	10.3	0.0	6.9	8.3	1.9	0.3	8.9	3.9	0.3	10.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	5.6	1.1	4.1	0.9	1.8	7.1	1.4	1.7	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.4	0.0	30.1	38.6	24.4	20.0	38.3	23.1	7.7	40.3	16.8	16.9
LnGrp LOS	D	A	C	D	C	B	D	C	A	D	B	B
Approach Vol, veh/h		452			457			810			626	
Approach Delay, s/veh		31.8			25.5			22.2			20.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	27.7	7.8	20.6	9.5	27.0	8.2	20.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	7.5	35.4	6.2	22.9	12.0	30.9	6.7	22.4
Max Q Clear Time (g_c+I1), s	5.3	19.8	4.2	14.9	5.8	9.6	4.7	12.0
Green Ext Time (p_c), s	0.0	3.4	0.0	1.3	0.1	3.0	0.0	1.4

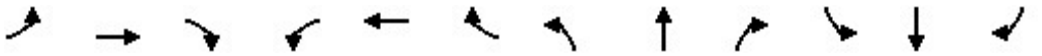
Intersection Summary	
HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	678	57	97	812	35	118	87	125	58	107	144
Future Volume (veh/h)	72	678	57	97	812	35	118	87	125	58	107	144
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	77	729	61	104	873	38	127	94	134	62	115	155
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	113	1025	86	184	1209	53	166	129	184	100	276	234
Arrive On Green	0.06	0.31	0.31	0.10	0.35	0.35	0.09	0.19	0.19	0.06	0.15	0.15
Sat Flow, veh/h	1767	3293	275	1767	3442	150	1767	692	986	1767	1856	1572
Grp Volume(v), veh/h	77	390	400	104	447	464	127	0	228	62	115	155
Grp Sat Flow(s),veh/h/ln	1767	1763	1806	1767	1763	1829	1767	0	1678	1767	1856	1572
Q Serve(g_s), s	2.2	10.3	10.3	2.9	11.6	11.6	3.7	0.0	6.7	1.8	3.0	4.9
Cycle Q Clear(g_c), s	2.2	10.3	10.3	2.9	11.6	11.6	3.7	0.0	6.7	1.8	3.0	4.9
Prop In Lane	1.00		0.15	1.00		0.08	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	113	549	562	184	619	642	166	0	312	100	276	234
V/C Ratio(X)	0.68	0.71	0.71	0.56	0.72	0.72	0.77	0.00	0.73	0.62	0.42	0.66
Avail Cap(c_a), veh/h	285	954	977	352	1021	1059	419	0	768	299	722	612
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	1.00	1.00
Uniform Delay (d), s/veh	24.1	16.0	16.0	22.4	14.8	14.8	23.3	0.0	20.2	24.3	20.3	21.2
Incr Delay (d2), s/veh	6.9	1.7	1.7	2.7	1.6	1.6	7.2	0.0	3.3	6.1	1.0	3.2
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	1.0	3.5	3.6	1.2	3.8	3.9	1.7	0.0	2.5	0.8	1.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	17.8	17.7	25.1	16.5	16.4	30.5	0.0	23.5	30.4	21.3	24.3
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	C	C
Approach Vol, veh/h		867			1015			355			332	
Approach Delay, s/veh		18.9			17.3			26.0			24.4	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	14.3	10.0	20.9	9.4	12.3	7.9	23.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.9	24.1	10.5	28.5	12.5	20.5	8.5	30.5
Max Q Clear Time (g_c+I1), s	3.8	8.7	4.9	12.3	5.7	6.9	4.2	13.6
Green Ext Time (p_c), s	0.0	1.1	0.1	4.1	0.1	0.9	0.0	4.9

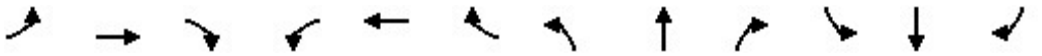
Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	703	57	47	620	49	61	193	52	90	155	166
Future Volume (veh/h)	92	703	57	47	620	49	61	193	52	90	155	166
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	100	764	62	51	674	53	66	210	57	98	168	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	154	803	65	73	728	57	115	325	80	138	202	195
Arrive On Green	0.09	0.47	0.47	0.04	0.43	0.43	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1767	1693	137	1767	1698	134	198	1002	248	266	623	602
Grp Volume(v), veh/h	100	0	826	51	0	727	333	0	0	446	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1831	1767	0	1832	1448	0	0	1491	0	0
Q Serve(g_s), s	4.6	0.0	36.5	2.4	0.0	31.7	0.0	0.0	0.0	8.2	0.0	0.0
Cycle Q Clear(g_c), s	4.6	0.0	36.5	2.4	0.0	31.7	16.2	0.0	0.0	24.4	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.07	0.20		0.17	0.22		0.40
Lane Grp Cap(c), veh/h	154	0	868	73	0	785	521	0	0	536	0	0
V/C Ratio(X)	0.65	0.00	0.95	0.70	0.00	0.93	0.64	0.00	0.00	0.83	0.00	0.00
Avail Cap(c_a), veh/h	154	0	901	107	0	871	568	0	0	581	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.3	0.0	21.2	39.9	0.0	22.8	24.1	0.0	0.0	27.3	0.0	0.0
Incr Delay (d2), s/veh	9.3	0.0	18.9	11.4	0.0	14.8	2.1	0.0	0.0	9.4	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	2.3	0.0	17.7	1.2	0.0	15.1	5.7	0.0	0.0	9.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	0.0	40.2	51.3	0.0	37.6	26.3	0.0	0.0	36.8	0.0	0.0
LnGrp LOS	D	A	D	D	A	D	C	A	A	D	A	A
Approach Vol, veh/h		926			778			333			446	
Approach Delay, s/veh		40.9			38.5			26.3			36.8	
Approach LOS		D			D			C			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		31.9	8.0	44.5		31.9	11.8	40.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		29.9	5.1	41.5		29.9	6.5	40.1				
Max Q Clear Time (g_c+I1), s		18.2	4.4	38.5		26.4	6.6	33.7				
Green Ext Time (p_c), s		1.6	0.0	1.5		1.0	0.0	2.4				

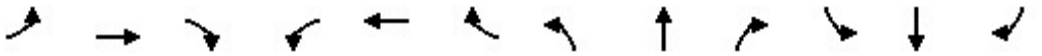
Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	167	42	27	129	27	31	255	29	65	407	40
Future Volume (veh/h)	36	167	42	27	129	27	31	255	29	65	407	40
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	39	182	46	29	140	29	34	277	32	71	442	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	78	279	70	61	344	291	70	422	357	123	835	81
Arrive On Green	0.04	0.19	0.19	0.03	0.19	0.19	0.04	0.23	0.23	0.07	0.26	0.26
Sat Flow, veh/h	1767	1429	361	1767	1856	1572	1767	1856	1572	1767	3247	315
Grp Volume(v), veh/h	39	0	228	29	140	29	34	277	32	71	239	246
Grp Sat Flow(s),veh/h/ln	1767	0	1791	1767	1856	1572	1767	1856	1572	1767	1763	1799
Q Serve(g_s), s	0.8	0.0	4.5	0.6	2.5	0.6	0.7	5.2	0.6	1.5	4.4	4.5
Cycle Q Clear(g_c), s	0.8	0.0	4.5	0.6	2.5	0.6	0.7	5.2	0.6	1.5	4.4	4.5
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	78	0	349	61	344	291	70	422	357	123	453	462
V/C Ratio(X)	0.50	0.00	0.65	0.47	0.41	0.10	0.48	0.66	0.09	0.58	0.53	0.53
Avail Cap(c_a), veh/h	349	0	1107	349	1148	973	349	1441	1221	535	1554	1586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	14.1	18.0	13.6	12.9	17.9	13.3	11.6	17.1	12.1	12.1
Incr Delay (d2), s/veh	4.8	0.0	2.1	5.6	0.8	0.1	5.1	1.7	0.1	4.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.5	0.3	0.9	0.2	0.3	1.7	0.2	0.6	1.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	0.0	16.2	23.6	14.4	13.0	23.0	15.1	11.7	21.4	13.1	13.1
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		267			198			343			556	
Approach Delay, s/veh		17.1			15.5			15.5			14.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.1	13.1	5.8	11.9	6.0	14.3	6.2	11.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.5	29.5	7.5	23.5	7.5	33.5	7.5	23.5
Max Q Clear Time (g_c+I1), s	3.5	7.2	2.6	6.5	2.7	6.5	2.8	4.5
Green Ext Time (p_c), s	0.1	1.5	0.0	1.0	0.0	2.8	0.0	0.7

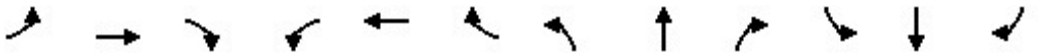
Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	974	84	125	715	50	64	89	79	47	69	89
Future Volume (veh/h)	135	974	84	125	715	50	64	89	79	47	69	89
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	147	1059	91	136	777	54	70	97	86	51	75	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	189	1359	117	174	1355	94	100	133	118	84	255	216
Arrive On Green	0.11	0.41	0.41	0.10	0.41	0.41	0.06	0.15	0.15	0.05	0.14	0.14
Sat Flow, veh/h	1767	3285	282	1767	3344	232	1767	907	804	1767	1856	1572
Grp Volume(v), veh/h	147	568	582	136	409	422	70	0	183	51	75	97
Grp Sat Flow(s),veh/h/ln	1767	1763	1805	1767	1763	1814	1767	0	1711	1767	1856	1572
Q Serve(g_s), s	5.0	17.1	17.1	4.6	11.0	11.0	2.4	0.0	6.3	1.7	2.2	3.5
Cycle Q Clear(g_c), s	5.0	17.1	17.1	4.6	11.0	11.0	2.4	0.0	6.3	1.7	2.2	3.5
Prop In Lane	1.00		0.16	1.00		0.13	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	189	729	746	174	714	735	100	0	251	84	255	216
V/C Ratio(X)	0.78	0.78	0.78	0.78	0.57	0.57	0.70	0.00	0.73	0.61	0.29	0.45
Avail Cap(c_a), veh/h	398	992	1016	303	897	923	190	0	600	159	618	523
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	1.00	1.00
Uniform Delay (d), s/veh	26.7	15.5	15.6	27.0	14.1	14.1	28.4	0.0	25.0	28.6	23.8	24.3
Incr Delay (d2), s/veh	6.7	2.8	2.7	7.4	0.7	0.7	8.4	0.0	4.0	7.0	0.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	6.0	6.1	2.1	3.6	3.7	1.2	0.0	2.6	0.8	0.9	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.4	18.3	18.3	34.3	14.9	14.8	36.8	0.0	29.0	35.6	24.4	25.8
LnGrp LOS	C	B	B	C	B	B	D	A	C	D	C	C
Approach Vol, veh/h		1297			967			253			223	
Approach Delay, s/veh		20.0			17.6			31.2			27.6	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.4	13.5	10.5	29.8	8.0	12.9	11.1	29.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.5	21.5	10.5	34.5	6.6	20.4	13.8	31.2
Max Q Clear Time (g_c+I1), s	3.7	8.3	6.6	19.1	4.4	5.5	7.0	13.0
Green Ext Time (p_c), s	0.0	0.7	0.1	6.2	0.0	0.5	0.2	4.5

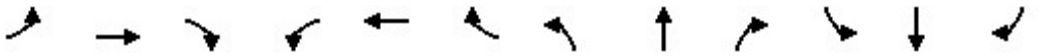
Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	845	44	53	789	67	42	67	54	52	49	101
Future Volume (veh/h)	179	845	44	53	789	67	42	67	54	52	49	101
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	186	880	46	55	822	70	44	70	56	54	51	105
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	226	1075	56	81	899	77	109	126	85	113	78	129
Arrive On Green	0.13	0.62	0.62	0.05	0.53	0.53	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	1748	91	1767	1686	144	307	808	548	329	503	832
Grp Volume(v), veh/h	186	0	926	55	0	892	170	0	0	210	0	0
Grp Sat Flow(s),veh/h/ln	1767	0	1839	1767	0	1830	1662	0	0	1663	0	0
Q Serve(g_s), s	7.5	0.0	28.7	2.3	0.0	32.7	0.0	0.0	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	7.5	0.0	28.7	2.3	0.0	32.7	6.9	0.0	0.0	8.7	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.08	0.26		0.33	0.26		0.50
Lane Grp Cap(c), veh/h	226	0	1131	81	0	975	320	0	0	320	0	0
V/C Ratio(X)	0.82	0.00	0.82	0.68	0.00	0.91	0.53	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	276	0	1297	122	0	1131	490	0	0	488	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	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.3	0.0	11.0	34.6	0.0	15.7	29.1	0.0	0.0	29.9	0.0	0.0
Incr Delay (d2), s/veh	15.1	0.0	3.8	9.5	0.0	10.4	1.4	0.0	0.0	2.3	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	3.9	0.0	9.2	1.1	0.0	13.2	2.8	0.0	0.0	3.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	0.0	14.8	44.1	0.0	26.1	30.5	0.0	0.0	32.1	0.0	0.0
LnGrp LOS	D	A	B	D	A	C	C	A	A	C	A	A
Approach Vol, veh/h		1112			947			170			210	
Approach Delay, s/veh		20.1			27.1			30.5			32.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.0	7.9	49.8		16.0	13.9	43.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5	5.1	51.9		19.5	11.5	45.5				
Max Q Clear Time (g_c+I1), s		8.9	4.3	30.7		10.7	9.5	34.7				
Green Ext Time (p_c), s		0.6	0.0	6.8		0.7	0.1	4.5				

Intersection Summary	
HCM 6th Ctrl Delay	24.6
HCM 6th LOS	C



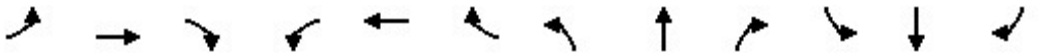
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	296	51	56	288	83	97	597	139	89	479	67
Future Volume (veh/h)	76	296	51	56	288	83	97	597	139	89	479	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	83	322	55	61	313	90	105	649	151	97	521	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	106	369	63	85	421	357	135	741	628	124	1220	170
Arrive On Green	0.06	0.24	0.24	0.05	0.23	0.23	0.08	0.40	0.40	0.07	0.39	0.39
Sat Flow, veh/h	1767	1544	264	1767	1856	1572	1767	1856	1572	1767	3107	434
Grp Volume(v), veh/h	83	0	377	61	313	90	105	649	151	97	295	299
Grp Sat Flow(s),veh/h/ln	1767	0	1808	1767	1856	1572	1767	1856	1572	1767	1763	1777
Q Serve(g_s), s	3.4	0.0	14.8	2.5	11.6	3.5	4.3	23.9	3.4	4.0	9.0	9.1
Cycle Q Clear(g_c), s	3.4	0.0	14.8	2.5	11.6	3.5	4.3	23.9	3.4	4.0	9.0	9.1
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	106	0	432	85	421	357	135	741	628	124	692	698
V/C Ratio(X)	0.78	0.00	0.87	0.71	0.74	0.25	0.78	0.88	0.24	0.78	0.43	0.43
Avail Cap(c_a), veh/h	167	0	525	131	501	425	287	965	818	155	786	793
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.3	0.0	27.1	34.7	26.6	23.5	33.5	20.5	7.6	33.9	16.4	16.4
Incr Delay (d2), s/veh	11.6	0.0	12.9	10.6	4.9	0.4	9.1	7.4	0.2	18.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	7.3	1.3	5.3	1.2	2.1	10.3	1.5	2.2	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	0.0	40.0	45.3	31.5	23.8	42.6	27.9	7.8	52.1	16.8	16.8
LnGrp LOS	D	A	D	D	C	C	D	C	A	D	B	B
Approach Vol, veh/h		460			464			905			691	
Approach Delay, s/veh		41.1			31.8			26.2			21.8	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	34.1	8.1	22.2	10.2	33.6	9.0	21.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	38.5	5.5	21.5	12.0	33.0	7.0	20.0
Max Q Clear Time (g_c+I1), s	6.0	25.9	4.5	16.8	6.3	11.1	5.4	13.6
Green Ext Time (p_c), s	0.0	3.6	0.0	0.9	0.1	3.4	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
9: Dinuba Boulevard & Riggin Avenue

11/19/2021



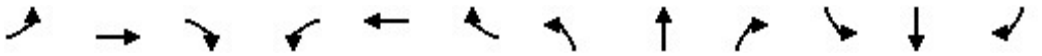
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	438	207	200	411	120	192	488	77	172	695	213
Future Volume (veh/h)	291	438	207	200	411	120	192	488	77	172	695	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	306	461	218	211	433	126	202	514	81	181	732	224
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	393	663	296	250	757	338	276	1231	549	306	1261	562
Arrive On Green	0.11	0.19	0.19	0.14	0.21	0.21	0.08	0.35	0.35	0.09	0.36	0.36
Sat Flow, veh/h	3428	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	306	461	218	211	433	126	202	514	81	181	732	224
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	8.0	11.3	12.1	10.8	10.2	4.7	5.4	10.3	2.0	4.7	15.7	9.9
Cycle Q Clear(g_c), s	8.0	11.3	12.1	10.8	10.2	4.7	5.4	10.3	2.0	4.7	15.7	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	393	663	296	250	757	338	276	1231	549	306	1261	562
V/C Ratio(X)	0.78	0.69	0.74	0.85	0.57	0.37	0.73	0.42	0.15	0.59	0.58	0.40
Avail Cap(c_a), veh/h	636	1256	560	414	1427	636	393	1231	549	422	1261	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.9	35.1	35.4	38.8	32.6	17.0	41.6	22.8	7.5	40.5	24.0	22.1
Incr Delay (d2), s/veh	3.3	1.3	3.6	8.1	0.7	0.7	4.1	1.0	0.6	1.8	2.0	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	3.4	4.7	4.7	5.0	4.2	2.3	2.3	4.1	1.2	2.0	6.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	36.4	39.0	46.9	33.3	17.7	45.7	23.9	8.1	42.4	25.9	24.2
LnGrp LOS	D	D	D	D	C	B	D	C	A	D	C	C
Approach Vol, veh/h		985			770			797			1137	
Approach Delay, s/veh		39.1			34.5			27.8			28.2	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	37.9	18.4	22.7	12.8	38.7	15.9	25.2
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	11.5	32.6	21.7	33.0	10.7	33.4	17.2	37.5
Max Q Clear Time (g_c+I1), s	6.7	12.3	12.8	14.1	7.4	17.7	10.0	12.2
Green Ext Time (p_c), s	0.2	3.3	0.4	3.3	0.2	4.8	0.6	3.0

Intersection Summary	
HCM 6th Ctrl Delay	32.3
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
9: Dinuba Boulevard & Riggin Avenue

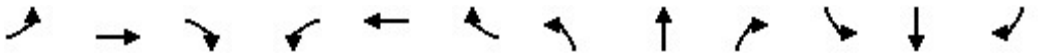
11/19/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	506	410	121	367	513	192	248	1061	89	200	651	237
Future Volume (veh/h)	506	410	121	367	513	192	248	1061	89	200	651	237
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	533	432	127	386	540	202	261	1117	94	211	685	249
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	614	575	257	386	714	318	323	1224	546	219	1118	499
Arrive On Green	0.18	0.16	0.16	0.22	0.20	0.20	0.09	0.35	0.35	0.06	0.32	0.32
Sat Flow, veh/h	3428	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	533	432	127	386	540	202	261	1117	94	211	685	249
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	15.7	12.1	7.6	22.7	15.0	9.7	7.8	31.7	2.2	6.4	17.2	13.4
Cycle Q Clear(g_c), s	15.7	12.1	7.6	22.7	15.0	9.7	7.8	31.7	2.2	6.4	17.2	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	614	575	257	386	714	318	323	1224	546	219	1118	499
V/C Ratio(X)	0.87	0.75	0.49	1.00	0.76	0.63	0.81	0.91	0.17	0.96	0.61	0.50
Avail Cap(c_a), veh/h	742	1119	499	386	1126	502	337	1224	546	219	1118	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	41.5	39.6	40.6	39.0	23.8	46.1	32.3	6.0	48.5	29.9	28.6
Incr Delay (d2), s/veh	9.3	2.0	1.5	45.9	1.7	2.1	13.2	11.8	0.7	50.1	2.5	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	5.2	2.9	14.3	6.4	3.6	3.8	14.5	1.6	4.2	7.2	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	43.5	41.1	86.5	40.7	25.9	59.4	44.0	6.7	98.6	32.4	32.2
LnGrp LOS	D	D	D	F	D	C	E	D	A	F	C	C
Approach Vol, veh/h		1092			1128			1472			1145	
Approach Delay, s/veh		46.8			53.7			44.4			44.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	41.7	28.0	22.3	15.2	38.5	23.9	26.3
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	6.7	36.4	22.7	33.0	10.3	32.8	22.5	33.2
Max Q Clear Time (g_c+I1), s	8.4	33.7	24.7	14.1	9.8	19.2	17.7	17.0
Green Ext Time (p_c), s	0.0	1.8	0.0	2.8	0.0	4.3	0.9	3.6

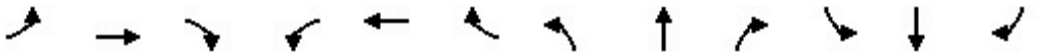
Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	291	469	244	200	422	120	205	488	77	172	695	213
Future Volume (veh/h)	291	469	244	200	422	120	205	488	77	172	695	213
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	306	494	257	211	444	126	216	514	81	181	732	224
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	392	677	302	249	770	344	291	1252	558	284	1244	555
Arrive On Green	0.11	0.19	0.19	0.14	0.22	0.22	0.09	0.36	0.36	0.08	0.36	0.36
Sat Flow, veh/h	3428	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	306	494	257	211	444	126	216	514	81	181	732	224
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	8.1	12.4	11.2	10.9	10.6	4.8	5.8	10.4	3.3	4.8	16.0	10.1
Cycle Q Clear(g_c), s	8.1	12.4	11.2	10.9	10.6	4.8	5.8	10.4	3.3	4.8	16.0	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	392	677	302	249	770	344	291	1252	558	284	1244	555
V/C Ratio(X)	0.78	0.73	0.85	0.85	0.58	0.37	0.74	0.41	0.15	0.64	0.59	0.40
Avail Cap(c_a), veh/h	628	1239	553	390	1371	611	424	1252	558	417	1244	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	35.6	20.8	39.4	32.8	17.5	41.9	22.7	20.4	41.7	24.6	22.7
Incr Delay (d2), s/veh	3.4	1.5	6.7	9.9	0.7	0.7	4.0	1.0	0.5	2.4	2.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.2	4.3	5.2	4.3	2.3	2.5	4.1	1.2	2.0	6.5	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	37.2	27.5	49.3	33.5	18.1	45.9	23.7	21.0	44.0	26.7	24.9
LnGrp LOS	D	D	C	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1057			781			811			1137	
Approach Delay, s/veh		36.7			35.3			29.3			29.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	38.9	18.5	23.3	13.3	38.7	16.0	25.8
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	11.5	33.6	20.7	33.0	11.7	33.4	17.2	36.5
Max Q Clear Time (g_c+I1), s	6.8	12.4	12.9	14.4	7.8	18.0	10.1	12.6
Green Ext Time (p_c), s	0.2	3.3	0.3	3.7	0.2	4.8	0.6	3.1

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	506	431	145	367	547	192	289	1061	89	200	651	237
Future Volume (veh/h)	506	431	145	367	547	192	289	1061	89	200	651	237
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	1856	1856	1856	1856	1856	1856	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	533	454	153	386	576	202	304	1117	94	211	685	249
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	4	4	4
Cap, veh/h	613	604	269	382	736	328	364	1213	541	217	1062	474
Arrive On Green	0.18	0.17	0.17	0.22	0.21	0.21	0.11	0.35	0.35	0.06	0.30	0.30
Sat Flow, veh/h	3428	3526	1572	1767	3526	1572	3401	3497	1560	3401	3497	1560
Grp Volume(v), veh/h	533	454	153	386	576	202	304	1117	94	211	685	249
Grp Sat Flow(s),veh/h/ln	1714	1763	1572	1767	1763	1572	1700	1749	1560	1700	1749	1560
Q Serve(g_s), s	15.9	12.9	9.4	22.7	16.2	12.2	9.2	32.2	2.3	6.5	17.8	8.3
Cycle Q Clear(g_c), s	15.9	12.9	9.4	22.7	16.2	12.2	9.2	32.2	2.3	6.5	17.8	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	613	604	269	382	736	328	364	1213	541	217	1062	474
V/C Ratio(X)	0.87	0.75	0.57	1.01	0.78	0.62	0.84	0.92	0.17	0.97	0.65	0.53
Avail Cap(c_a), veh/h	735	1108	494	382	1115	497	373	1213	541	217	1062	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	41.4	39.9	41.1	39.3	37.7	46.0	32.9	6.3	49.0	31.7	10.8
Incr Delay (d2), s/veh	9.6	1.9	1.9	48.6	2.1	1.9	14.8	12.7	0.7	52.9	3.0	4.1
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	7.3	5.5	3.6	14.6	6.9	4.7	4.5	14.8	1.6	4.3	7.6	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.5	43.3	41.8	89.7	41.4	39.6	60.8	45.7	7.0	102.0	34.7	15.0
LnGrp LOS	D	D	D	F	D	D	E	D	A	F	C	B
Approach Vol, veh/h		1140			1164			1515			1145	
Approach Delay, s/veh		47.0			57.1			46.3			42.8	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	41.7	28.0	23.3	16.5	37.2	24.1	27.2
Change Period (Y+Rc), s	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Max Green Setting (Gmax), s	6.7	36.4	22.7	33.0	11.5	31.6	22.5	33.2
Max Q Clear Time (g_c+I1), s	8.5	34.2	24.7	14.9	11.2	19.8	17.9	18.2
Green Ext Time (p_c), s	0.0	1.5	0.0	3.0	0.0	4.0	0.9	3.7

Intersection Summary	
HCM 6th Ctrl Delay	48.2
HCM 6th LOS	D

APPENDIX C

Collision Data

SWITRS Query & Map

Result Summary

Date 01/01/2018 - 12/31/2020

County Tulare

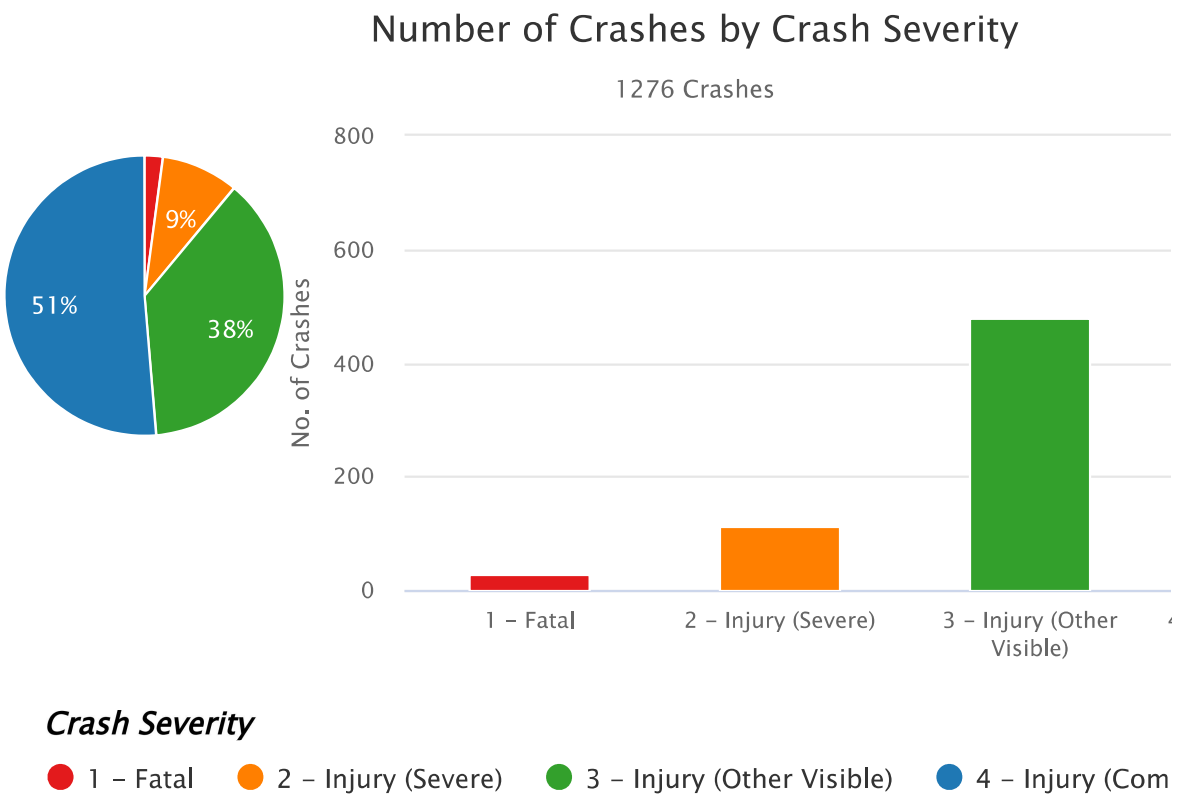
City Visalia

Change Filters | Download Raw Data

Total Crashes	1,276	**Total Victims**	28 Killed & 1,797 Injured	**State Highway**	303 (23.7%)
Ped Crashes	79 (6.2%)	**Bike Crashes**	83 (6.5%)	**Motorcycle Crashes**	69 (5.4%)

Overall

By Crash Severity



Crash Severity	Count	%
1 - Fatal	27	2.12%
2 - Injury (Severe)	114	8.93%
3 - Injury (Other Visible)	480	37.62%
4 - Injury (Complaint of Pain)	655	51.33%

By Crash Type

By Day of Week and Time

By Primary Crash Factor (PCF) Violation

BerkeleySafeTREC

Crash Details for: Case ID 8465687

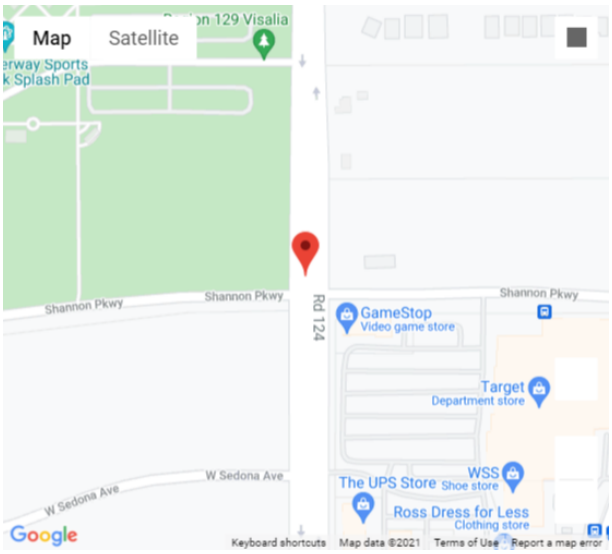
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	12/06/2018 02:51
Location (Intersection)	W Shannon Pkwy & N Dinuba Bl
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy N Postmile 10.380 Location Type H - Highway
Geocoded Location	36.3601494, -119.2970123

Type of Crash	E - Hit Object
Motor Vehicle Involved With	I - Fixed Object
Crash Severity	1 - Fatal
PCF Violation Category	05 - Wrong Side of Road
Weather	B - Cloudy
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 1

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	C - Ran Off Road

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	18	1 - Killed

BerkeleySafeTREC

Crash Details for: Case ID 8546676

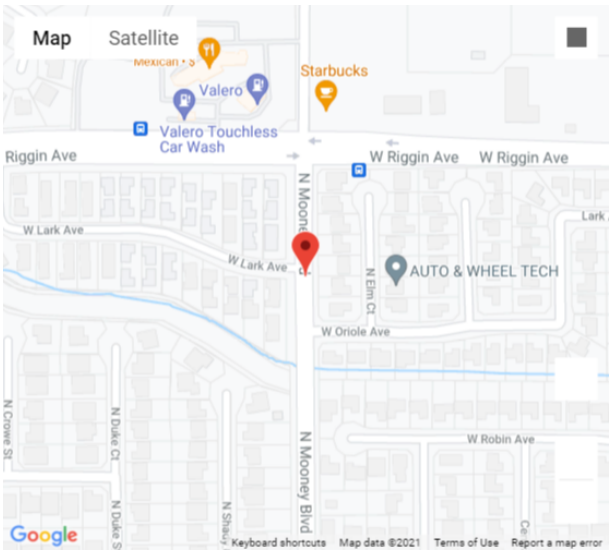
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	01/01/2018 00:13
Location (Intersection)	N Mooney Bl & Lark
Dist. & Dir. from Intersection	30.00 ft South
State Highway	No
Geocoded Location	36.3554459, -119.3142853

Type of Crash	C - Rear End
Motor Vehicle Involved With	E - Parked Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	01 - Driving or Bicycling Under the Influence of Alcohol or Drug
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	B - Proceeding Straight
2	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	South	O - Parked

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	38	7 - Possible Injury
1	2 - Passenger	M - Male	60	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8547633

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	01/01/2018 13:21
Location (Intersection)	Riggin Av & Demaree St
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3565598, -119.3320313

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	01 - Driving or Bicycling Under the Influence of Alcohol or Drug
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	No	East	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	20	6 - Suspected Minor Injury
2	1 - Driver	M - Male	47	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8585026

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	02/28/2018 08:11
Location (Intersection)	Riggin & Giddings
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3563995, -119.3057175

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	B - Proceeding Straight

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	27	7 - Possible Injury
2	2 - Passenger	F - Female	4	0 - No Injury
2	2 - Passenger	F - Female	1	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 8610407

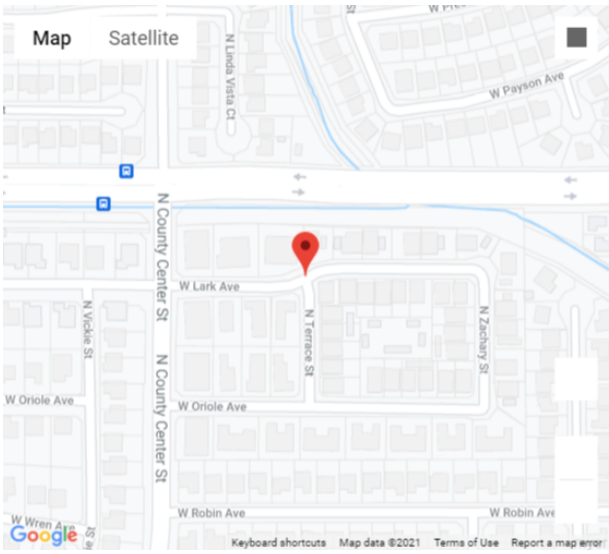
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	03/25/2018 04:51
Location (Intersection)	W Lark Av & Terrace Av
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3557091, -119.3209

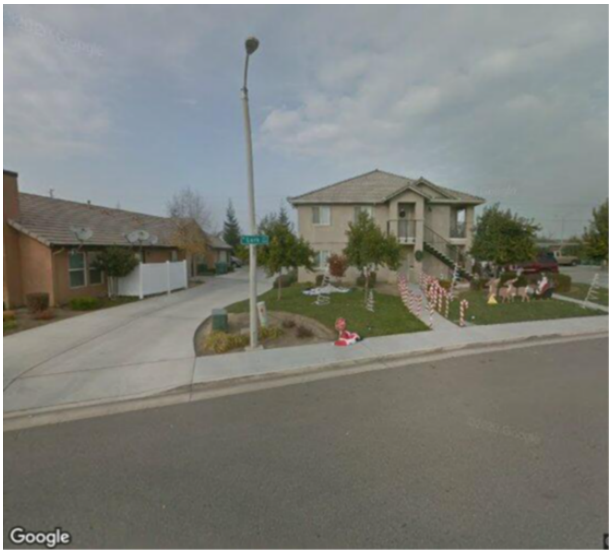
Type of Crash	C - Rear End
Motor Vehicle Involved With	E - Parked Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	21 - Unsafe Starting or Backing
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 4

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	West	G - Backing
2	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	East	- - Not Stated
3	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	East	- - Not Stated
4	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	East	- - Not Stated

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	29	7 - Possible Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	M - Male	31	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8626955

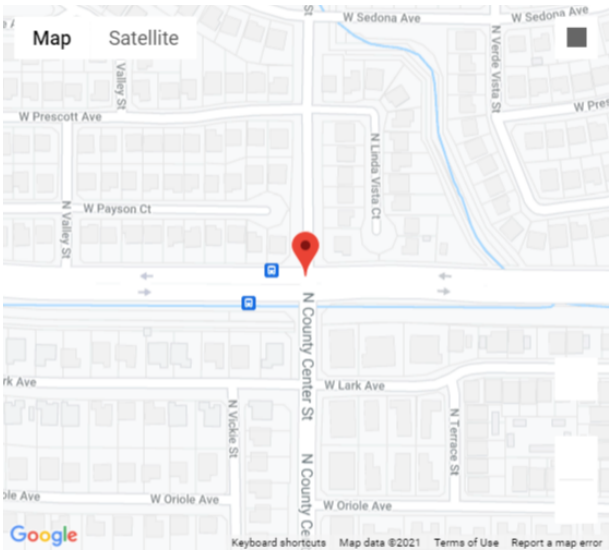
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	05/07/2018 18:42
Location (Intersection)	W Riggin & County Center
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3564987, -119.3223267

Type of Crash	G - Vehicle/Pedestrian
Motor Vehicle Involved With	B - Pedestrian
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	10 - Pedestrian Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	Yes	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	West	B - Proceeding Straight
2	2 - Pedestrian	N - Pedestrian	No	South	R - Other

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	3 - Pedestrian	M - Male	67	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8652544

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	06/03/2018 00:12
Location (Intersection)	Rt 63 & Riggin St
Dist. & Dir. from Intersection	9.00 ft South
State Highway Info	Route Number 63 Side of Hwy N Postmile 10.100 Location Type H - Highway
Geocoded Location	36.3560791, -119.2969894

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	- - Not Stated	Yes	-	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	- - Not Stated	No	South	A - Stopped

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	M - Male	38	7 - Possible Injury
2	2 - Passenger	F - Female	34	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 8659318

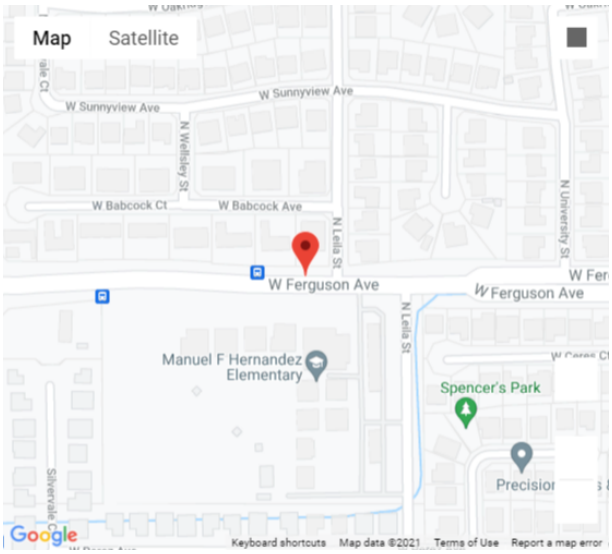
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	05/25/2018 14:18
Location (Intersection)	Ferguson & N Leila St
Dist. & Dir. from Intersection	100.00 ft West
State Highway	No
Geocoded Location	36.3492279, -119.3287659

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	B - Cloudy
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	North	L - Entering Traffic
2	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	No	East	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	F - Female	40	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8659845

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	06/10/2018 19:49
Location (Intersection)	West Riggin Av & North Giddings St
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3563995, -119.3057175

Type of Crash	B - Sideswipe
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	F - Female	60	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8676428

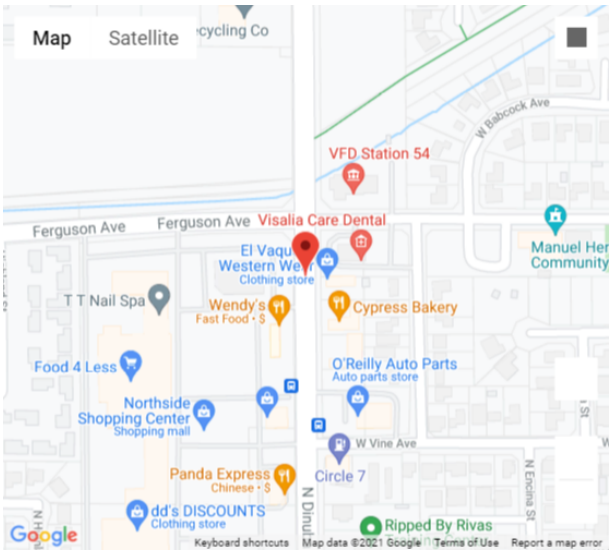
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	07/01/2018 15:18
Location (Intersection)	Rt 63 & W Ferguson Av
Dist. & Dir. from Intersection	136.00 ft South
State Highway Info	Route Number 63 Side of Hwy S Postmile 9.610 Location Type H - Highway
Geocoded Location	36.3490639, -119.296936

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	- - Not Stated	Yes	South	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	A - Stopped

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	M - Male	23	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8682471

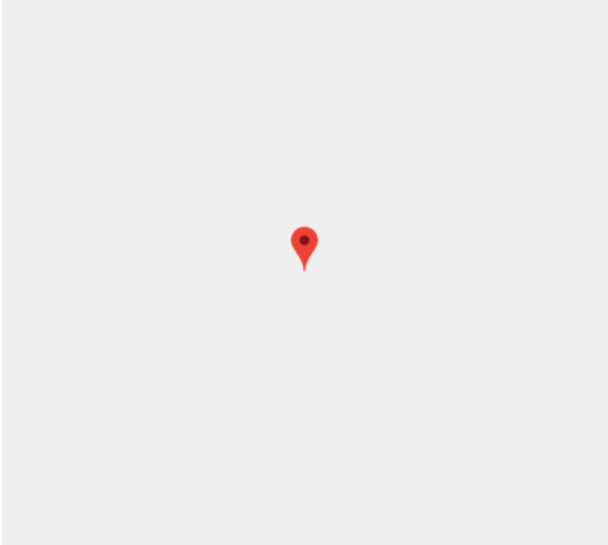
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	07/25/2018 09:22
Location (Intersection)	W Riggin Av & N Divisadero St
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3564186, -119.3099899

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	03 - Unsafe Speed
Weather	B - Cloudy
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	D - Making Right Turn

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	F - Female	56	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8696035

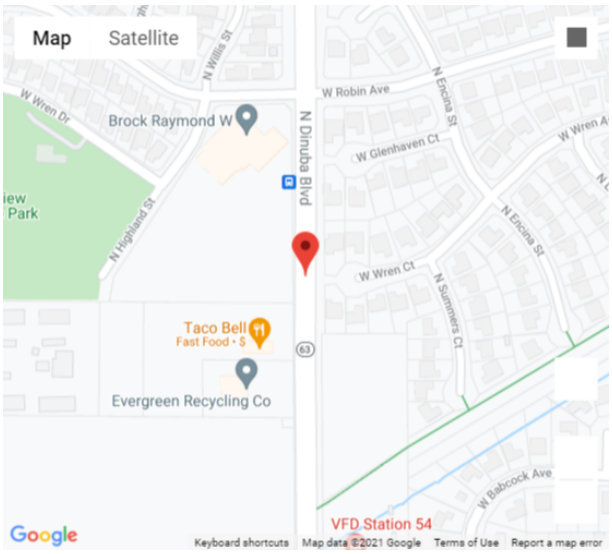
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	08/13/2018 15:21
Location (Intersection)	Rt 63 & Robin
Dist. & Dir. from Intersection	528.00 ft South
State Highway Info	Route Number 63 Side of Hwy N Postmile 9.810 Location Type H - Highway
Geocoded Location	36.352005, -119.2969589

Type of Crash	D - Broadside
Motor Vehicle Involved With	G - Bicycle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	05 - Wrong Side of Road
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	Yes
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	4 - Bicyclist	L - Bicycle	Yes	East	Q - Traveling Wrong Way
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	4 - Bicyclist	F - Female	48	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8735685

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	10/10/2018 17:28
Location (Intersection)	Rt 63 & Riggin Av
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy N Postmile 10.110 Location Type I - Intersection
Geocoded Location	36.3562164, -119.2969894

Type of Crash	B - Sideswipe
Motor Vehicle Involved With	B - Pedestrian
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	08 - Improper Turning
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	Yes	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	B - Proceeding Straight
2	2 - Pedestrian	N - Pedestrian	No	West	R - Other

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	3 - Pedestrian	M - Male	52	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8735693

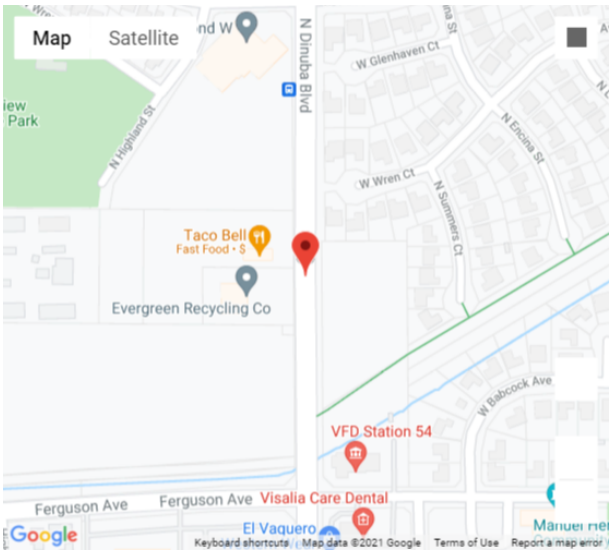
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	10/05/2018 21:33
Location (Intersection)	Rt 63 & Ferguson
Dist. & Dir. from Intersection	660.00 ft North
State Highway Info	Route Number 63 Side of Hwy S Postmile 9.760 Location Type H - Highway
Geocoded Location	36.3512688, -119.2969513

Type of Crash	A - Head-On
Motor Vehicle Involved With	B - Pedestrian
Crash Severity	2 - Injury (Severe)
PCF Violation Category	11 - Pedestrian Violation
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	Yes	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	B - Proceeding Straight
2	2 - Pedestrian	N - Pedestrian	Yes	West	R - Other

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	M - Male	23	0 - No Injury
1	2 - Passenger	M - Male	15	0 - No Injury
2	3 - Pedestrian	F - Female	17	5 - Suspected Serious Injury

BerkeleySafeTREC

Crash Details for: Case ID 8749814

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	10/27/2018 13:23
Location (Intersection)	Rt 63 & Riverway Dr
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy N Postmile 10.620 Location Type I - Intersection
Geocoded Location	36.3636436, -119.29702

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 4

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	- - Not Stated
3	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight
4	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	- - Not Stated

Victims: 10

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	38	7 - Possible Injury
1	2 - Passenger	F - Female	6	7 - Possible Injury
1	2 - Passenger	M - Male	2	0 - No Injury
1	2 - Passenger	F - Female	3	0 - No Injury
2	2 - Passenger	- - Not Stated	5	0 - No Injury
2	2 - Passenger	F - Female	4	0 - No Injury
2	2 - Passenger	F - Female	7	0 - No Injury
3	2 - Passenger	F - Female	86	0 - No Injury
4	2 - Passenger	F - Female	0	0 - No Injury
4	2 - Passenger	F - Female	5	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 8752340

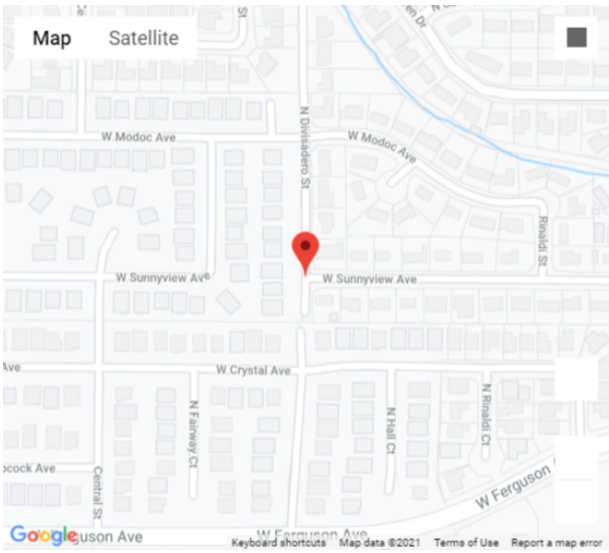
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	11/06/2018 22:39
Location (Intersection)	N Divisadero St & Sunnyview
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3513298, -119.3099289

Type of Crash	B - Sideswipe
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	West	E - Making Left Turn
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	M - Male	21	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8771796

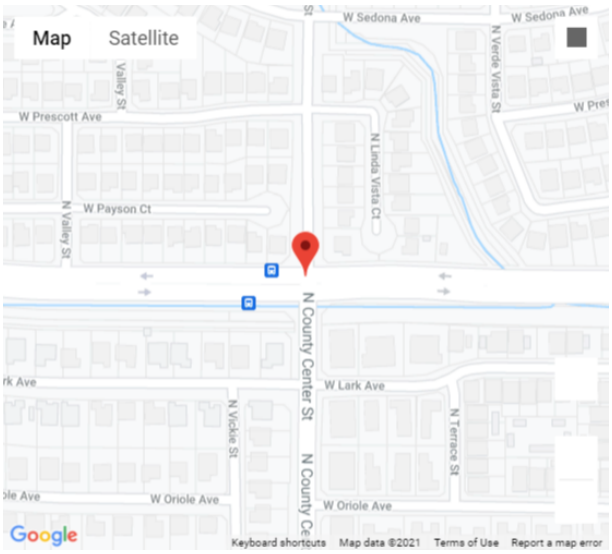
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	11/17/2018 00:20
Location (Intersection)	W Riggin Av & County Center
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3564987, -119.3223267

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	E - Making Left Turn

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	M - Male	37	7 - Possible Injury
2	1 - Driver	F - Female	32	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8775173

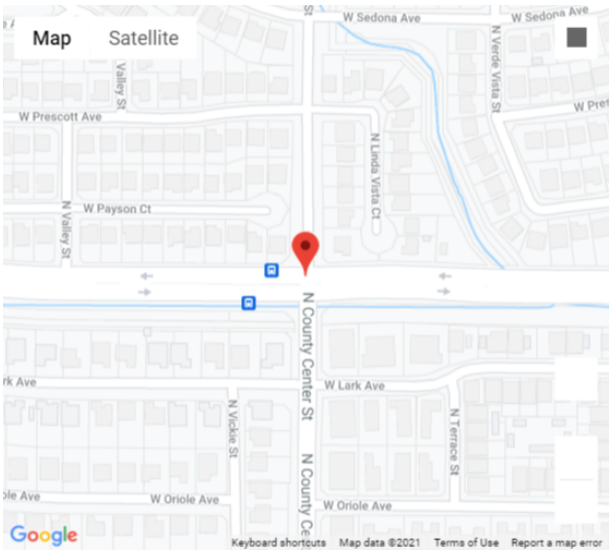
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	12/04/2018 21:44
Location (Intersection)	N County Center St & W Riggin Av
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3564987, -119.3223267

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	22	7 - Possible Injury
2	1 - Driver	F - Female	16	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8779125

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	12/13/2018 12:35
Location (Intersection)	Riggin Av & Giddings St
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3563995, -119.3057175

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	E - Making Left Turn
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	B - Proceeding Straight

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	F - Female	10	7 - Possible Injury
1	2 - Passenger	F - Female	10	7 - Possible Injury
1	2 - Passenger	F - Female	0	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 8779145

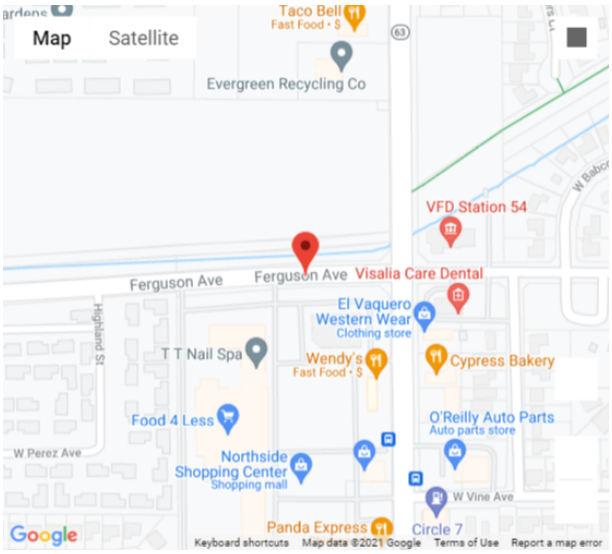
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	12/27/2018 10:19
Location (Intersection)	W Ferguson Av & Dinuba Bl
Dist. & Dir. from Intersection	276.00 ft West
State Highway	No
Geocoded Location	36.3494873, -119.2978897

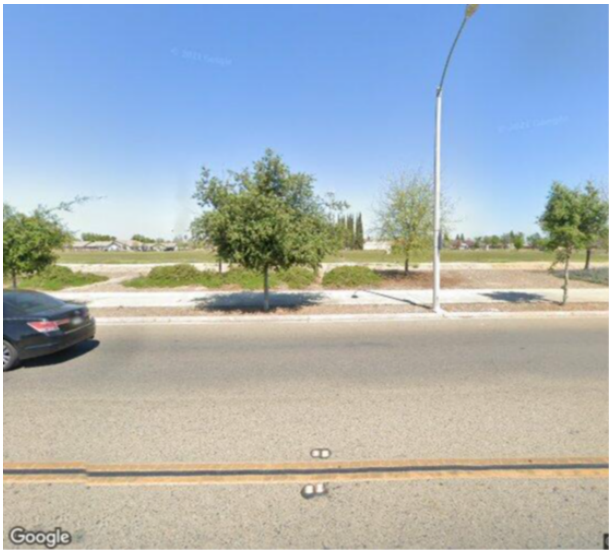
Type of Crash	D - Broadside
Motor Vehicle Involved With	G - Bicycle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	Yes
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	4 - Bicyclist	L - Bicycle	Yes	East	E - Making Left Turn
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	4 - Bicyclist	M - Male	26	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8816458

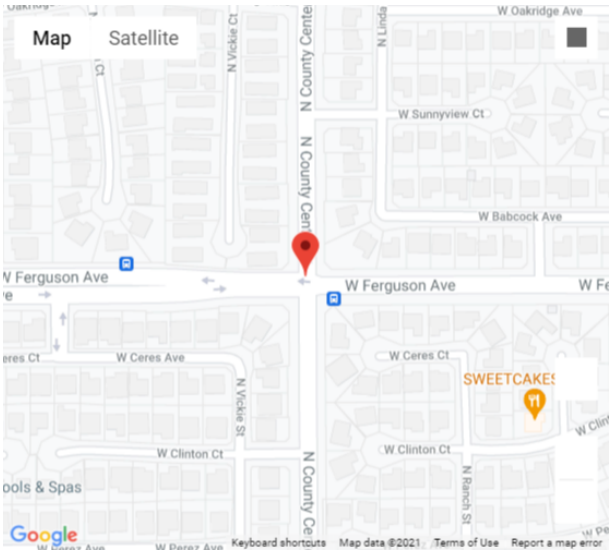
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	02/05/2019 10:45
Location (Intersection)	County Center St & Ferguson Av
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3492508, -119.3231583

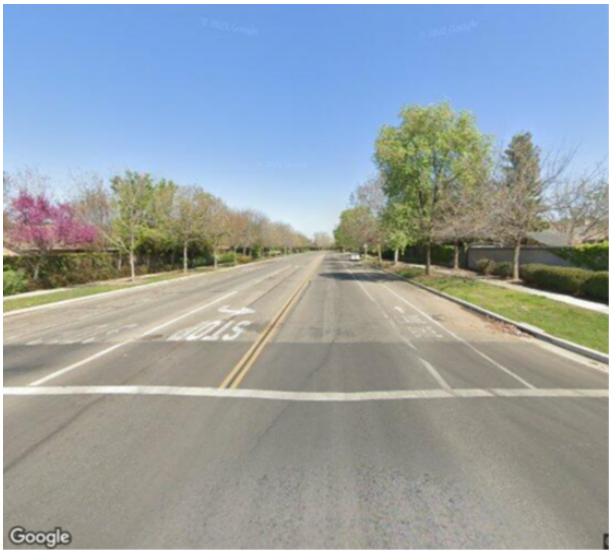
Type of Crash	D - Broadside
Motor Vehicle Involved With	G - Bicycle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	B - Cloudy
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	Yes
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	E - Making Left Turn
2	4 - Bicyclist	L - Bicycle	No	North	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	4 - Bicyclist	M - Male	37	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8819232

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	02/02/2019 12:33
Location (Intersection)	Rt 63 & Ferguson
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy S Postmile 9.640 Location Type I - Intersection
Geocoded Location	36.3495026, -119.296936

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	45	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8832316

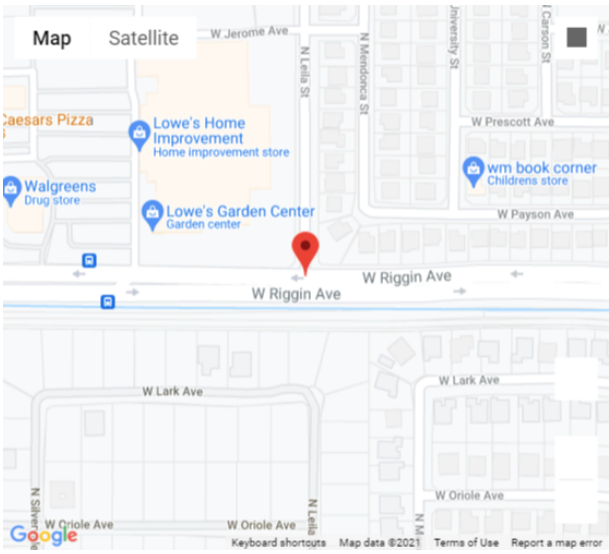
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	02/23/2019 12:00
Location (Intersection)	Riggin & Leila
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3565407, -119.3286362

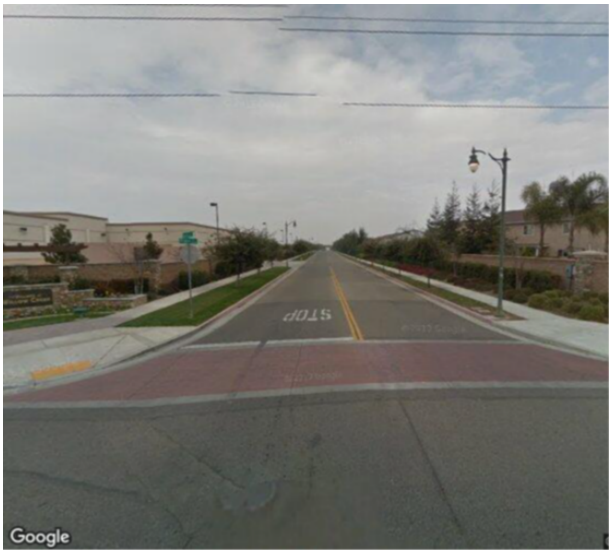
Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	I - Passing Other Vehicle
2	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	South	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	48	6 - Suspected Minor Injury
2	1 - Driver	M - Male	71	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8853701

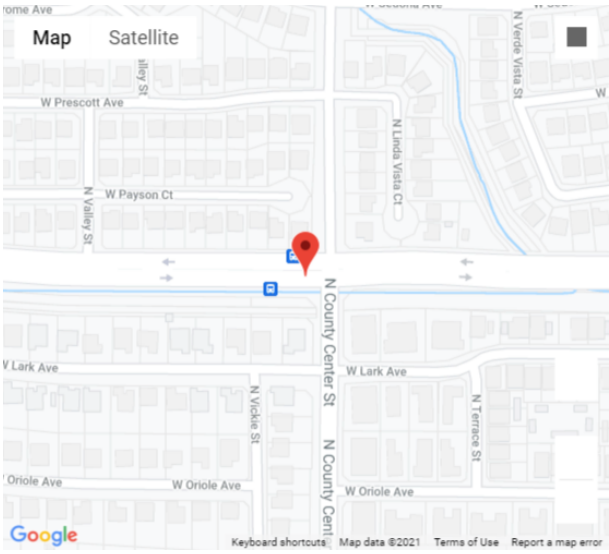
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	04/08/2019 15:34
Location (Intersection)	Riggin & Country Center
Dist. & Dir. from Intersection	60.00 ft West
State Highway	No
Geocoded Location	36.3563843, -119.3225403

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 3

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	A - Stopped
3	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	B - Proceeding Straight

Victims: 5

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	66	6 - Suspected Minor Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	F - Female	12	6 - Suspected Minor Injury
3	1 - Driver	F - Female	21	6 - Suspected Minor Injury
3	2 - Passenger	M - Male	21	6 - Suspected Minor Injury
3	2 - Passenger	M - Male	20	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 8853717

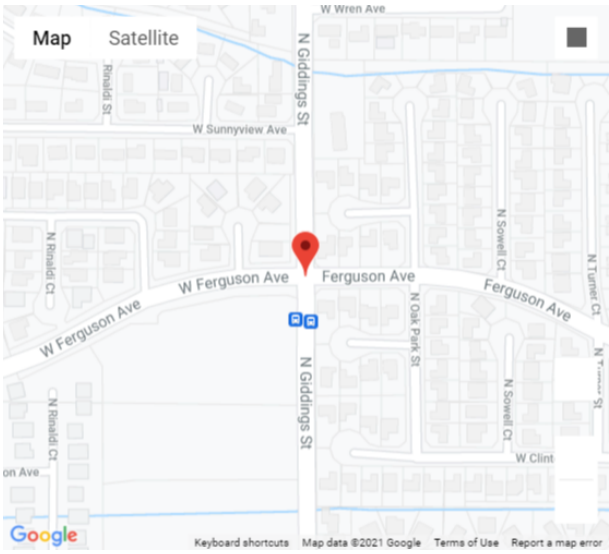
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	04/02/2019 15:24
Location (Intersection)	W Ferguson Av & N Giddings St
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.350132, -119.3056488

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	76	7 - Possible Injury
2	1 - Driver	F - Female	25	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8890191

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	05/30/2019 18:01
Location (Intersection)	Rt 63 & W Ferguson Av
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy N Postmile 9.640 Location Type I - Intersection
Geocoded Location	36.3495026, -119.296936

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	00 - Unknown
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 3

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	B - Proceeding Straight
3	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	A - Stopped

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
3	1 - Driver	M - Male	22	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8896487

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	07/02/2019 10:33
Location (Intersection)	W Riggin Av & N Giddings St
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3563995, -119.3057175

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	West	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	55	7 - Possible Injury
2	1 - Driver	M - Male	27	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8897619

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	06/12/2019 14:46
Location (Intersection)	Sedona & Corvina
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.359169, -119.3179092

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	M - Male	33	7 - Possible Injury
2	2 - Passenger	M - Male	1	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 8897623

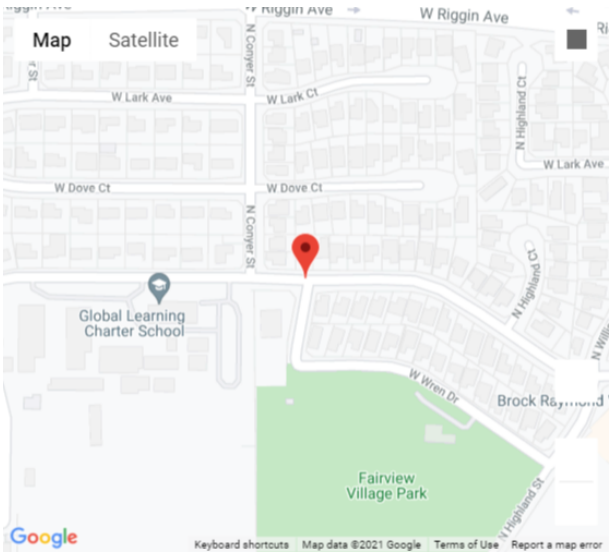
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	06/13/2019 06:39
Location (Intersection)	Robin & Conyer
Dist. & Dir. from Intersection	30.00 ft South
State Highway	No
Geocoded Location	36.3542099, -119.3007736

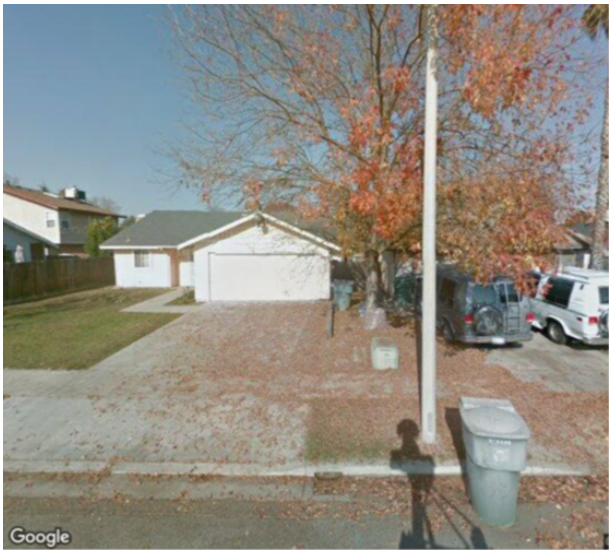
Type of Crash	D - Broadside
Motor Vehicle Involved With	G - Bicycle
Crash Severity	2 - Injury (Severe)
PCF Violation Category	21 - Unsafe Starting or Backing
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	Yes
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	4 - Bicyclist	L - Bicycle	Yes	South	L - Entering Traffic
2	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	No	-	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	4 - Bicyclist	M - Male	29	5 - Suspected Serious Injury

BerkeleySafeTREC

Crash Details for: Case ID 8908005

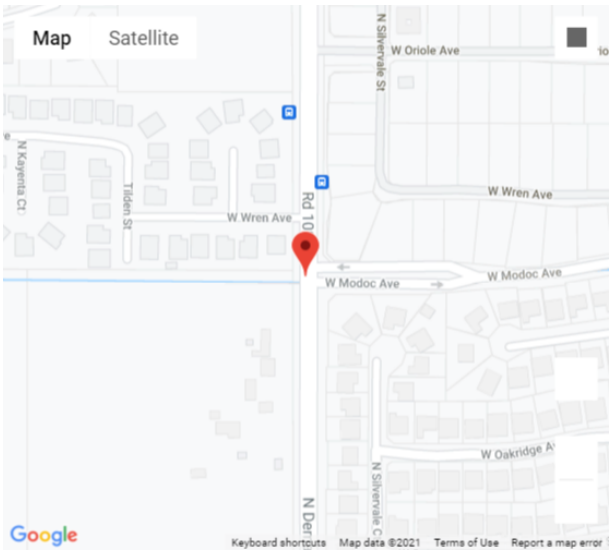
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	06/26/2019 12:07
Location (Intersection)	N Demaree St & W Modoc Av
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3527794, -119.3320389

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	I - Other Bus	Yes	North	D - Making Right Turn
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	F - Female	43	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8911546

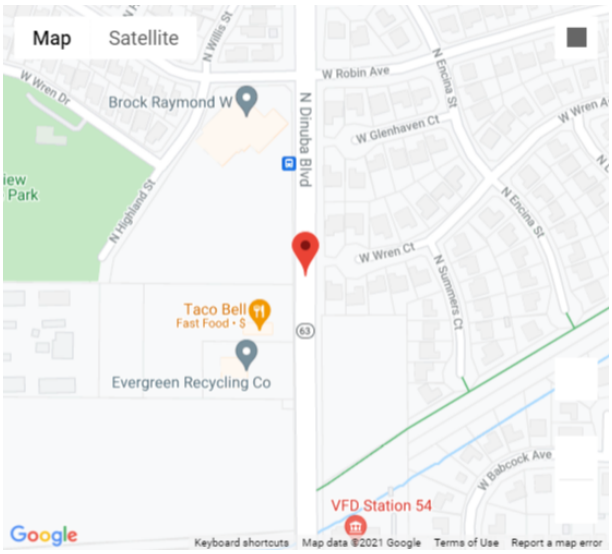
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	12/06/2019 21:54
Location (Intersection)	Rt 63 & Ferguson
Dist. & Dir. from Intersection	825.00 ft North
State Highway Info	Route Number 63 Side of Hwy S Postmile 9.800 Location Type H - Highway
Geocoded Location	36.35186, -119.2969589

Type of Crash	G - Vehicle/Pedestrian
Motor Vehicle Involved With	B - Pedestrian
Crash Severity	1 - Fatal
PCF Violation Category	11 - Pedestrian Violation
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	Yes	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	2 - Pedestrian	N - Pedestrian	Yes	East	L - Entering Traffic
2	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	No	South	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	3 - Pedestrian	F - Female	30	1 - Killed

BerkeleySafeTREC

Crash Details for: Case ID 8911868

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	08/27/2020 21:11
Location (Intersection)	Rt 63 & Shannon Pkwy
Dist. & Dir. from Intersection	403.00 ft South
State Highway Info	Route Number 63 Side of Hwy N Postmile 10.330 Location Type H - Highway
Geocoded Location	36.3594208, -119.2970047

Type of Crash	G - Vehicle/Pedestrian
Motor Vehicle Involved With	B - Pedestrian
Crash Severity	1 - Fatal
PCF Violation Category	11 - Pedestrian Violation
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	Yes	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	2 - Pedestrian	N - Pedestrian	Yes	South	L - Entering Traffic
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	3 - Pedestrian	M - Male	32	1 - Killed

BerkeleySafeTREC

Crash Details for: Case ID 8924057

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	07/15/2019 16:02
Location (Intersection)	Riggin & N Mooney Bl
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3564606, -119.3143005

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	F - Female	28	0 - No Injury
2	1 - Driver	M - Male	28	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8929263

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	07/26/2019 18:33
Location (Intersection)	W Riggin Av & N Giddings St
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3563995, -119.3057175

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	A - Stopped

Victims: 4

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	40	6 - Suspected Minor Injury
1	2 - Passenger	M - Male	15	0 - No Injury
1	2 - Passenger	M - Male	17	0 - No Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	F - Female	38	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 8967864

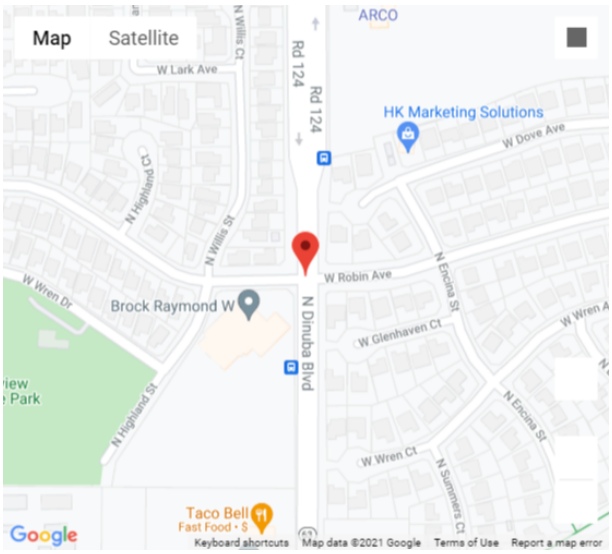
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	09/17/2019 12:52
Location (Intersection)	W Robin Av & Rt 63
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy N Postmile 9.910 Location Type I - Intersection
Geocoded Location	36.3534775, -119.2969742

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	West	L - Entering Traffic
2	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	No	North	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	M - Male	66	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 8968328

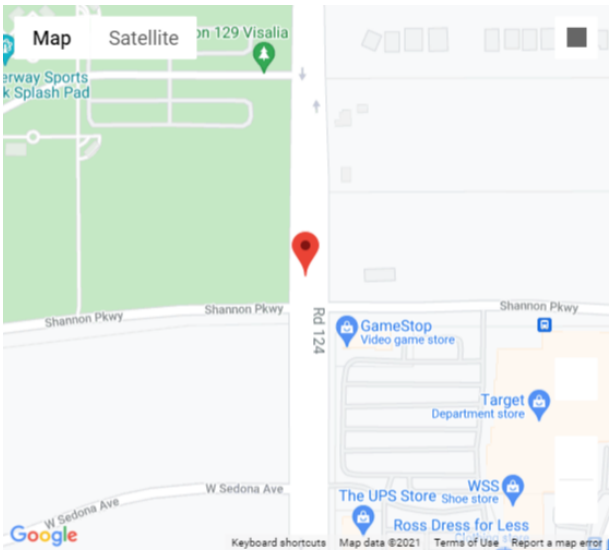
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	09/25/2019 19:19
Location (Intersection)	North Dinuba Bl & West Shannon Pkwy
Dist. & Dir. from Intersection	81.00 ft North
State Highway	No
Geocoded Location	36.3602562, -119.2970123

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	N - Crossed Into Opposing Lane
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	A - Stopped

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	F - Female	14	0 - No Injury
2	1 - Driver	M - Male	29	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 8972232

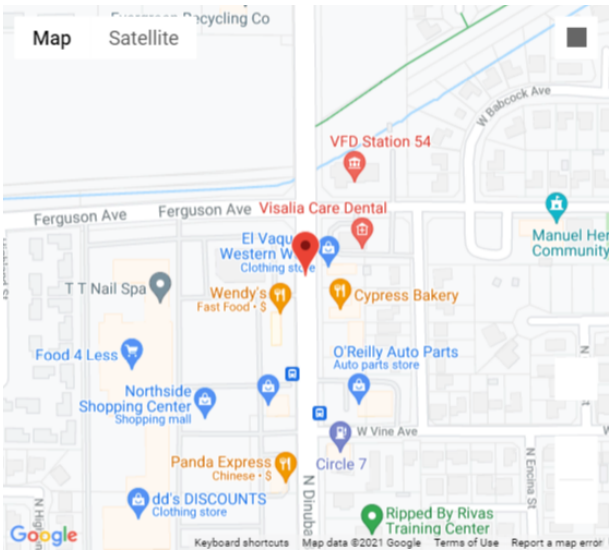
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	09/22/2019 11:59
Location (Intersection)	Dinuba & S Ferguson Av
Dist. & Dir. from Intersection	200.00 ft South
State Highway	No
Geocoded Location	36.3489723, -119.2969437

Type of Crash	F - Overturned
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	West	E - Making Left Turn
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	18	7 - Possible Injury
2	1 - Driver	F - Female	47	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9005046

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	11/09/2019 14:42
Location (Intersection)	N Dinuba Bl & W Riverway Av
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy N Postmile 10.620 Location Type I - Intersection
Geocoded Location	36.3636436, -119.29702

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	04 - Following Too Closely
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	E - Making Left Turn

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	M - Male	47	7 - Possible Injury
2	1 - Driver	M - Male	21	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9005414

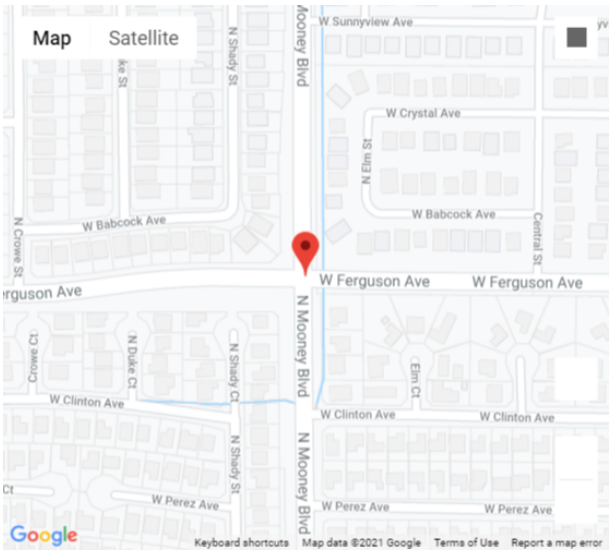
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	11/19/2019 15:21
Location (Intersection)	Mooney Bl & Ferguson
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3493195, -119.3142471

Type of Crash	D - Broadside
Motor Vehicle Involved With	A - Non-Collision
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	A - Stopped

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	51	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9005430

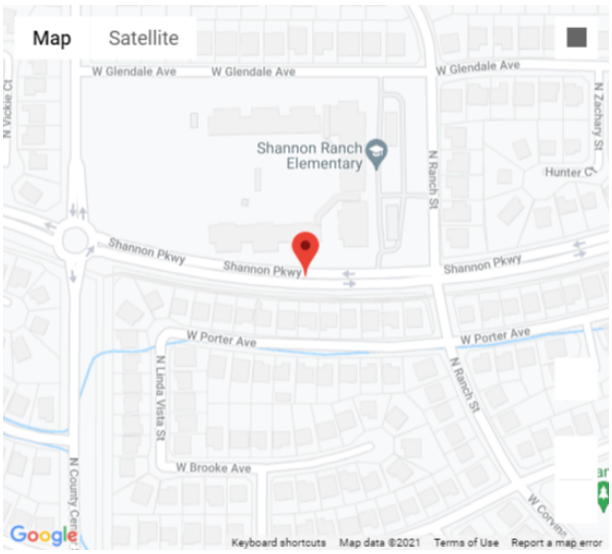
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	11/13/2019 08:03
Location (Intersection)	Shannon Pkwy & Ranch St
Dist. & Dir. from Intersection	375.00 ft West
State Highway	No
Geocoded Location	36.3608093, -119.3200302

Type of Crash	G - Vehicle/Pedestrian
Motor Vehicle Involved With	B - Pedestrian
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	11 - Pedestrian Violation
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	Yes	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	2 - Pedestrian	N - Pedestrian	Yes	North	R - Other
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	B - Proceeding Straight

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	3 - Pedestrian	F - Female	8	7 - Possible Injury
2	2 - Passenger	F - Female	12	0 - No Injury
2	2 - Passenger	F - Female	1	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 9005443

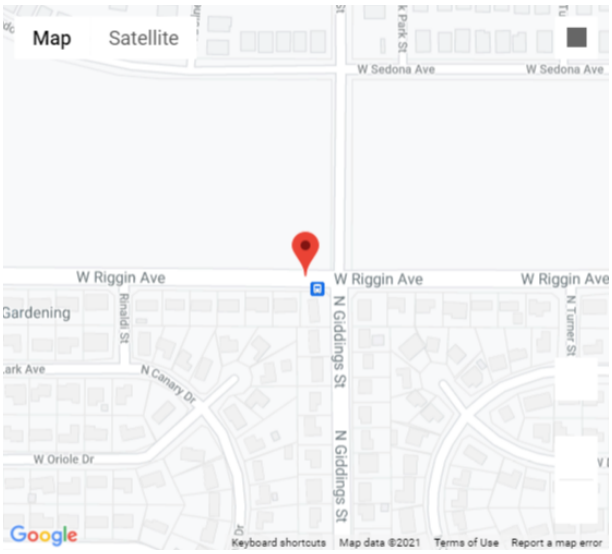
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	12/01/2019 13:03
Location (Intersection)	Riggin Av & N Giddings
Dist. & Dir. from Intersection	100.00 ft West
State Highway	No
Geocoded Location	36.3564034, -119.3060608

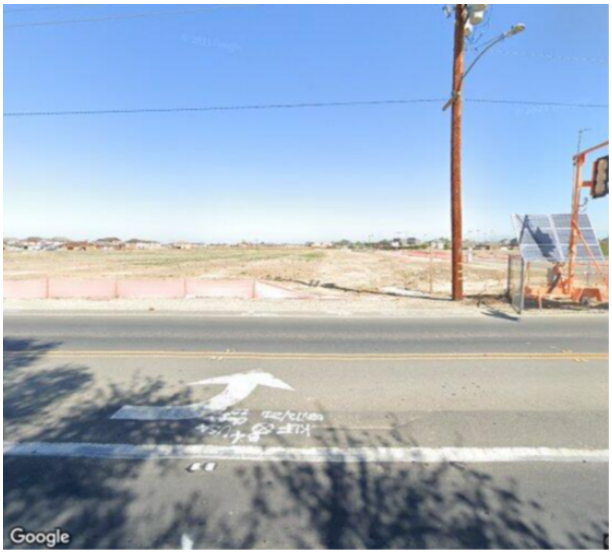
Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	03 - Unsafe Speed
Weather	B - Cloudy
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 3

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	A - Stopped
3	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	A - Stopped

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	F - Female	12	6 - Suspected Minor Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
3	2 - Passenger	M - Male	75	0 - No Injury
3	2 - Passenger	M - Male	8	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 9016257

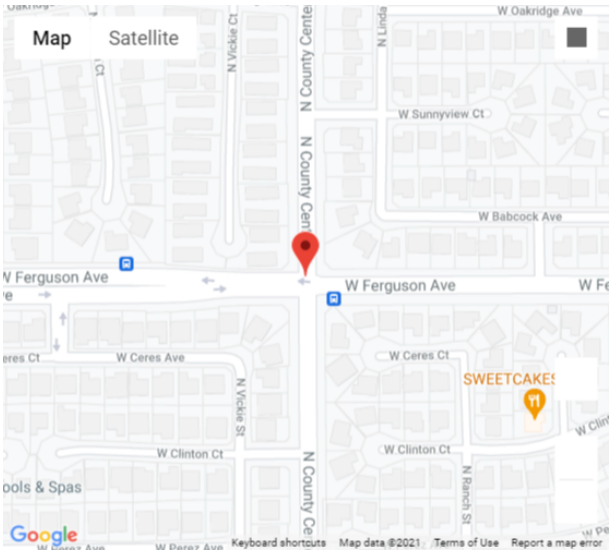
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	01/23/2020 12:51
Location (Intersection)	N County Center St & W Ferguson Av
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3492508, -119.3231583

Type of Crash	C - Rear End
Motor Vehicle Involved With	E - Parked Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	08 - Improper Turning
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	E - Making Left Turn
2	3 - Parked Vehicle	I - Other Bus	No	South	O - Parked

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	19	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9016837

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	01/27/2020 14:25
Location (Intersection)	N Demaree St & Riggin Av
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3565598, -119.3320313

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 3

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	B - Proceeding Straight
3	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	A - Stopped

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	F - Female	68	7 - Possible Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
3	2 - Passenger	M - Male	13	0 - No Injury

BerkeleySafeTREC

Crash Details for: Case ID 9035199

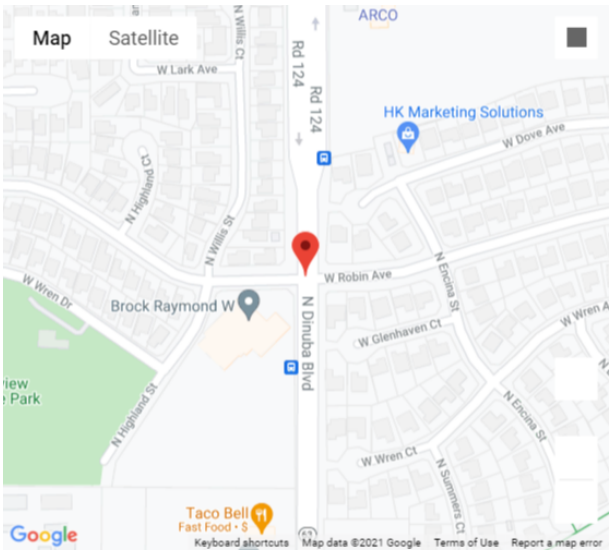
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	02/05/2020 19:29
Location (Intersection)	Rt 63 & W Robin
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy N Postmile 9.910 Location Type I - Intersection
Geocoded Location	36.3534775, -119.2969742

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 3

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	West	L - Entering Traffic
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	B - Proceeding Straight
3	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	19	7 - Possible Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	M - Male	23	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9080463

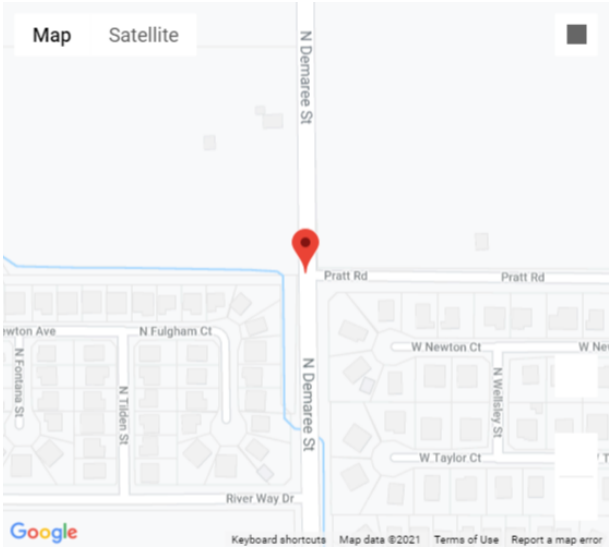
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	03/13/2020 17:15
Location (Intersection)	Demaree & Pratt
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3655891, -119.3321381

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	Yes	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	West	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	C - Motorcycle/Scooter	No	North	B - Proceeding Straight

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	M - Male	26	0 - No Injury
1	2 - Passenger	M - Male	35	0 - No Injury
2	1 - Driver	M - Male	26	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9080624

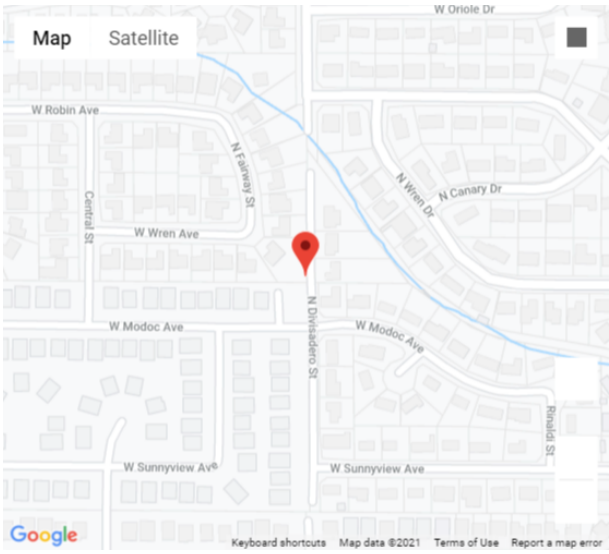
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	02/15/2020 04:44
Location (Intersection)	Divisadero & Modoc
Dist. & Dir. from Intersection	134.00 ft North
State Highway	No
Geocoded Location	36.3528366, -119.3099976

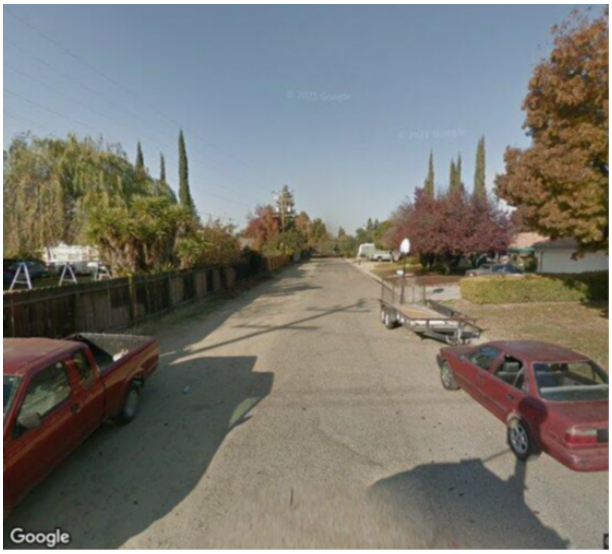
Type of Crash	C - Rear End
Motor Vehicle Involved With	E - Parked Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	07 - Unsafe Lane Change
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 3

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	N - Crossed Into Opposing Lane
2	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	North	- - Not Stated
3	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	North	- - Not Stated

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	18	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9080631

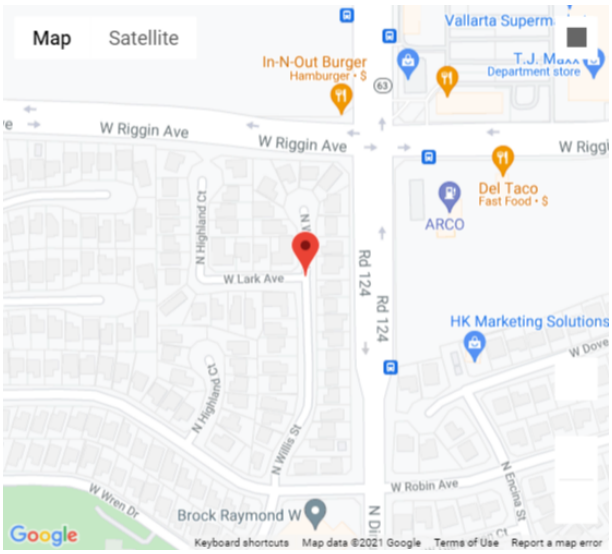
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	01/04/2020 02:47
Location (Intersection)	N Willis Ct & Lark
Dist. & Dir. from Intersection	16.00 ft North
State Highway	No
Geocoded Location	36.3551331, -119.2976303

Type of Crash	E - Hit Object
Motor Vehicle Involved With	I - Fixed Object
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	05 - Wrong Side of Road
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	B - Proceeding Straight
2	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	North	A - Stopped

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	31	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9093947

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	04/12/2020 20:48
Location (Intersection)	Riggin & Giddings
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3563995, -119.3057175

Type of Crash	A - Head-On
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	17 - Other Hazardous Violation
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	West	E - Making Left Turn
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	B - Proceeding Straight

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	20	6 - Suspected Minor Injury
1	2 - Passenger	F - Female	46	6 - Suspected Minor Injury
2	1 - Driver	F - Female	68	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9093948

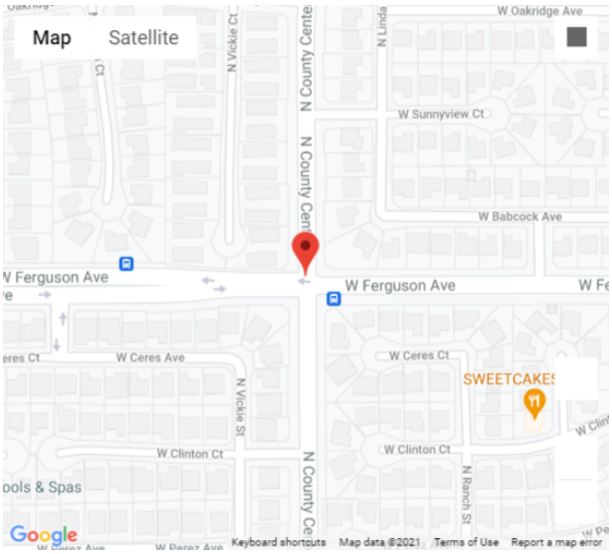
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	04/08/2020 15:46
Location (Intersection)	N County Center St & W Ferguson
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3492508, -119.3231583

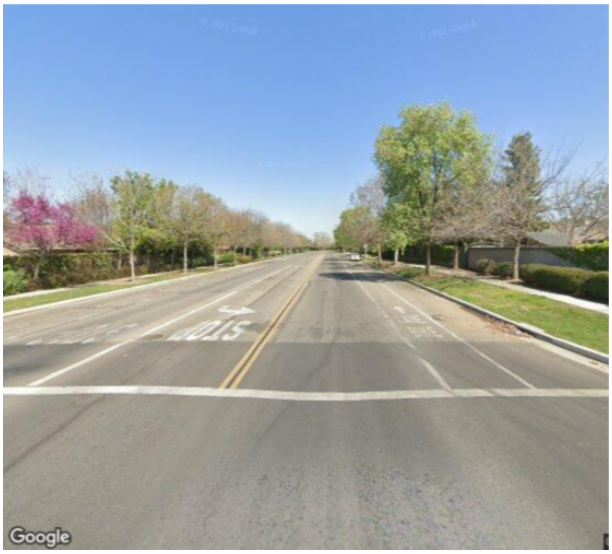
Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	B - Cloudy
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	B - Proceeding Straight

Victims: 5

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	F - Female	24	7 - Possible Injury
1	2 - Passenger	F - Female	30	6 - Suspected Minor Injury
2	2 - Passenger	M - Male	13	0 - No Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	F - Female	16	0 - No Injury
2	2 - Passenger	F - Female	42	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9093949

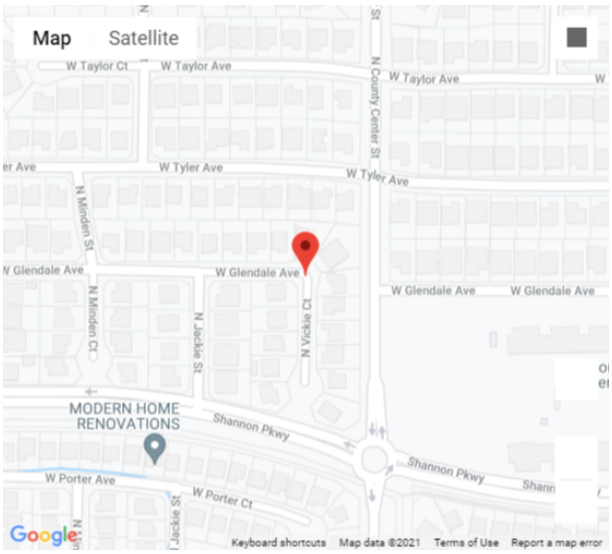
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	04/19/2020 19:40
Location (Intersection)	N Vickie & W Glendale
Dist. & Dir. from Intersection	12.00 ft South
State Highway	No
Geocoded Location	36.3625488, -119.3229675

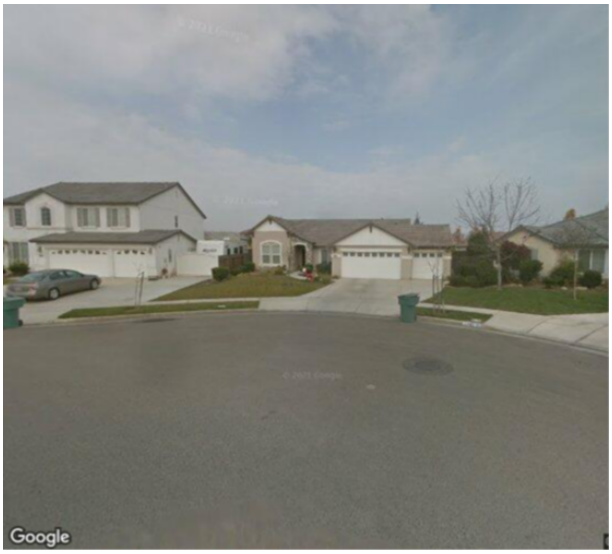
Type of Crash	F - Overturned
Motor Vehicle Involved With	E - Parked Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	C - Ran Off Road
2	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	-	O - Parked

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	19	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9093951

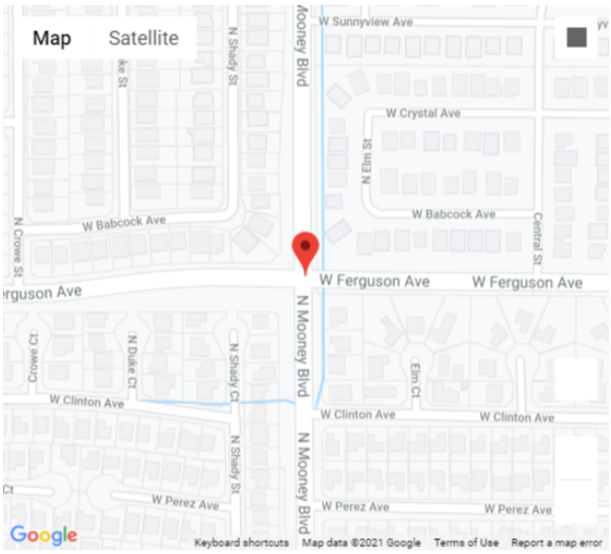
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	04/24/2020 22:23
Location (Intersection)	W Ferguson Av & Mooney
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3493195, -119.3142471

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	- - Not Stated	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	F - Female	47	0 - No Injury
2	2 - Passenger	F - Female	29	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9106861

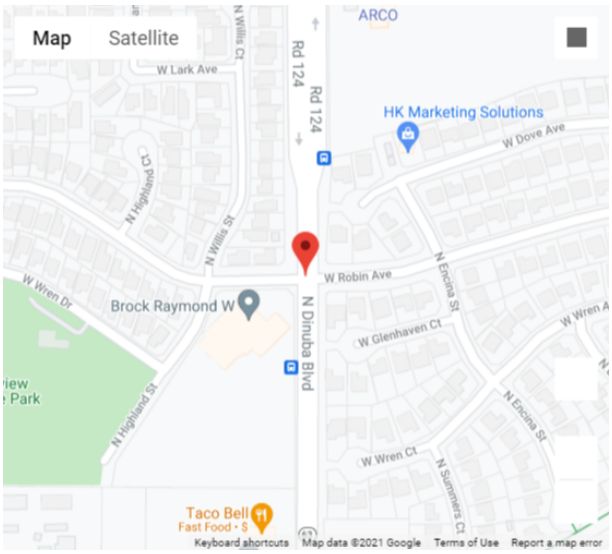
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	04/18/2020 23:40
Location (Intersection)	Rt 63 & Robin
Dist. & Dir. from Intersection	At Intersection
State Highway Info	Route Number 63 Side of Hwy S Postmile 9.910 Location Type I - Intersection
Geocoded Location	36.3534775, -119.2969742

Type of Crash	A - Head-On
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	2 - Injury (Severe)
PCF Violation Category	01 - Driving or Bicycling Under the Influence of Alcohol or Drug
Weather	B - Cloudy
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	-	- - Not Stated
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	- - Not Stated

Victims: 4

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	34	7 - Possible Injury
2	1 - Driver	M - Male	19	5 - Suspected Serious Injury
2	2 - Passenger	M - Male	21	5 - Suspected Serious Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	F - Female	20	5 - Suspected Serious Injury

BerkeleySafeTREC

Crash Details for: Case ID 9114911

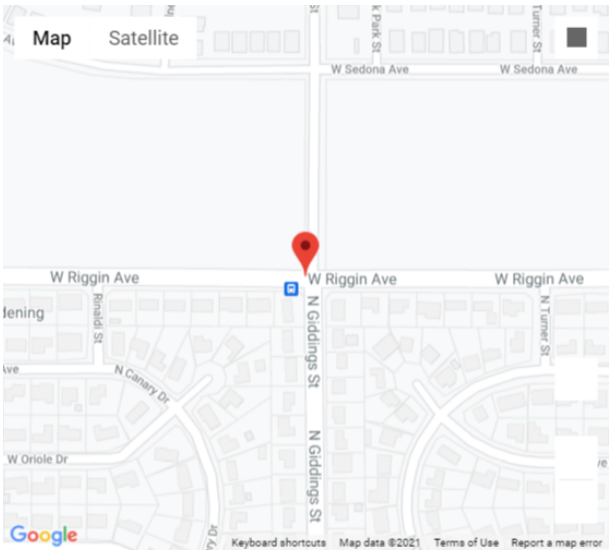
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	06/07/2020 23:45
Location (Intersection)	Riggin & Giddings
Dist. & Dir. from Intersection	24.00 ft West
State Highway	No
Geocoded Location	36.3563995, -119.3058014

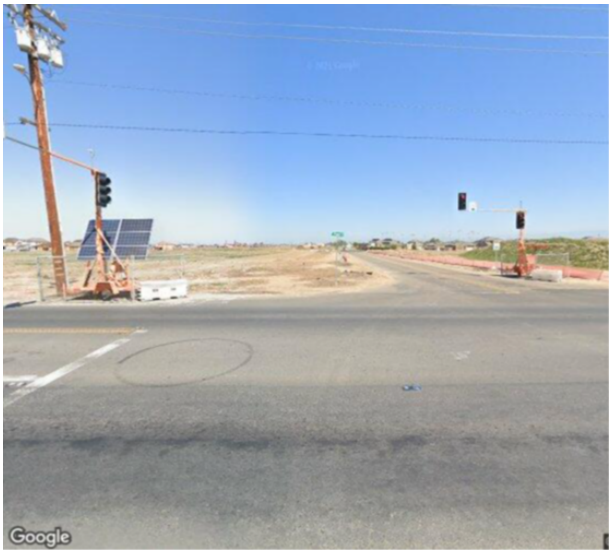
Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 3

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	East	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	A - Stopped
3	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	East	A - Stopped

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
3	1 - Driver	F - Female	32	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9114922

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	05/30/2020 15:29
Location (Intersection)	W Riggin Av & N Giddings
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3563995, -119.3057175

Type of Crash	D - Broadside
Motor Vehicle Involved With	G - Bicycle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	05 - Wrong Side of Road
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	Yes
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	4 - Bicyclist	L - Bicycle	Yes	West	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	D - Making Right Turn

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	4 - Bicyclist	M - Male	60	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9117886

Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	07/14/2020 17:36
Location (Intersection)	Rt 63 & Shannon Pkwy
Dist. & Dir. from Intersection	162.00 ft South
State Highway Info	Route Number 63 Side of Hwy N Postmile 10.330 Location Type H - Highway
Geocoded Location	36.3594208, -119.2970047

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View

Street View

Parties: 3

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	B - Passenger Car with Trailer	No	North	A - Stopped
3	1 - Driver (including Hit and Run)	B - Passenger Car with Trailer	No	North	A - Stopped

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	M - Male	68	7 - Possible Injury

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	2 - Passenger	F - Female	26	7 - Possible Injury
3	1 - Driver	F - Female	26	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9149836

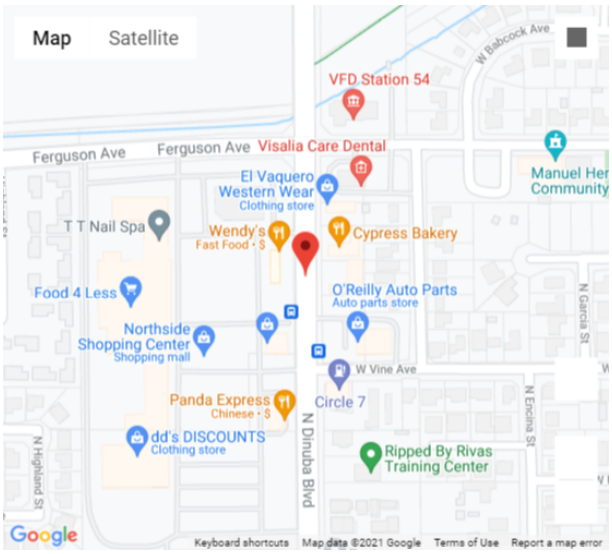
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	06/15/2020 12:30
Location (Intersection)	Rt 63 & Ferguson Av
Dist. & Dir. from Intersection	353.00 ft South
State Highway Info	Route Number 63 Side of Hwy N Postmile 9.570 Location Type H - Highway
Geocoded Location	36.3484764, -119.2969284

Type of Crash	F - Overturned
Motor Vehicle Involved With	I - Fixed Object
Crash Severity	2 - Injury (Severe)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	Yes

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 1

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	C - Ran Off Road

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	23	5 - Suspected Serious Injury

BerkeleySafeTREC

Crash Details for: Case ID 9180616

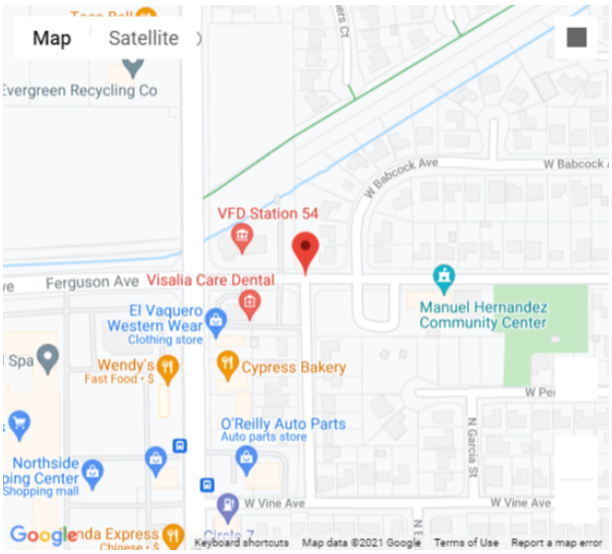
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	09/05/2020 10:23
Location (Intersection)	N Summers St & W Ferguson Av
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3495407, -119.2958374

Type of Crash	C - Rear End
Motor Vehicle Involved With	E - Parked Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	01 - Driving or Bicycling Under the Influence of Alcohol or Drug
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	-	B - Proceeding Straight
2	3 - Parked Vehicle	A - Passenger Car/Station Wagon	No	-	O - Parked

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	M - Male	41	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 9184440

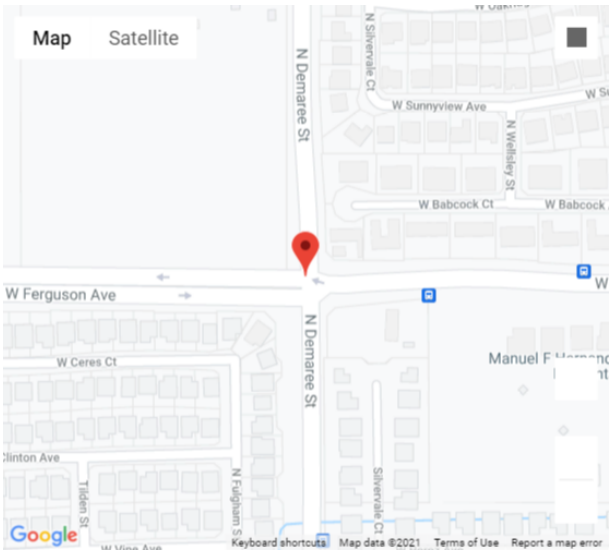
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	10/30/2020 23:11
Location (Intersection)	W Ferguson Av & N Demaree St
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3492203, -119.3319778

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	12 - Traffic Signals and Signs
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	Yes

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	-	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	F - Truck or Truck Tractor	No	East	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	M - Male	44	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9197595

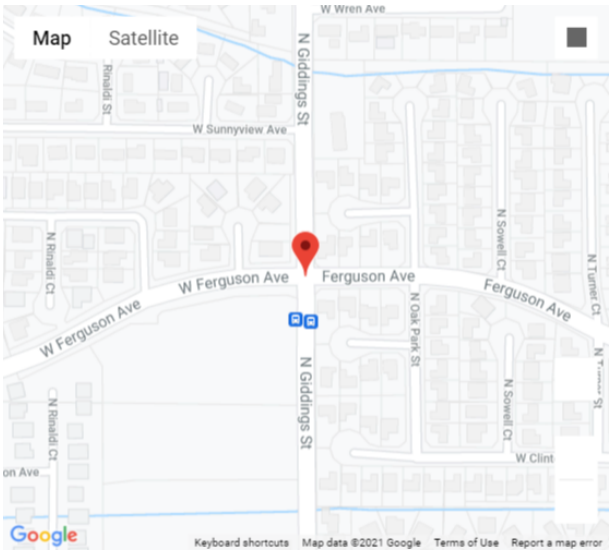
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	11/17/2020 19:26
Location (Intersection)	N Giddings St & W Ferguson Av
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.350132, -119.3056488

Type of Crash	G - Vehicle/Pedestrian
Motor Vehicle Involved With	B - Pedestrian
Crash Severity	2 - Injury (Severe)
PCF Violation Category	10 - Pedestrian Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	Yes	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	Yes	-	D - Making Right Turn
2	2 - Pedestrian	N - Pedestrian	No	-	- - Not Stated

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	3 - Pedestrian	M - Male	30	5 - Suspected Serious Injury

BerkeleySafeTREC

Crash Details for: Case ID 9203931

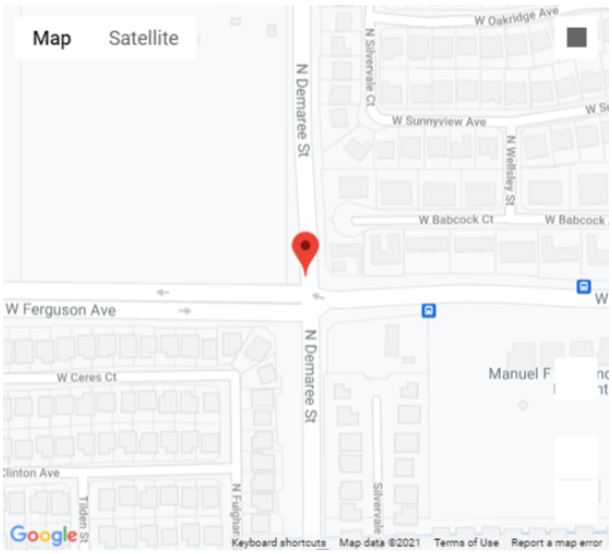
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	12/08/2020 11:36
Location (Intersection)	Demaree St & Ferguson Av
Dist. & Dir. from Intersection	45.00 ft North
State Highway	No
Geocoded Location	36.3493423, -119.3319778

Type of Crash	C - Rear End
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	03 - Unsafe Speed
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	South	B - Proceeding Straight
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	South	A - Stopped

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
2	1 - Driver	F - Female	38	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9204084

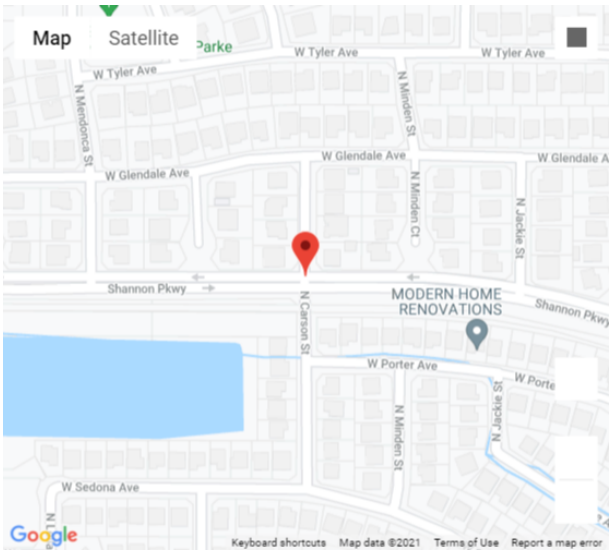
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	11/27/2020 10:07
Location (Intersection)	W Shannon Pkwy & Carson
Dist. & Dir. from Intersection	At Intersection
State Highway	No
Geocoded Location	36.3616409, -119.3261414

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	E - Making Left Turn
2	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	West	B - Proceeding Straight

Victims: 2

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	1 - Driver	F - Female	60	6 - Suspected Minor Injury
2	1 - Driver	F - Female	68	7 - Possible Injury

BerkeleySafeTREC

Crash Details for: Case ID 9208269

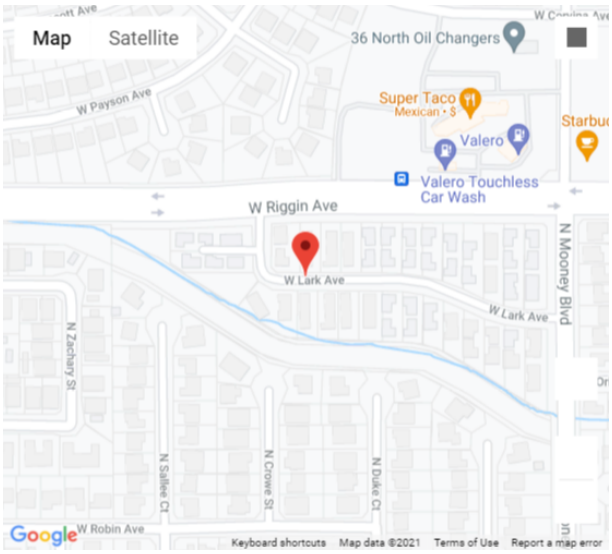
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	09/24/2020 15:05
Location (Intersection)	W Lark Av & N Crowe St
Dist. & Dir. from Intersection	114.00 ft East
State Highway	No
Geocoded Location	36.3558388, -119.3168411

Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	3 - Injury (Other Visible)
PCF Violation Category	09 - Automobile Right of Way
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	Yes
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View

Parties: 2

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	4 - Bicyclist	L - Bicycle	Yes	North	B - Proceeding Straight
2	- - Not Stated	- - Not Stated	No	-	B - Proceeding Straight

Victims: 1

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	4 - Bicyclist	M - Male	8	6 - Suspected Minor Injury

BerkeleySafeTREC

Crash Details for: Case ID 90745538

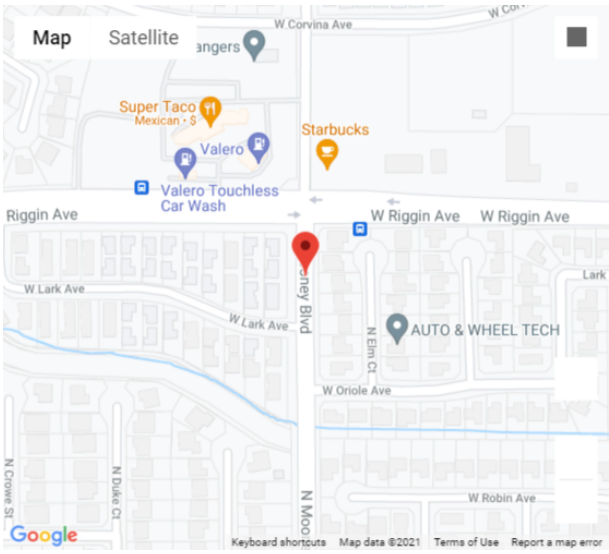
Crash Information

County	Tulare
City	Visalia
Date & Time (M/D/Y)	06/01/2018 12:55
Location (Intersection)	Mooney Blvd & Corvina Avenue
Dist. & Dir. from Intersection	200.00 ft South
State Highway	No
Geocoded Location	36.3559113, -119.3142929

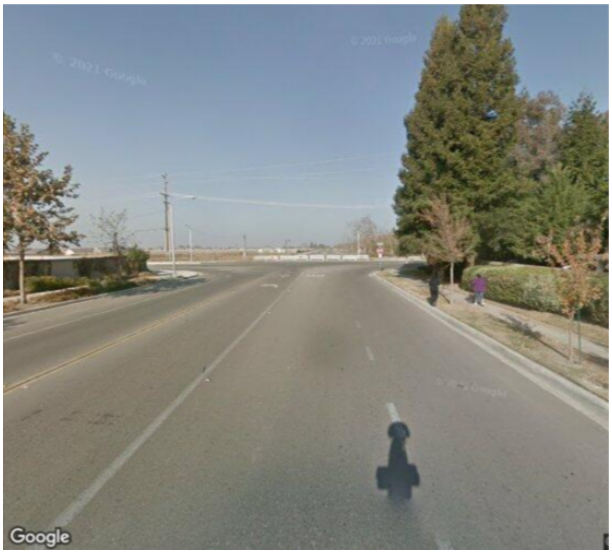
Type of Crash	D - Broadside
Motor Vehicle Involved With	C - Other Motor Vehicle
Crash Severity	4 - Injury (Complaint of Pain)
PCF Violation Category	08 - Improper Turning
Weather	A - Clear
Alcohol Involved	No

Pedestrian Accident	No	**Bicycle Accident**	No
Motorcycle Accident	No	**Truck Accident**	No

Map View



Street View



Parties: 4

Party Number	Party Type	Statewide Vehicle Type	At Fault	Party Direction	Movement Preceding Collision
1	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	Yes	North	E - Making Left Turn
2	1 - Driver (including Hit and Run)	D - Pickup or Panel Truck	No	South	B - Proceeding Straight
3	1 - Driver (including Hit and Run)	H - Schoolbus	No	South	B - Proceeding Straight
4	1 - Driver (including Hit and Run)	A - Passenger Car/Station Wagon	No	North	A - Stopped

Victims: 3

Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury

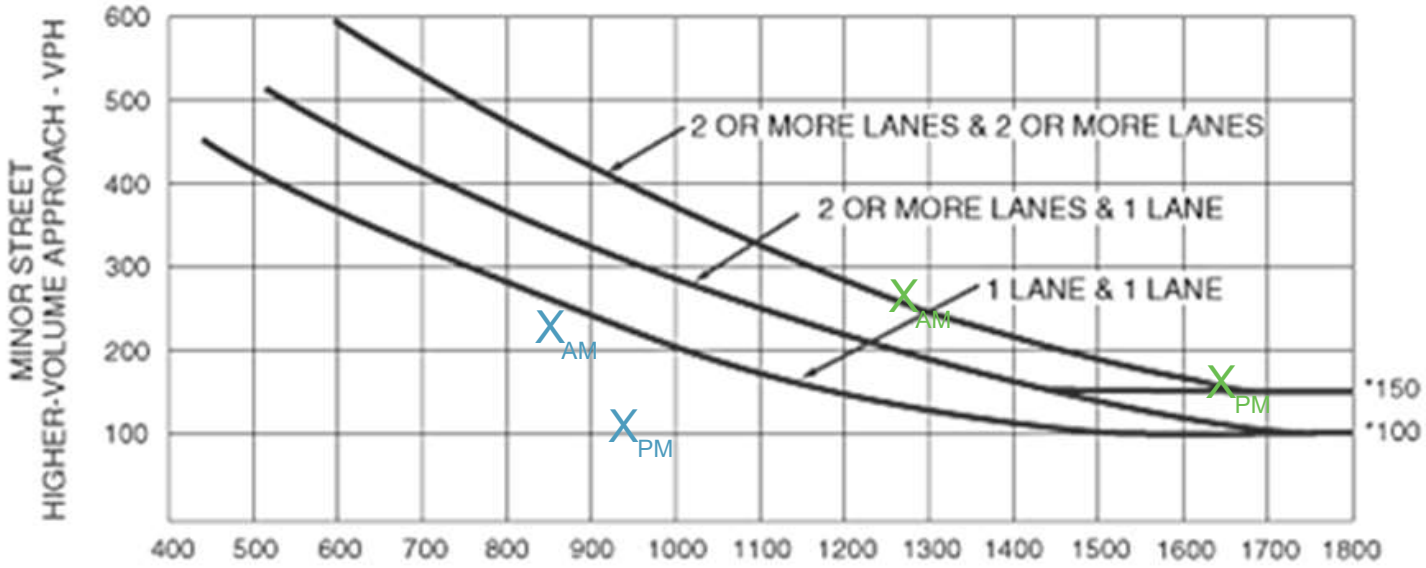
Party Number	Victim Role	Victim Gender	Victim Age	Victim Degree of Injury
1	2 - Passenger	M - Male	5	7 - Possible Injury
2	2 - Passenger	M - Male	11	7 - Possible Injury
2	2 - Passenger	F - Female	9	7 - Possible Injury

APPENDIX D

Signal Warrant Analysis

Riggin Avenue / Giddings Street

Figure 4C-3. Warrant 3, Peak Hour

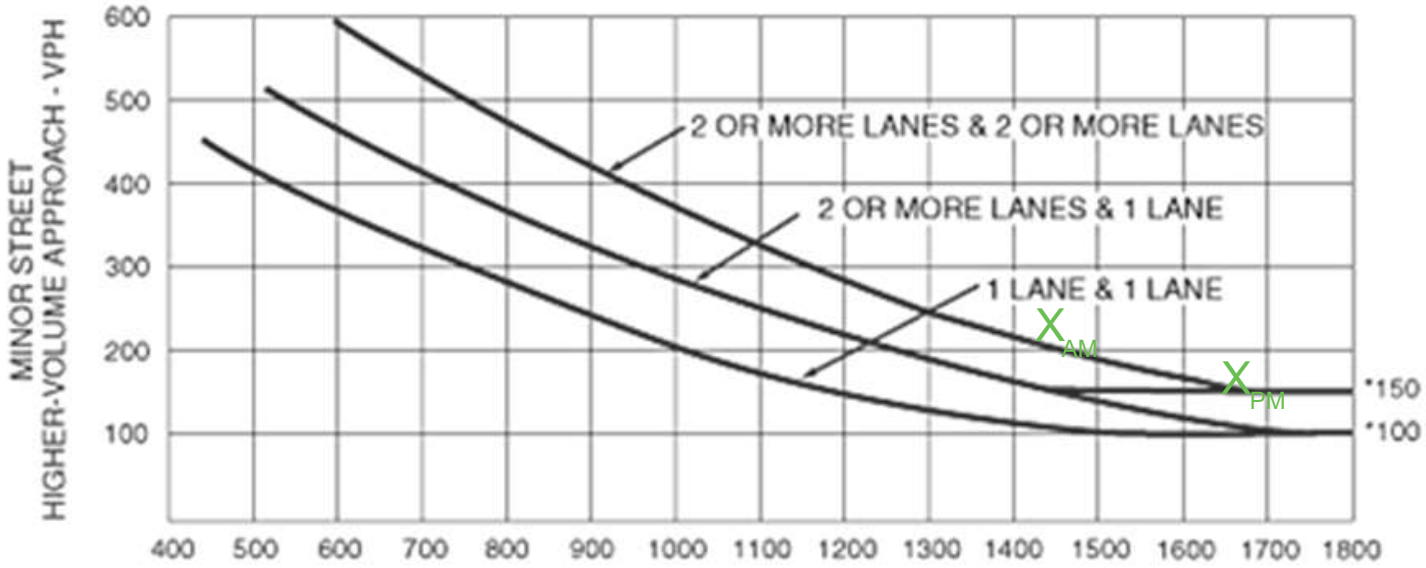


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND
X_{AM} X_{PM} Existing
X_{AM} X_{PM} Opening Year Without Project

Riggin Avenue / County Center Street

Figure 4C-3. Warrant 3, Peak Hour

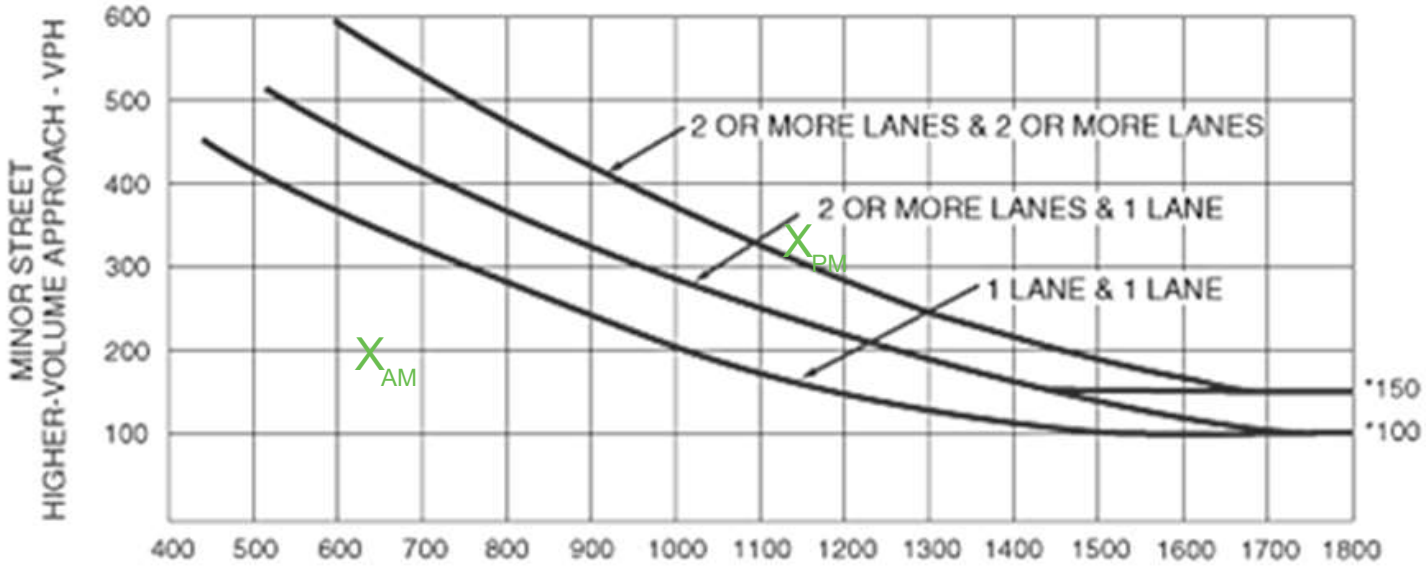


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND
X_{AM} X_{PM} Opening Year Without Project

Ferguson Avenue / Mooney Boulevard

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND
X_{AM} X_{PM} Opening Year Without Project

APPENDIX E

Vehicle Miles Traveled Model Run

Subject: Pratt Ranch VMT results
Date: Wed, 10 Nov 2021 20:30:57 +0000
From: Kasia A Poleszczuk <KPoleszczuk@tularecag.ca.gov>
To: Ernie Escobedo <Ernie.Escobedo@qkinc.com>, Derek M Winning <DWinning@tularecag.ca.gov>, Roberto Brady <rbrady@tularecag.ca.gov>
Cc: "eruehr@vrpatechnologies.com" <eruehr@vrpatechnologies.com>, Jeff Stine <jstine@vrpatechnologies.com>

Hi Ernie,

Here are the results:

TCAG 2021 Travel Demand Model

		VMT/per capita	VMT/per employee	VMT/per service population
TCAG Region		11.7	7.9	28.4
Visalia	16%	9.8	6.7	23.9
Pratt Ranch		8.4		

Let me know if you have any questions.

WATER SUPPLY ASSESSMENT - AMENDMENT

D.R. HORTON, INC.

PRATT FAMILY RANCH

JULY 2022 AMENDMENT

WATER SUPPLY ASSESSMENT - AMENDMENT

PRATT FAMILY RANCH

Prepared for:

D.R. Horton, Inc.
419 Murray Avenue
Visalia, CA 93291
Phone: (559) 713-46356

Consultant:

601 Pollasky Avenue, Suite 301
Clovis, CA 93612
Contact: Ernie Escobedo
Brian G. Shoener, P.E.
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July 2022

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Project #200180

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SECTION 1 - INTRODUCTION

1.1 - Regulatory Requirement

Senate Bill 610 (Chapter 643, Statutes of 2001) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and land use decisions made by cities and counties. The statute requires detailed information regarding water availability to be provided to city and county decision-makers prior to approval of specified large development projects which are subject to CEQA (the California Environmental Quality Act) approval. These include residential, commercial, and industrial uses. The statute also requires this detailed information to be included in the administrative record that serves as the evidentiary basis for an entitlement action by the city or county on such projects. The statute-required water supply assessment (WSA) must examine the availability and sufficiency of an identified water supply under normal-year, single-dry-year, and multiple-dry-year conditions over a 20-year projection, accounting for the projected water demand of the Project in addition to other existing and planned future uses of the identified water supply.

The State Department of Water Resources "Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001" (Guidebook) and the sample format presented in the Guidebook were used as guides in preparing this water supply assessment. Pertinent excerpts from the law stipulating requirements for water supply assessments precede Sections of this report. The full text of Chapter 643, Statutes of 2001 (SB 610) is included in Appendix A.

1.2 - Project Description and Location

The Project is a 94.6-acre residential development, to be developed by D.R. Horton, Inc on a site north of Visalia. The project site is located on the corner of Pratt Road and North Mooney Boulevard (Figures 1-1 and 1-2). The Project is within the Southwest corner of Section 18, Township 18 South, Range 25 East.

The subdivision on the proposed Project site will include ninety 50' x 100' lots (17.97 gross acres), and two hundred six 38' x 72' lots (19.90 gross acres), 1.06 acres of private park, 1.14 acres of public park, and five landscape lots totaling 1.86 gross acres (Figure 1-3).

The proposed Project site is currently agriculture and is bounded by the Saint Johns River to the north, rural/uncultivated agricultural land to the east and west, and single-family residential communities to the south. The Visalia General Plan designates Project site as R-M-2 (Medium Density Residential) and R-1-5 (Low Density Residential). The Project site has a zone classification of R-1-5, R-M-2, and QP (Quasi-public).

1.3 - Project Water Requirements and Setting

Water needed for construction will be obtained from the California Water Service - Visalia Water District which obtains groundwater from wells located on land within the City of Visalia. The current water distribution system is adjacent to the project site. The

construction process is estimated to take approximately 24 months. Construction water demands are estimated to be approximately 38 acre-feet, which is equivalent to approximately 12,380,000 gallons. Bottled drinking water will be provided for crews during construction activities.

Initial construction water usage will be in support of site preparation and grading activities. During earthwork for grading of access road foundations, building foundations and project components, the principal use of water would be for compaction and dust control. Smaller quantities would be required for preparation of the concrete required for foundations and other minor uses. After the earthwork activities, water usage will be used for dust suppression and normal construction water requirements that are associated with construction of the buildings, internal access roads, and revegetation.

The long-term average day operational water demand will be for the residential users and is anticipated to be approximately 118.917 million gallons per year or 364.94 acre-feet per year for the total build out of the Project. This is based on residential users having an average day water demand of 150 gallons per day/bedroom across the entire estimated bedroom count of 2,172 for the buildout of the site.

Figures 1-4 and 1-5 illustrate the location of the Project site within the Tulare Lake Hydrologic Region, the San Joaquin Valley Groundwater Basin and the Kaweah Subbasin, and the borders of these water resource areas. Construction and operational water for the Project will be from sources pumping groundwater from this basin. The Kaweah Subbasin does not have any adjudicated areas.

The initial Pratt Family WSA was submitted in March 2022. Comments were received from the City of Visalia in June 2022. This July 2022 amendment to the Pratt Family WSA is being issued to address City comments.

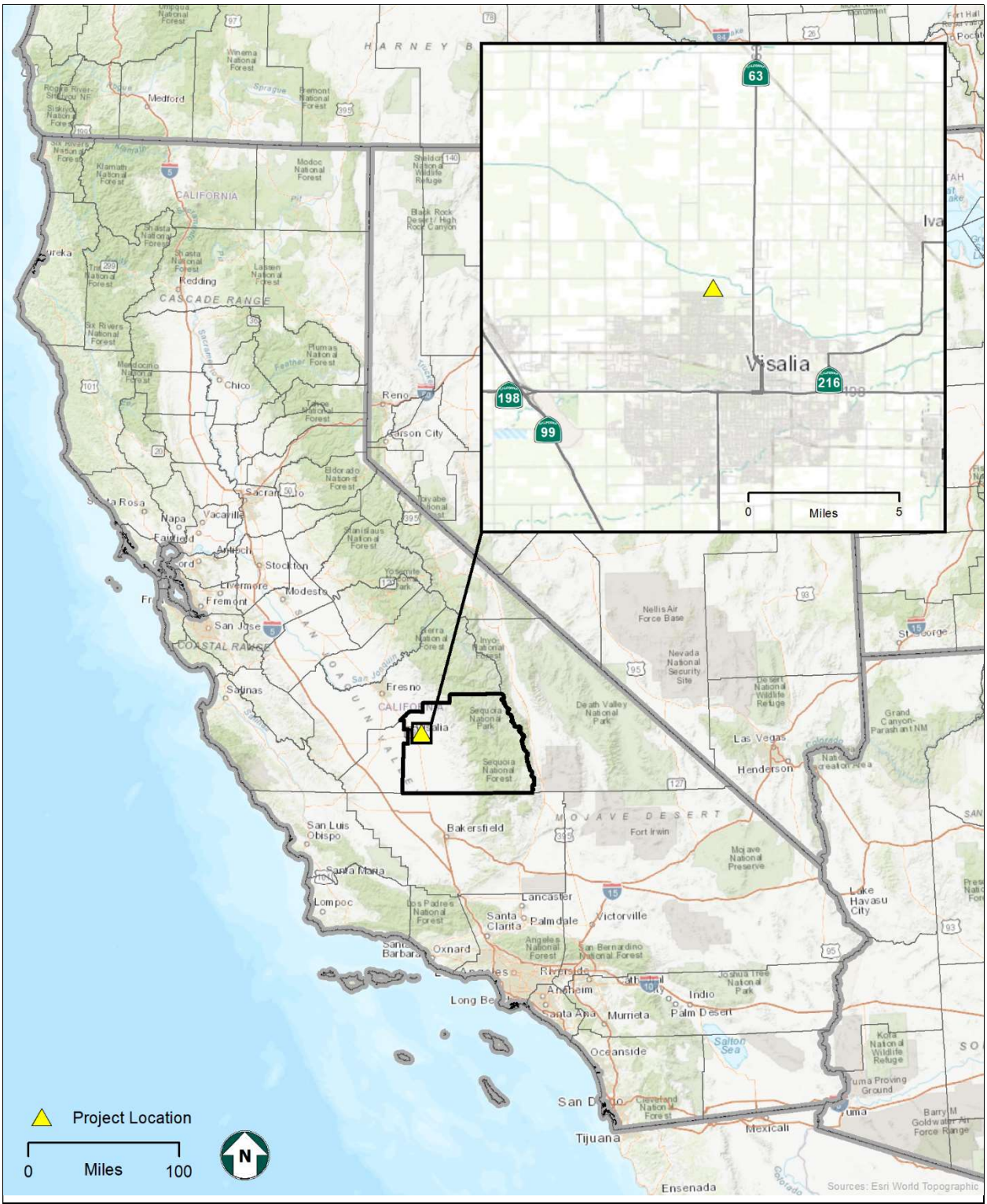

Figure 1-1
Regional Location

Figure 1-2
Project Site

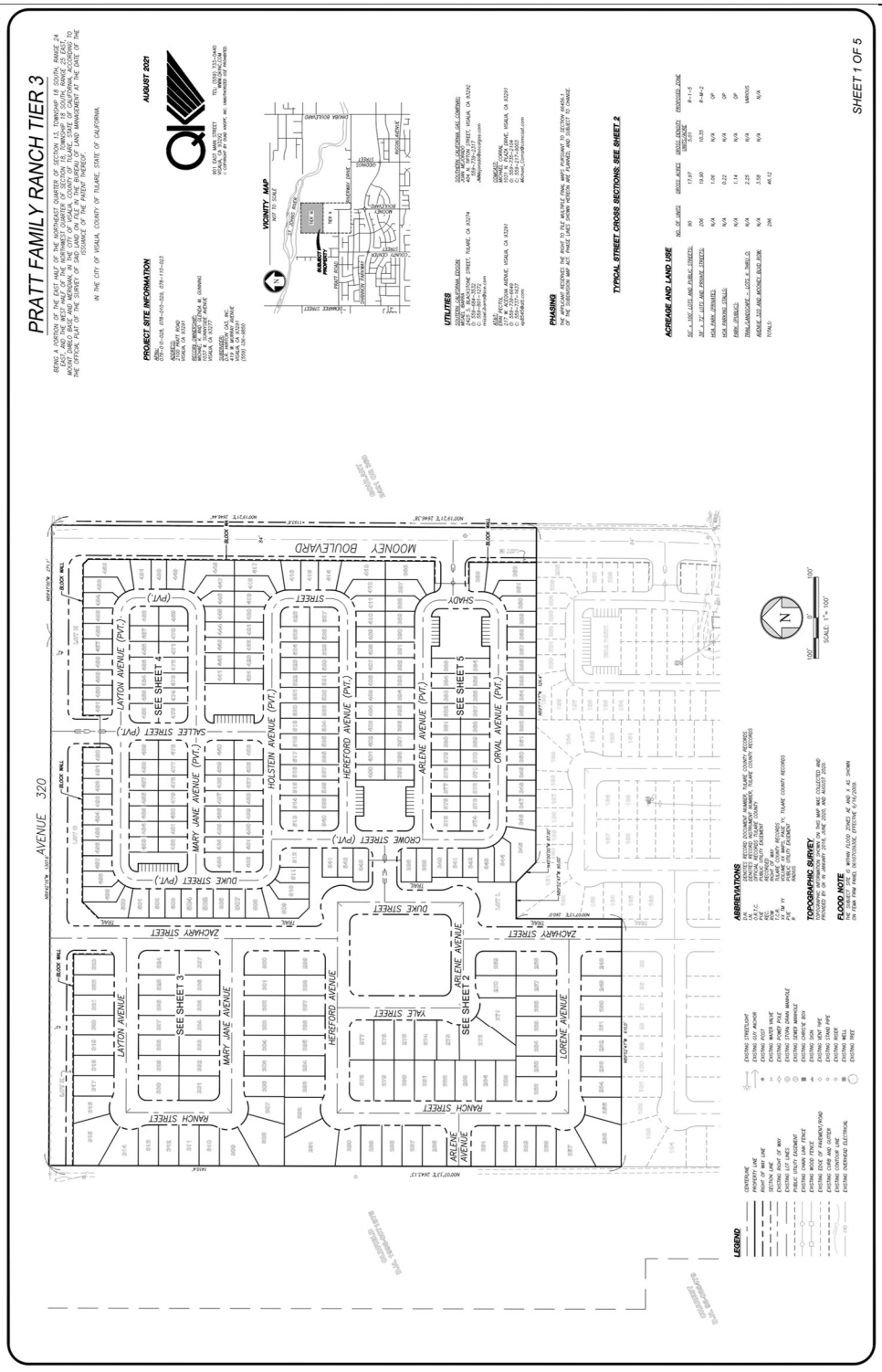

Figure 1-3
Project Site – By Phase

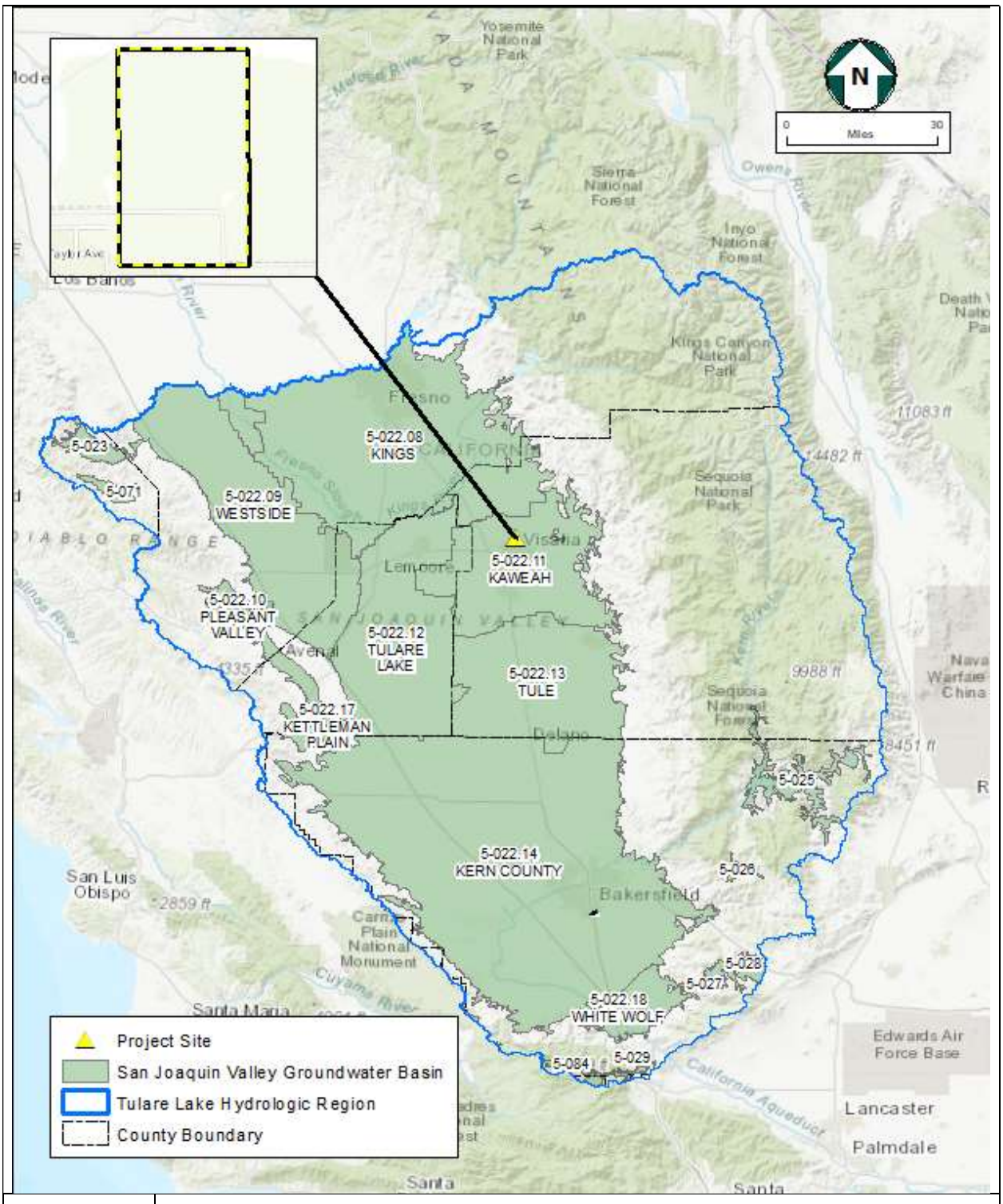

Figure 1-4
Project Location: Tulare Lake Hydrologic Region

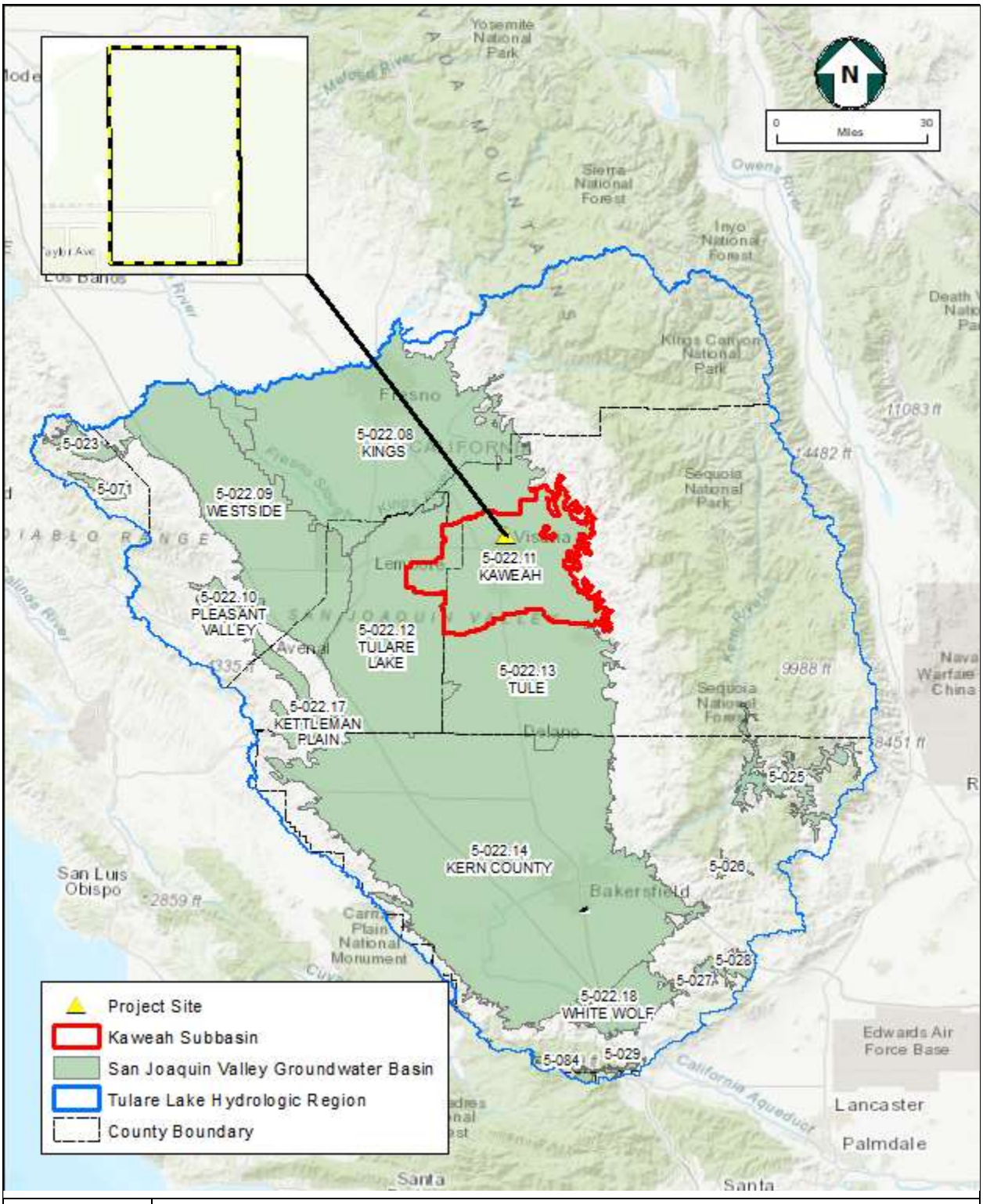

Figure 1-5
Project Location: Kaweah Groundwater Subbasin

SECTION 2 - WATER RESOURCES/WATER SUPPLY

2.1 - Proposed Water Supply

The project will be served by a public water system as required by Water Code section 10910(b). The purpose of the Water Supply Assessment is to determine "If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g). If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses." (SB610, Appendix A, Page 10)

The California Water Service - Visalia Water District is required to adopt an urban water management plan since the district serves more than 3,000 connections. The 2020 UWMP will be used for this water supply assessment. The 2020 UWMP will be used to obtain the following:

> "a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project."

In making the sufficiency determination, the public water system shall include an assessment of the following. It is assumed that the California Water Service - Visalia Water District will supply water during construction and for the developed properties via the district's existing wells and distribution system.

Water Code Section 10910

> (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.
>
> (b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system whose service area includes the project site and any water system adjacent to the project

site that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

The Project area consists of three General Plan land use designations: Residential Low Density, Residential Medium Density, and Open Space. The long-term average day operational water demand will be for the residential users and is anticipated to be approximately 118.917 million gallons per year or 364.94 acre-feet per year for the total build out of the Project. This is based on residential users having an average day water demand of 150 gallons per day/bedroom across the entire estimated bedroom count of 2,172 for the buildout of the site.

Project water supply during construction and for the developed properties is proposed to be from the California Water Service - Visalia Water District.

2.2 - Hydrologic Region

The Water Supply Assessment evaluates the physical availability of and adequate groundwater supply, in all "water years" for a 20-year period.

This Assessment describes the relevant Hydrologic Region, Basin, and Subbasin, describes the principal water agency (California Water Service - Visalia Water District) serving and regulating Basin water planning and surface water importation, and lists water sufficiency and planning documents regarding the Basin. Section 3 includes the latest (2020) California Water Service - Visalia Water District projection of water availability (ground) for the Basin for a 20-year period under the normal, single dry and multiple dry year scenarios, as required by SB 610.

Water Code Section 10910

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2)(A) A description of any groundwater basin or basins from which the proposed project will be supplied.

(B) For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree.

(C) For a basin that has not been adjudicated that is a basin designated as high- or medium-priority pursuant to Section 10722.4 , information regarding the following:

(i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924 .

(ii) If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan.

(D) For a basin that has not been adjudicated that is a basin designated as low- or very low priority pursuant to Section 10722.4 , information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the

groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

2.2.1 - THE TULARE LAKE HYDROLOGIC REGION

The California Department of Water Resources, (DWR) has divided the State into 10 Hydrologic Regions. The Project site is located within the Tulare Lake Hydrologic Region in a Basin ranked as "high priority" in a statewide ranking of groundwater importance. The Region encompasses approximately 16,800 square miles (see Figure 1-4).

2.2.2 - THE KAWEAH GROUNDWATER SUBBASIN

The Kaweah subbasin occupies approximately 696 square miles within the Tulare Lake Region (see Figure 2-1). The Kaweah subbasin is bounded on the north by the Kings subbasin, on the south by the Tule subbasin, on the east by crystalline bedrock of the Sierra Nevada foothills, and on the west by the Tulare Lake subbasin.

Groundwater in the Basin is used for all water supply for the California Water Service - Visalia Water District. California Water Service – Visalia Water District participates with the Kaweah Delta Water Conservation District (KDWCD), the City of Visalia, and the relevant Groundwater Sustainability Agencies (GSAs). KDWCD has historically focused on the conservation of flows of the Kaweah River for groundwater recharge. California Water Service is also a stakeholder group participant to Kaweah River Basin Integrated Regional Water Management Plan, which was updated most recently in 2018.

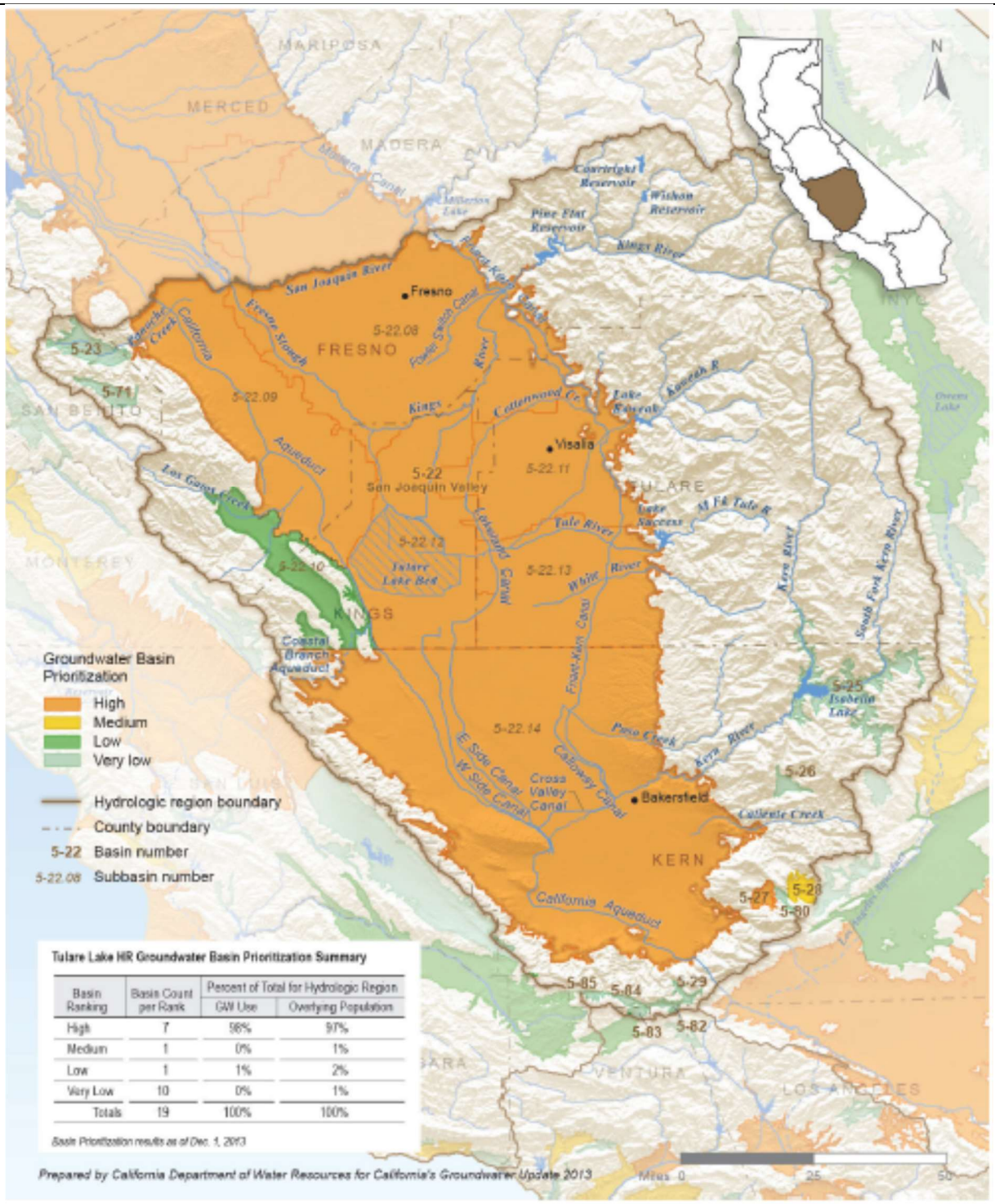

Figure 2-1
Tulare Lake Groundwater Basin Prioritization

2.3 - California Water Service - Visalia Water District – 2020 UWMP

The proposed water for the project is located within Visalia Water District. As such, the Visalia Water District has detailed information regarding groundwater in the area.

The District currently has a service population of approximately 147,032 people. In 2020, approximately 30,152 acre-feet of water was delivered to an estimated 45,550 water service connections of which approximately 69% of the water use is for residential services. The remainder are for commercial and industrial uses.

The District currently utilizes local groundwater as its sole source of water supply. Groundwater is extracted by 59 wells located within the District's sphere of influence. In addition to production wells, the District has four surface storage structures.

The Planning Documents

The following documents were essential to the development of this report:

- Visalia District, 2020 Urban Water Management Plan, June 2021
- Mid-Kaweah GSA Groundwater Sustainability Plan (GSP), January 2020
- Department of Water Resources Bulletin 118

SECTION 3 - WATER SUPPLY SUFFICIENCY

Water Code Section 10910, Section 4.5

…©(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single, dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

The sufficiency of the Project water supply is analyzed on two bases: the physical availability of the District to provide water in the amounts required for Project construction and operation; and the estimates (in the 2020 Visalia Water District, Urban Water Management Plan) of normal water years, single dry water year and multiple dry water years, water supply and demand-related water availability with respect to projected water demand during a 20-year projection. The Visalia Water District is a participant of the Mid-Kaweah Groundwater Sustainability Agency (MKGSA) and Greater Kaweah Groundwater Sustainability Agency (GKGSA) Groundwater Sustainability Plans (GSP) that were developed in January 2020. The 2020 Urban Water Management Plan is in compliance with the MKGSA and GKGSA GSPs.

3.1 - Physical Availability

The information regarding the physical availability of water at and near to the Project site supports the conclusion that the groundwater aquifer pumping history are sufficient for both Project construction and Project operation and that there will be sufficient water to serve project needs for 20 years under the water scenarios described below.

3.2 - The 2020 California Water Service - Visalia Water District, Urban Water Management Plan – Water Years Adequacy Projections

The following text excerpted from the Urban Water Management Plan illustrates the total groundwater resources available to the District, and the projected usage demand on such supplies through 2045. The following text extract from Page 59, Section 6.2.5 of the 2020 UWMP explains the District water supply adequacy.

> *The groundwater used by the Visalia District is extracted from the underlying Kaweah and Tule Subbasins. The District has a total of 59 active wells located within the Visalia PWS, two wells within the Mullen PWS, and one well within the Tulco PWS.*

As noted above, groundwater is the only source of supply for the Visalia district. The available groundwater supply has been sufficient to meet all of the District's demands in the past five years and all prior years.

The following tables from the 2020 California Water Service - Visalia Water District Urban Water Master Plan show the supply and demand comparisons for a normal year, single dry year, and five consecutive dry years.

3.2.1 - AVERAGE (OR NORMAL) YEAR

Normal year supply and demand projections and differences are presented in Table 3-1 (UWMP Table 7-2, Page 84).

Table 3-1
Retail: Normal Year Supply and Demand Comparison

Submittal Table 3-1 Retail: Normal Year Supply and Demand Comparison (MG)					
	2025	2030	2035	2040	2045
Supply totals	10,597	11,495	12,483	13,444	14,510
Demand totals	10,597	11,495	12,483	13,444	14,510
Difference	0	0	0	0	0

As shown in Table 3-1, future water supplies are anticipated to be meet.

3.2.2 - SINGLE DRY YEAR

Projected supplies were compared to the increased demands for a single-dry year and are presented in Table 3-2 (UWMP Table 7-3, Page 84).

Table 3-2
Retail: Single Dry Year Supply and Demand Comparison

Submittal Table 3-2 Retail: Single Dry Year Supply and Demand Comparison (MG)					
	2025	2030	2035	2040	2045
Supply totals	10,803	11,718	12,726	13,706	14,823
Demand totals	10,803	11,718	12,726	13,706	14,823
Difference	0	0	0	0	0

As shown in Table 3-2, anticipated groundwater supplies are sufficient to meet all demands through the year 2045 even under single-year drought conditions.

3.2.3 - Five Consecutive Dry-Year Reliability Assessment

Projected supplies were compared to the increased demands for five-consecutive dry-year scenarios and are presented in Table 3-3 (UWMP Table 7-4, Page 85).

Table 3-3
Retail: Five Consecutive Dry Years Supply and Demand Comparison

Submittal Table 3-3 Retail: Multiple Dry Years Supply and Demand Comparison (MG)						
		2025	2030	2035	2040	2045
First year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0
Second year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0
Third year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0
Fourth year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0
Fifth year	Supply totals	10,930	11,857	12,878	13,869	14,969
	Demand totals	10,930	11,857	12,878	13,869	14,969
	Difference	0	0	0	0	0

As shown in Table 3-3, anticipated groundwater supplies are sufficient to meet all demands through the year 2045 even under multiple-dry year drought conditions.

The long-term operational water demand will be for the residential users and is anticipated to be approximately 118.917 million gallons per year or 364.94 acre-feet per year for the total build out of the Project. This is based on residential users having a water demand of 150 gallons per day/bedroom across the entire estimated room count of 2,172 for the site. The District has a projected 14,969 million gallons of available water when looking at the

fifth dry year based on 2045 projections (Table 3-3). The Project long-term operational water demand is 0.7944% (118.917 MG/14,969 MG) of the available water supply in the District.

The tables and accompanying text indicate that the responsible water agency for the Project area has taken appropriate steps to assure that the total water supply for the service area will be adequate.

3.3 - Water Supply Management

The California Water Resources has defined the Kaweah Subbasin as "critically overdrafted". Overdraft occurs where the average annual amount of groundwater extraction exceeds the long-term average annual supply of water to the basin. Native yield is defined as the groundwater supply, which is based on the natural, normal, unavoidable recharge that occurs within the basin. The KRGSA GSP estimates the native yield of the subbasin at 0.15 acre-ft/acre, which equates to approximately 4.32 acre-feet/year. This results in a shortfall of approximately 16.65 acre-feet/year for the proposed development, i.e. 20.97 acre-feet/year minus 4.32 acre-feet/year. However, the KRGSA is currently in balance and has not yet implemented any pumping restrictions.

SECTION 4 - CONCLUSIONS

This Water Supply Assessment has provided the data and analysis needed to verify that a sufficient Project water supply is physically available (Section 3.1), and that the Project water supply is in accord with SB 610's normal year/dry year/multiple dry year requirements, sufficient (Section 3.2).

It is recommended that the California Water Service - Visalia Water District conclude that the proposed water supplies for the Project be found sufficient to meet the projected Project water demands.

SECTION 5 - REFERENCES

2003. Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001. (online): http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf. Accessed February 1, 2021

California Department of Water Resources (DWR). 2015. California's Groundwater Bulletin 118.135 p.

California Water Service - Visalia Water District, 2020 Urban Water Management Plan

SECTION 5 - REFERENCES

2003. Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001. (online): http://www.water.ca.gov/pubs/use/sb_610_sb_221_guidebook/guidebook.pdf. Accessed February 1, 2021

California Department of Water Resources (DWR). 2015. California's Groundwater Bulletin 118.135 p.

California Water Service - Visalia Water District, 2020 Urban Water Management Plan

APPENDIX A

CHAPTER 643, STATUTES OF 2001 (SENATE BILL 610)

Senate Bill No. 610
CHAPTER 643

An act to amend Section 21151.9 of the Public Resources Code, and to amend Sections 10631, 10656, 10910, 10911, 10912, and 10915 of, to repeal Section 10913 of, and to add and repeal Section 10657 of, the Water Code, relating to water.

[Filed with Secretary of State October 09, 2001. Approved by Governor October 09, 2001.]

LEGISLATIVE COUNSEL'S DIGEST

SB 610, Costa. Water supply planning.

(1) Existing law requires every urban water supplier to identify, as part of its urban water management plan, the existing and planned sources of water available to the supplier over a prescribed 5-year period. Existing law prohibits an urban water supplier that fails to prepare or submit its urban water management plan to the Department of Water Resources from receiving drought assistance from the state until the plan is submitted.

This bill would require additional information to be included as part of an urban water management plan if groundwater is identified as a source of water available to the supplier. The bill would require an urban water supplier to include in the plan a description of all water supply projects and programs that may be undertaken to meet total projected water use. The bill would prohibit an urban water supplier that fails to prepare or submit the plan to the department from receiving funding made available from specified bond acts until the plan is submitted. The bill, until January 1, 2006, would require the department to take into consideration whether the urban water supplier has submitted an updated plan, as specified, in determining eligibility for funds made available pursuant to any program administered by the department.

(2) Existing law, under certain circumstances, requires a city or county that determines an environmental impact report is required in connection with a project, as defined, to request each public water system that may supply water for the project to assess, among other things, whether its total projected water supplies will meet the projected water demand associated with the proposed project. Existing law requires the public water system to submit the assessment to the city or county not later than 30 days from the date on which the request was received and, in the absence of the submittal of an assessment, provides that it shall be assumed that the public water system has no information to submit. Existing law makes legislative findings and declarations concerning "Proposition C," a measure approved by the voters of San Diego County relating to regional growth management, and provides that the procedures established by a specified review board established in connection with that measure are deemed to comply with the requirements described above relating to water supply planning by a city or county.

This bill would revise those provisions. The bill, instead, would require a city or county that determines a project is subject to the California Environmental Quality Act to identify any public water system that may supply water for the project and to request those public water systems to

prepare a specified water supply assessment, except as otherwise specified. The bill would require the assessment to include, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts. The bill would require the city or county, if it is not able to identify any public water system that may supply water for the project, to prepare the water supply assessment after a prescribed consultation. The bill would revise the definition of "project," for the purposes of these provisions, and make related changes.

The bill would prescribe a timeframe within which a public water system is required to submit the assessment to the city or county and would authorize the city or county to seek a writ of mandamus to compel the public water system to comply with requirements relating to the submission of the assessment.

The bill would require the public water system, or the city or county, as applicable, if that entity concludes that water supplies are, or will be, insufficient, to submit the plans for acquiring additional water supplies.

The bill would require the city or county to include the water supply assessment and certain other information in any environmental document prepared for the project pursuant to the act. By establishing duties for counties and cities, the bill would impose a state-mandated local program.

The bill would provide that the County of San Diego is deemed to comply with these water supply planning requirements if the Office of Planning and Research determines that certain requirements have been met in connection with the implementation of "Proposition C."

(3) The bill would incorporate additional changes in Section 10631 of the Water Code proposed by AB 901, to be operative only if this bill and AB 901 are enacted and become effective on or before January 1, 2002, each bill amends Section 10631 of the Water Code, and this bill is enacted last.
(4) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

DIGEST KEY

BILL TEXT

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1.

(a) The Legislature finds and declares all of the following:

(1) The length and severity of droughts in California cannot be predicted with any accuracy.

(2) There are various factors that affect the ability to ensure that adequate water supplies are available to meet all of California's water demands, now and in the future.

(3) Because of these factors, it is not possible to guarantee a permanent water supply for all water users in California in the amounts requested.

(4) Therefore, it is critical that California's water agencies carefully assess the reliability of their water supply and delivery systems.

(5) Furthermore, California's overall water delivery system has become less reliable over the last 20 years because demand for water has continued to grow while new supplies have not been developed in amounts sufficient to meet the increased demand.

(6) There are a variety of measures for developing new water supplies including water reclamation, water conservation, conjunctive use, water transfers, seawater desalination, and surface water and groundwater storage.

(7) With increasing frequency, California's water agencies are required to impose water rationing on their residential and business customers during this state's frequent and severe periods of drought.

(8) The identification and development of water supplies needed during multiple-year droughts is vital to California's business climate, as well as to the health of the agricultural industry, environment, rural communities, and residents who continue to face the possibility of severe water cutbacks during water shortage periods.

(9) A recent study indicates that the water supply and land use planning linkage, established by Part 2.10 (commencing with Section 10910) of Division 6 of the Water Code, has not been implemented in a manner that ensures the appropriate level of communication between water agencies and planning agencies, and this act is intended to remedy that deficiency in communication.

(b) It is the intent of the Legislature to strengthen the process pursuant to which local agencies determine the adequacy of existing and planned future water supplies to meet existing and planned future demands on those water supplies.

SEC. 2.

Section 21151.9 of the Public Resources Code is amended to read:

21151.9.

Whenever a city or county determines that a project, as defined in Section 10912 of the Water Code, is subject to this division, it shall comply with Part 2.10 (commencing with Section 10910) of Division 6 of the Water Code.

SEC. 3.

Section 10631 of the Water Code is amended to read:

10631.

A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments as described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the location, amount, and sufficiency of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(1) An average water year.

(2) A single dry water year.

(3) Multiple dry water years.

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(2) The water use projections shall be in the same five-year increments as described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

(D) Metering with commodity rates for all new connections and retrofit of existing connections.

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

(I) Conservation programs for commercial, industrial, and institutional accounts.

(J) Wholesale agency programs.

(K) Conservation pricing.

(L) Water conservation coordinator.

(M) Water waste prohibition.

(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of such savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single dry, and multiple dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

SEC. 3.5.

Section 10631 of the Water Code is amended to read:

10631.

A plan shall be adopted in accordance with this chapter and shall do all of the following:

(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments as described in subdivision (a). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:

(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that

characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(c) Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:

(1) An average water year.

(2) A single dry water year.

(3) Multiple dry water years.

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.

(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

(e) (1) Quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(2) The water use projections shall be in the same five-year increments as described in subdivision (a).

(f) Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) A description of each water demand management measure that is currently being implemented, or scheduled for implementation, including the steps necessary to implement any proposed measures, including, but not limited to, all of the following:

(A) Water survey programs for single-family residential and multifamily residential customers.

(B) Residential plumbing retrofit.

(C) System water audits, leak detection, and repair.

(D) Metering with commodity rates for all new connections and retrofit of existing connections.

(E) Large landscape conservation programs and incentives.

(F) High-efficiency washing machine rebate programs.

(G) Public information programs.

(H) School education programs.

(I) Conservation programs for commercial, industrial, and institutional accounts.

(J) Wholesale agency programs.

(K) Conservation pricing.

(L) Water conservation coordinator.

(M) Water waste prohibition.

(N) Residential ultra-low-flush toilet replacement programs.

(2) A schedule of implementation for all water demand management measures proposed or described in the plan.

(3) A description of the methods, if any, that the supplier will use to evaluate the effectiveness of water demand management measures implemented or described under the plan.

(4) An estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the supplier's ability to further reduce demand.

(g) An evaluation of each water demand management measure listed in paragraph (1) of subdivision (f) that is not currently being implemented or scheduled for implementation. In the course of the evaluation, first consideration shall be given to water demand management measures, or combination of measures, that offer lower incremental costs than expanded or additional water supplies. This evaluation shall do all of the following:

(1) Take into account economic and noneconomic factors, including environmental, social, health, customer impact, and technological factors.

(2) Include a cost-benefit analysis, identifying total benefits and total costs.

(3) Include a description of funding available to implement any planned water supply project that would provide water at a higher unit cost.

(4) Include a description of the water supplier's legal authority to implement the measure and efforts to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

(h) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed

description of expected future projects and programs, other than the demand management programs identified pursuant to paragraph (1) of subdivision (f), that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single dry, and multiple dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

(i) Urban water suppliers that are members of the California Urban Water Conservation Council and submit annual reports to that council in accordance with the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated September 1991, may submit the annual reports identifying water demand management measures currently being implemented, or scheduled for implementation, to satisfy the requirements of subdivisions (f) and (g).

SEC. 4.

Section 10656 of the Water Code is amended to read:

10656.

An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26 (commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

SEC. 4.3.

Section 10657 is added to the Water Code, to read:

10657.

(a) The department shall take into consideration whether the urban water supplier has submitted an updated urban water management plan that is consistent with Section 10631, as amended by the act that adds this section, in determining whether the urban water supplier is eligible for funds made available pursuant to any program administered by the department.

(b) This section shall remain in effect only until January 1, 2006, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2006, deletes or extends that date.

SEC. 4.5.

Section 10910 of the Water Code is amended to read:

10910.

(a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water

systems or water service contractholders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available which was not known and could not have been known at the time when the assessment was prepared.

SEC. 5.

Section 10911 of the Water Code is amended to read:

10911.

(a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

(b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

SEC. 6.

Section 10912 of the Water Code is amended to read:

10912.

For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

(c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3000 or more service connections. A public water system includes all of the following:

(1) Any collection, treatment, storage, and distribution facility under control of the operator of the system which is used primarily in connection with the system.

(2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.

(3) Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

SEC. 7.

Section 10913 of the Water Code is repealed.

SEC. 8.

Section 10915 of the Water Code is amended to read:

10915.

The County of San Diego is deemed to comply with this part if the Office of Planning and Research determines that all of the following conditions have been met:

(a) Proposition C, as approved by the voters of the County of San Diego in November 1988, requires the development of a regional growth management plan and directs the establishment of a regional planning and growth management review board.

(b) The County of San Diego and the cities in the county, by agreement, designate the San Diego Association of Governments as that review board.

(c) A regional growth management strategy that provides for a comprehensive regional strategy and a coordinated economic development and growth management program has been developed pursuant to Proposition C.

(d) The regional growth management strategy includes a water element to coordinate planning for water that is consistent with the requirements of this part.

(e) The San Diego County Water Authority, by agreement with the San Diego Association of Governments in its capacity as the review board, uses the association's most recent regional growth forecasts for planning purposes and to implement the water element of the strategy.

(f) The procedures established by the review board for the development and approval of the regional growth management strategy, including the water element and any certification process established to ensure that a project is consistent with that element, comply with the requirements of this part.

(g) The environmental documents for a project located in the County of San Diego include information that accomplishes the same purposes as a water supply assessment that is prepared pursuant to Section 10910.

SEC. 9.

Section 3.5 of this bill incorporates amendments to Section 10631 of the Water Code proposed by both this bill and AB 901. It shall only become operative if (1) both bills are enacted and become effective on or before January 1, 2002, (2) each bill amends Section 10631 of the Water Code, and (3) this bill is enacted after AB 901, in which case Section 3 of this bill shall not become operative.

SEC. 10.

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

APPENDIX B

2020 CALIFORNIA WATER SERVICE - VISALIA WATER DISTRICT, URBAN WATER MANAGEMENT PLAN

2020 Urban Water Management Plan

Visalia District

June 2021

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List of Acronyms

AB	Assembly Bill
AF	Acre-Feet
AFY	Acre-Feet Per Year
AMI	Advanced Metering Infrastructure
AMR	Automatic Meter Reading
AWWA	American Water Works Association
CAP	Customer Assistance Program
CCR	California Code of Regulations
CII	Commercial, Institutional, and Industrial
CPUC	California Public Utilities Commission
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DDW	Division of Drinking Water
DMM	Demand Management Measure
DWR	Department of Water Resources
EO	Executive Order
ETGSA	Eastern Tule Groundwater Sustainability Agency
FT	Feet
GPCD	Gallons Per Capita Per Day
GRC	General Rate Case
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
ILI	Infrastructure Leakage Index
IRWMP	Integrated Regional Water Management Plan
JPA	Joint Powers Agreement
KDWCD	Kaweah Delta Water Conservation District
kWh	Kilowatt Hours
kWh/AF	Kilowatt Hours Per Acre-Foot
M&I	Municipal & Industrial
MBR	Membrane Bioreactor
MCLs	Maximum Contaminant Levels
MGD	Million Gallons Per Day
PWS	Public Water System
RA	Regional Alliance
RUWMP	Regional Urban Water Management Plan
SB	Senate Bill
SGMA	Sustainable Groundwater Management Act
SRES	Special Report on Emissions Scenarios
SWRCB	State Water Resources Control Board

TAC	Technical Advisory Committee
TAP	Technical Assistance Program
TID	Tulare Irrigation District
USEPA	United States Environmental Protection Agency
UV	Ultra-Violet
UWMP	Urban Water Management Plan
WCP	Water Conservation Plant
WSCP	Water Shortage Contingency Plan
WWTP	Wastewater Treatment Plant

Chapter 1
Introduction and Overview

This chapter discusses the importance and uses of this Urban Water Management Plan (UWMP or Plan), the relationship of this Plan to the California Water Code (CWC), the relationship of this Plan to other local and regional planning efforts, and how this Plan is organized and developed in general accordance with the UWMP Guidebook 2020.[1] Specifically, this chapter contains the following sections:

1.1 Background and Purpose

1.2 Urban Water Management Planning and the California Water Code

1.3 Relationship to Other Planning Efforts

1.4 Plan Organization

1.5 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

1.6 Lay Description

1.1 Background and Purpose

California Water Service Company (Cal Water) is an investor-owned public utility supplying water service to approximately 1.8 million Californians through over 481,000 connections. Its 25 districts serve 63 communities spanning from the Chico-Hamilton City District in the northern portion of the state to the Palos Verdes District in southern California. California Water Service Group, Cal Water's parent company, also provides water service to communities in Washington, New Mexico, and Hawaii.[2] While water rates are set separately for each of Cal Water's 25districts, oversight of the water rate setting process and district operations is provided by the California Public Utilities Commission (CPUC).

Cal Water incorporated in 1926 and has provided water service to communities served by the Visalia District (also referred to herein as "District") since 1926 with the purchase of the Visalia Water Company. The District serves the communities of Visalia, Mullen, and Tulco.

This UWMP is a foundational document and source of information about the Visalia District's historical and projected water demands, water supplies, supply reliability and potential

[1] The UWMP Guidebook 2020 is available at: https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans

[2] In addition, Cal Water operates the City of Hawthorne's water system on behalf of the City.

vulnerabilities, water shortage contingency planning, and demand management programs. Among other things, it is used as:

- A long-range planning document by Cal Water for water supply and system planning; and
- A source for data on population, housing, water demands, water supplies, and capital improvement projects used in:
    - Regional water resource management plans prepared by wholesale water suppliers and other regional planning authorities (as applicable),
    - General Plans prepared by cities and counties, and
    - Statewide and broad regional water resource plans prepared by the California Department of Water Resources (DWR), the State Water Resources Control Board (SWRCB), or other state agencies.

The District's last UWMP was completed in 2016, referred to herein as the "2015 UWMP." This Plan is an update to the 2015 UWMP and carries forward information from that plan that remains current and relevant, and provides additional information as required by subsequent amendments to the UWMP Act (CWC §10610 – 10657). Although this Plan is an update to the 2015 UWMP, it was developed to be a self-contained, stand-alone document and does not require readers to reference information contained in previous UWMP updates.

1.2 Urban Water Management Planning and the California Water Code

The UWMP Act requires urban water suppliers to prepare an UWMP every five years and to submit this plan to the DWR, the California State Library, and any city or county within which the supplier provides water supplies. All urban water suppliers, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet annually are required to prepare an UWMP (CWC §10617).

The UWMP Act was enacted in 1983. Over the years it has been amended in response to water resource challenges and planning imperatives confronting California. A significant amendment was made in 2009 as a result of the governor's call for a statewide 20 percent reduction in urban water use by 2020, referred to as "20x2020," the Water Conservation Act of 2009, and "SB X7-7." This amendment required urban retail water suppliers to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20 percent by 2020. Beginning in 2016, urban retail water suppliers were required to comply with the water conservation requirements in SB X7-7 in order to be eligible for state water grants or loans. Chapter 5 of this plan contains the data and calculations used to determine compliance with these requirements.

A subsequent substantial revision to the UWMP Act was made in 2018 through a pair of bills (i.e., Assembly Bill 1668 and Senate Bill 606), referred to as "Making Water Conservation a California Way of Life" or the "2018 Water Conservation Legislation." These changes include, among other things, additional requirements for Water Shortage Contingency Plans (WSCPs), expansion of dry year supply reliability assessments to a five-year drought period, establishment of annual drought risk assessment procedures and reporting, and new conservation targets referred to as "annual water use objectives," which will require retailers to continue to reduce water use beyond the 2020 SB X7-7 targets. The UWMP Act contains numerous other requirements that an UWMP must satisfy. Appendix A to this Plan lists each of these requirements and where in the Plan they are addressed.

1.3 Relationship to Other Planning Efforts

This Plan provides information specific to water management and planning by the Visalia District. However, water management does not happen in isolation; there are other planning processes that integrate with the UWMP to accomplish urban planning. Some of these relevant planning documents include relevant city and county General Plans, Water Master Plans, Recycled Water Master Plans, integrated resource plans, Integrated Regional Water Management Plans, Groundwater Management Plans, Groundwater Sustainability Plans, and others.

This Plan is informed by and helps to inform these other planning efforts. In particular, this Plan utilizes information contained in city and county General Plans and local and regional water resource plans to the extent data from these plans are applicable and available.

1.4 Plan Organization

The organization of this Plan follows the same sequence as outlined in the UWMP Guidebook 2020.[3]

Chapter 1 - Introduction and Overview

Chapter 2 - Plan Preparation

Chapter 3 - System Description

Chapter 4 - Water Use Characterization

Chapter 5 - SB X7-7 Baseline and Targets

[3] The UWMP Guidebook 2020 is available at: https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans

Chapter 6 - Water Supply Characterization

Chapter 7 - Water Supply Reliability Assessment

Chapter 8 - Water Shortage Contingency Planning

Chapter 9 - Demand Management Measures

Chapter 10 - Plan Adoption, Submittal, and Implementation

In addition to these ten chapters, this Plan includes a number of appendices providing supporting documentation and supplemental information. Pursuant to CWC §10644(a)(2), this Plan utilizes the standardized forms, tables, and displays developed by DWR for the reporting of water use and supply information required by the UWMP Act. This Plan also includes additional tables, figures, and maps to augment the set developed by DWR, as appropriate. The table headers indicate if the table is part of DWR's standardized set of submittal tables.

1.5 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

Although not required by the UWMP Act, in the UWMP Guidebook 2020,[4] DWR recommends that all suppliers that are participating in, or may participate in, receiving water from a proposed project that is considered a "covered action" under the Delta Plan—such as a (1) multiyear water transfer; (2) conveyance facility; or (3) new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta)—provide information in their UWMP to demonstrate consistency with the Delta Plan policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code of Regulations, Title 23, Section 5003).

The Visalia District's sole source of water supply is groundwater, and therefore the District does not receive water or plan to receive water from a "covered action" under the Delta Plan. As such, this requirement is not applicable.

[4] The UWMP Guidebook 2020 is available at: https://water.ca.gov/Programs/Water-Use-And-Efficiency/Urban-Water-Use-Efficiency/Urban-Water-Management-Plans

1.6 Lay Description

☑ ***CWC § 10630.5***

Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

This Urban Water Management Plan (UWMP or Plan) is prepared for the California Water Service Company (Cal Water) Visalia District (also referred to as "District"), which serves drinking water to a population of approximately 147,000 in and around the City of Visalia. This UWMP serves as a foundational planning document and includes descriptions of historical and projected water demands, and water supplies, and the resulting reliability during a set of defined water supply conditions over a 20-year planning horizon. This document also describes the actions the District is taking to promote water conservation, both by the District itself and by its customers (referred to as "demand management measures"), and includes a plan to address potential water supply shortages such as drought or other impacts to supply availability (the "Water Shortage Contingency Plan"). This UWMP is updated every five years in accordance with state requirements under the Urban Water Management Planning Act and amendments (Division 6 Part 2.6 of the California Water Code [CWC] §10610 – 10656). Past plans developed for the District are available on the California Department of Water Resources (DWR) Water Use Efficiency Data Portal website: https://wuedata.water.ca.gov/. This document includes 10 chapters, which are summarized below.

Chapter 1- Introduction and Overview

This chapter presents the background and purpose of the UWMP, identifies the Plan organization, and provides this lay description overview of the document. For districts that rely on water from the Sacramento-San Joaquin Delta, this section also discusses and demonstrates consistency with the Delta Plan. The Visalia District, however, does not receive water from a "covered action" under the Delta Plan, and this discussion is not applicable.

Chapter 2 - Plan Preparation

This chapter discusses key structural aspects related to the preparation of the UWMP, and describes the coordination and outreach conducted as part of the preparation of the Plan, including coordination with local agencies (i.e., City of Visalia and Tulare County), relevant Groundwater Sustainability Agencies (GSAs), and the public.

Chapter 3 - System Description

This chapter provides a description of the Visalia District's water system and the service area, including information related to the climate, population, and demographics. The Visalia District is located in Tulare County and operates three separate Public Water Systems (PWSs): the Visalia PWS, the Tulco PWS, and the Mullen PWS. The Visalia District has a population of approximately 147,000 and a climate characterized by hot dry summers and mild winters. The majority of the 11 inches of average annual precipitation falls between October and May. The service area includes mostly low density residential, agricultural, rural residential, and public/institutional land uses. Inside the current City limits, 12 percent of land is identified as vacant. All water customers are considered urban (i.e., non-agricultural water users).

Chapter 4 - Water Use Characterization

This chapter provides a description and quantifies the Visalia District's current and projected demands through the year 2045. The District provides drinking water (also referred to as "potable water") to customers. Water demands refer not only to the water used by customers, but also includes the water used as part of the system's maintenance and operation, as well as unavoidable losses inherent in the operation of a water distribution system. Water demand within the District was 28,408 acre-feet per year (AFY) on average between 2016 and 2020. Taking into account historical water use, expected population increase and other growth, climatic variability, and other assumptions, water demand within the District is projected to increase to 44,529 AFY by 2045, a change of 57 percent compared to the 2016-2020 average. In dry year periods, water demands are expected to be somewhat higher, potentially up to 45,939 AFY by 2045 during an extended five-year drought.

Chapter 5 - SB X7-7 Baseline and Targets

In this chapter, the Visalia District demonstrates compliance with its per capita water use target for the year 2020. The Water Conservation Act of 2009 (Senate Bill X7-7) was enacted in November 2009 and requires the state of California to achieve a 20 percent reduction in urban per capita water use by December 31, 2020. In order to achieve this, each urban retail water supplier was required to establish water use targets for 2015 and 2020 using methodologies established by DWR. The Visalia District is in compliance with its 2020 water use target of 198 gallons per capita per day (GPCD), having reduced its water use in 2020 to 183 GPCD. The Visalia District is also a member of a "Regional Alliance" for purposes of SB X7-7 compliance. The Regional Alliance's 2020 water use is 182 GPCD, which is in compliance with and below its 2020 target of 222 GPCD.

Chapter 6 - Water Supply Characterization

This chapter presents an analysis of the Visalia District's water supplies, as well as an estimate of water-related energy-consumption. The intent of this chapter is to present a comprehensive overview of the District's water supplies, estimate the volume of available supplies over the UWMP planning horizon, and assess the sufficiency of the District's supplies to meet projected demands under "normal" hydrologic conditions.

The sole source of water supply for the Visalia District is groundwater, and there are no new sources of supply currently planned. The Visalia District pumps groundwater from the Kaweah Subbasin (DWR Basin No. 5-022.11) and the Tule Subbasin (DWR Basin No. 5-022.13) of the San Joaquin Valley Basin.

The Kaweah and Tule Subbasins are not adjudicated; however, in its recent evaluation of California groundwater basins, DWR determined that both subbasins are in a condition of critical overdraft. Both subbasins have been prioritized by DWR as "high" and Groundwater Sustainability Agencies (GSAs) formed within the subbasins have adopted Groundwater Sustainability Plans (GSPs) in accordance with the Sustainable Groundwater Management Act (SGMA). The District falls within the jurisdiction of three GSAs: the Mid-Kaweah GSA, the Greater Kaweah GSA, and the Eastern Tule GSA. While long-term impacts of GSP implementation in the Kaweah and Tule Subbasins remain uncertain, based on all available information, the groundwater supply is expected to be sufficient to support the Visalia District's projected water demand through 2045.

Calculating and reporting of water system energy intensity is a new requirement for the 2020 UWMPs. Energy intensity is defined as the net energy used for water treatment, pumping, conveyance, and distribution for all water entering the distribution system, and does not include the energy used to treat wastewater. The energy intensity for the Visalia District is estimated to be approximately 474 kilowatt hours per acre-foot of water (kWh/AF).

Chapter 7 - Water Supply Reliability Assessment

This chapter assesses the reliability of the Visalia District's water supplies, with a specific focus on potential constraints such as groundwater supply availability, water quality, and climate change. The intent of this chapter is to identify any potential constraints that could affect the reliability of the District's supply (such as drought conditions) to support the District's planning efforts to ensure that its customers are well served. Water service reliability is assessed during normal, single dry-year, and multiple dry-year hydrologic conditions. Based on this analysis, the Visalia District expects the available supplies to be sufficient to meet projected demands in all hydrologic conditions, including a five-year drought period, and considering the impacts of climate change. Further, potential water quality issues are not expected to affect the quality of

water served to the District's customers, as water quality is routinely monitored and the District is able to make all appropriate adjustments to its treatment and distribution system to ensure only high quality drinking water is served.

Chapter 8 - Water Shortage Contingency Planning

This chapter describes the Water Shortage Contingency Plan (WSCP) for the Visalia District. The WSCP serves as a standalone document to be engaged in the case of a water shortage event, such as a drought or supply interruption, and defines specific policies and actions that will be implemented at various shortage level scenarios. For example, implementing customer water budgets and surcharges, or restricting landscape irrigation to specific days and/or times. Consistent with DWR requirements, the WSCP includes six levels to address shortage conditions ranging from up to 10 percent to greater than 50 percent shortage.

Chapter 9 - Demand Management Measures

This chapter includes descriptions of past and planned conservation programs that Cal Water operates within each demand management measure (DMM) category outlined in the UWMP Act, specifically: (1) water waste prevention ordinances, (2) metering, (3) conservation pricing, (4) public education and outreach, (5) distribution system water loss management, (6) water conservation program coordination and staffing support, and (7) "other" DMMs. Cal Water has developed a suite of conservation programs and policies, which address each DMM category.

Chapter 10 - Plan Adoption, Submittal, and Implementation

This chapter provides information on a public hearing, the adoption process for the UWMP and WSCP, the adopted UWMP and WSCP submittal process, plan implementation, and the process for amending the adopted UWMP and WSCP. Prior to adopting the Plan, Cal Water held a formal public hearing to present information on its Visalia District UWMP and WSCP on May 18, 2021, 7:00 PM. This UWMP and the corresponding WSCP were submitted to DWR within 30 days of adoption and by the July 1, 2021 deadline.

Chapter 2
Plan Preparation

This chapter discusses the type of Urban Water Management Plan (UWMP or Plan) the Visalia District (also referred to herein as "District") has prepared and includes information that will apply throughout the Plan. Coordination and outreach during the development of the Plan is also discussed. Specifically, this chapter includes the following sections:

2.1 Public Water Systems

2.2 Regional Planning

2.3 Individual or Regional Planning and Compliance (Regional Alliance)

2.4 Plan Preparation, Standard Units, and Basis for Reporting

2.5 Coordination and Outreach

2.1 Public Water Systems

The Visalia District operates the Public Water Systems (PWS) listed in Table 2-1. Public Water Systems are the systems that provide drinking water for human consumption and are regulated by the State Water Resources Control Board (SWRCB), Division of Drinking Water. The SWRCB requires that water agencies report water usage and other relevant PWS information via the electronic Annual Reports to the Drinking Water Program (eARDWP). These data are used by the state to determine, among other things, whether an urban retail water supplier has reached the threshold (3,000 or more connections or 3,000 acre-feet of water supplied) for submitting an UWMP.

Table 2-1. Public Water Systems (DWR Table 2-1)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
CA5410016	Visalia	45,325	30,034
CA5410041	Tulco	183	97
CA5400935	Mullen	42	21
	TOTAL	45,550	30,152
NOTES: (a) Volumes are in units of AF.			

2.2 Regional Planning

Regional planning can deliver mutually beneficial solutions to all agencies involved by reducing costs for the individual agency, assessing water resources at the appropriate geographic scale, and allowing for solutions that cross jurisdictional boundaries. California Water Service Company (Cal Water) participates in regional water resources planning initiatives throughout California in the regions in which its 25 water districts are located. In the region in which the Visalia District is located, Cal Water participates with the Kaweah Delta Water Conservation District (KDWCD), the City of Visalia, and the relevant Groundwater Sustainability Agencies (GSAs). KDWCD has historically focused on the conservation of flows of the Kaweah River for groundwater recharge. Cal Water is also a stakeholder group participant to Kaweah River Basin Integrated Regional Water Management Plan, which was updated most recently in 2018.

2.3 Individual or Regional Planning and Compliance (Regional Alliance)

Urban water suppliers may elect to prepare individual or regional UWMPs. The Visalia District has elected to prepare an individual UWMP covering its three public water systems (see Table 2-2).

Urban retail water suppliers may report on the requirements of SB X7-7 (2009 California Conservation Act) individually or as a member of a "Regional Alliance." As described in Chapter 5, the Visalia District is a member of a Regional Alliance and this UWMP provides information on the District's compliance with its SB X7-7 water conservation targets both as an individual urban retail water supplier and as a member of a Regional Alliance.

Table 2-2. Plan Identification (DWR Table 2-2)

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance *if applicable*
X	Individual UWMP		
		Water Supplier is also a member of a RUWMP	
	X	Water Supplier is also a member of a Regional Alliance	California Water Service - Tulare Lake Regional Alliance
	Regional Urban Water Management Plan (RUWMP)		
NOTES: The Visalia District is a member of a Regional Alliance. Chapter 5 provides information on the District's progress towards meeting its water conservation targets under SB X7-7 both as an individual urban retail water supplier and as a member of its Regional Alliance.			

2.4 Plan Preparation, Standard Units, and Basis for Reporting

☑ ***CWC § 10608.12 (t)***
"Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

☑ ***CWC § 10617***
"Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

☑ ***CWC § 10621 (a)***
Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.

☑ ***CWC § 10621 (f)***
Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

Per California Water Code (CWC) §10617, the Visalia District is an urban water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. It is therefore obligated under CWC §10621(f) to develop and submit an UWMP to the California Department of Water Resources (DWR) by July 1, 2021. The Visalia District is an urban retail water supplier, as defined by CWC §10608.12 (t) and §10617, and as identified in Table 2-3. The Visalia District is not a wholesale water supplier.

Annual volumes of water reported in this UWMP are measured in acre-feet (AF) and are reported on a calendar year basis (Table 2-3). Water use and planning data reported in this UWMP for calendar year 2020 cover the full twelve months of the year, as required by the UWMP Guidelines.

Table 2-3. Supplier Identification (DWR Table 2-3)

Type of Supplier	
	Supplier is a wholesaler
X	Supplier is a retailer
Fiscal or Calendar Year	
X	UWMP Tables are in calendar years
	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP	
Unit	AF
NOTES:	

2.5 Coordination and Outreach

☑ ***CWC § 10620 (d) (3)***

Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

☑ ***CWC § 10631 (a)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following: Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.*

☑ ***CWC § 10642***

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. …

Coordination with other water suppliers, cities, counties, and other community organizations in the region is an important part of preparing a UWMP and Water Shortage Contingency Plan (WSCP). This section identifies the agencies and organizations the Visalia District sought to coordinate with during preparation of this Plan.

2.5.1 Wholesale and Retail Coordination

☑ ***CWC § 10631 (h)***

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

Urban retail water suppliers relying on one or more wholesalers for water supply are required to provide these wholesalers with information regarding projected water supply and demand. As shown in Table 2-4, the Visalia District does not derive any of its water supply from a wholesale water supplier.

Table 2-4. Water Supplier Information Exchange (DWR Table 2-4)

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name
N/A
NOTES: The Visalia District does not derive any of its water supply from a wholesale water supplier.

2.5.2 Coordination with and Notice to Other Agencies and the Community

☑ ***CWC § 10620 (d) (3)***

Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.

☑ ***CWC § 10642***

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

The Visalia District coordinated with cities, counties, and other community organizations during preparation of this UWMP. Cal Water provided notice to these entities and the communities it serves 60 days prior to the public hearing it held on May 18, 2021, to present the draft of the UWMP, address questions, and receive comments. Cities and counties receiving the public hearing notification from Visalia District as required per CWC §10621 (b) are listed in Table 10-1 in Chapter 10 of this Plan.

Copies of correspondence with other agencies and public notices are provided in Appendix B and Appendix C, respectively.

2.5.3 Coordination with Land Use Authorities

☑ ***CWC § 10631 (a)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

Cal Water coordinated with the City of Visalia and Tulare County staff to review and confirm that appropriate land use assumptions were used to develop the UWMP demand projections. Correspondence with land use authorities is included in Appendix B.

Chapter 3
System Description

☑ ***CWC § 10631 (a)***

A plan shall be adopted in accordance with this chapter that shall do all of the following:

Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

This chapter provides a description of the Visalia District (also referred to herein as the "District") water system and service area, including climate, population, demographics, and land uses to help in understanding various elements of water supply and demand. This chapter includes the following sections:

3.1 General Description

3.2 Service Area Boundary Map

3.3 Service Area Climate

3.4 Service Area Population and Demographics

3.5 Land Uses within Service Area

3.1 General Description

The District has served the City of Visalia since 1926, when California Water Service Company (Cal Water), an investor-owned water utility regulated by the California Public Utilities Commission (CPUC), purchased the water system serving the City of Visalia from the Visalia Water Company. The District is comprised of three public water systems (PWS): the Visalia PWS, the Tulco Water System PWS, and the Mullen Water System PWS. The Visalia PWS serves the City of Visalia while the other two serve very small communities south of the City of Visalia.

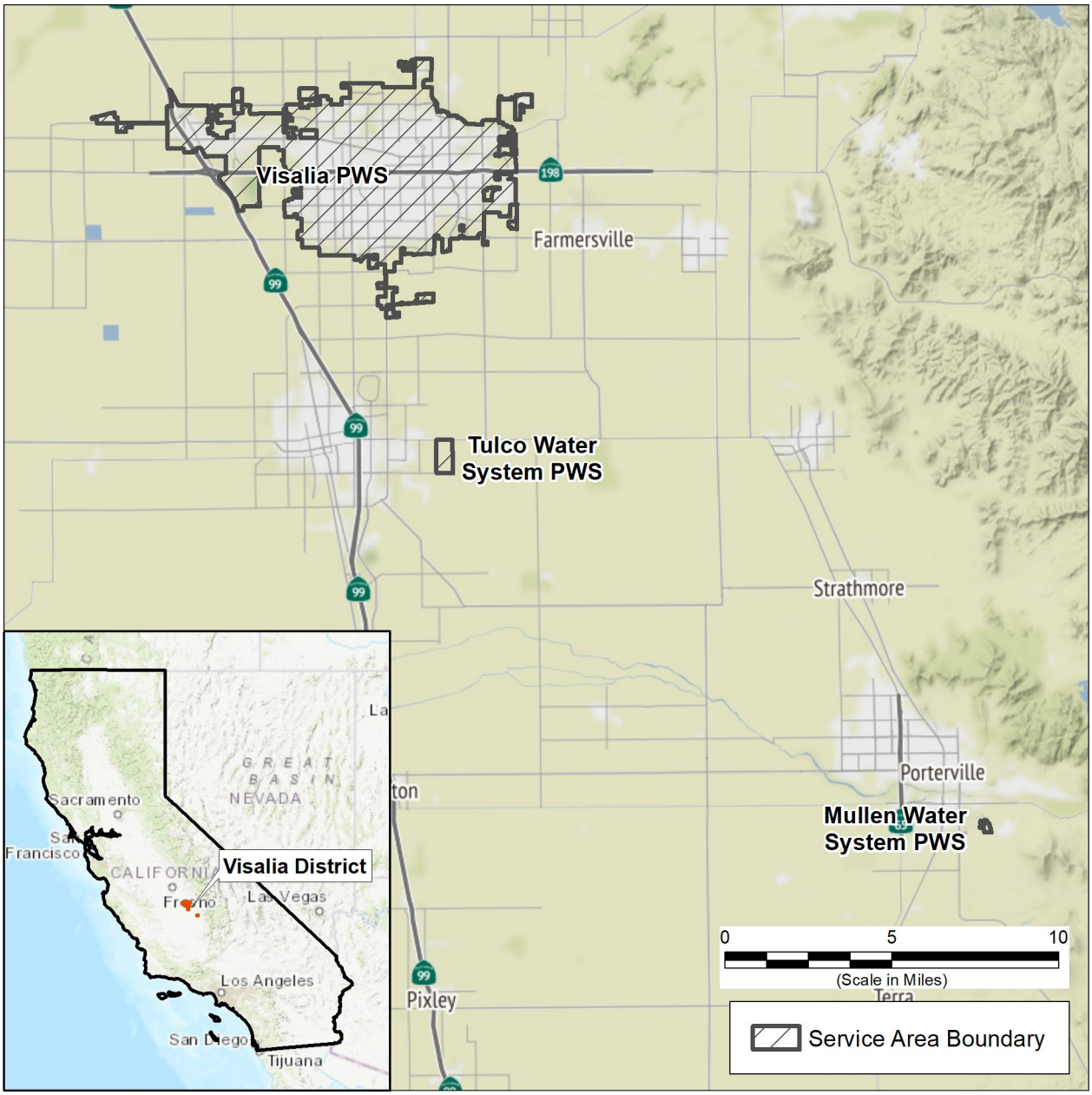
The District currently produces about 27 million gallons of local groundwater per day from 59 active wells and delivers it to customers through more than 600 miles of pipeline. Nearly all this production is associated with the Visalia PWS. The District delivers water to residential, commercial, industrial, and governmental customers. Residential customers account for most of the District's service connections and 69 percent of its water uses. Non-residential water uses account for 28 percent of total demand, while distribution system losses account for 3 percent.

3.2 Service Area Boundary Map

Figure 3-1 shows the location of the District and its current service area boundaries. The District is in Tulare County and serves the City of Visalia and segments of unincorporated Tulare County including the communities of Goshen, Mullen, and Tulco. Visalia is the largest city in Tulare County. The District lies approximately 42 miles southeast of the City of Fresno and 75 miles north of the City of Bakersfield. Major transportation links in the District include the Golden State Highway (State Route 99), State Route 63 and State Route 198. The Southern Pacific and the Atchison, Topeka and Santa Fe Railroads provide rail service to the region.

The District is situated in the Tulare Lake Hydrologic Region, within the King-Kaweah-Tule Rivers sub-area. The service area is built upon the alluvium of the Kaweah River. The Kaweah River provides drainage for the southern Sierra Nevada Mountains. This river splits east of Visalia forming the St. Johns River that flows just north of Visalia while the Kaweah River continues south. Lake Kaweah is located on the Kaweah River about twenty miles upstream from the city. This reservoir is operated by the U.S. Army Corps of Engineers and provides both flood control and irrigation water storage.

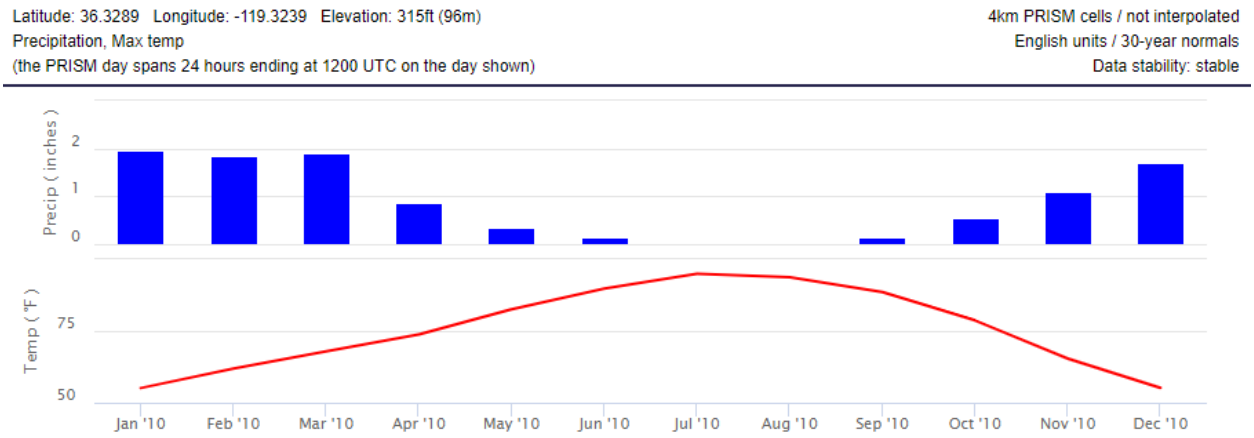
Figure 3-1. District Location and Service Boundaries



3.3 Service Area Climate

The District's climate is characterized by hot dry summers and mild winters (see Figure 3-2).[5] Most rainfall occurs between October and May. Precipitation totals in the summer months are negligible. On average, the District receives 11 inches of rainfall annually. Maximum daily air temperature averages 92 degrees Fahrenheit during the summer months. In the winter, it averages 57 degrees Fahrenheit.

Figure 3-2. 30-Year Normals, Precipitation and Maximum Daily Air Temperature



Based on a review of data downloaded from the Oregon State PRISM dataset for 1895 to 2019, rainfall varies significantly from year-to-year, as it does in most of California.[6] The standard deviation in annual rainfall is 3.4 inches, or about one-third of average annual rainfall.[7] Consecutive years of below average rainfall are fairly common. Since 1895, runs of below average rainfall lasting three or more years have occurred 13 times and runs lasting five or more years have occurred twice. The longest run lasted six years, from 2011 through 2016. While rainfall in the region is highly variable, there has been no statistically significant trend in the mean or variance of annual rainfall since 1895.

The District's climate has been warming. Since 1895, average daily temperature has increased at an average rate of 0.013 degrees Fahrenheit per year. Mean annual temperature for 2010-2019 was 2.1 degrees Fahrenheit higher than for 1900-1909.

[5] Precipitation and temperature data downloaded from: https://prism.oregonstate.edu/explorer/. These data represent a 30-year period from 1980 through 2010. The x-axis reflects the end of the 30-year time series.
[6] Downloaded from: https://prism.oregonstate.edu/explorer/. The x-axis reflects the end of the 30-year time series.
[7] Standard deviation measures the typical or average year-to-year variation in annual rainfall amount. Thus, it is typical for annual rainfall to fluctuate significantly in the District.

3.4 Service Area Population and Demographics

It is estimated that the District's service area population was 147,032 in 2020.

The District estimates its service area population using Census Block population counts from decadal Census data. The decadal Census estimates are converted to average population per single- and multi-family service, which are applied to service counts for years between the decadal Censuses. This method is similar to the approach used by the California Department of Water Resources (DWR) Population Tool and population estimates generated by the two methods have been shown to differ by less than a percent in most cases. [8]

Current and projected service area population are shown in Table 3-1. Projected population is based on population and employment forecasts for Tulare County generated by the California Department of Transportation's (Caltrans) long-term socio-economic forecast model. [9] Between 2020 and 2045, service area population is projected to increase at an average rate of 1.7 percent per year.

Table 3-1. Population – Current and Projected (DWR Table 3-1)

Population Served	2020	2025	2030	2035	2040	2045
	147,032	161,087	176,265	192,510	209,431	226,850
NOTES:						

Demographics for the City of Visalia are summarized in Table 3-2. These data are from the U.S. Census American Community Survey 2019 5-Year Estimates. [10] Relative to the rest of California, the City of Visalia's population is slightly younger and more racially homogenous. Educational attainment is lower than for the state as a whole, as is median household income.

The City of Visalia's stock of housing is significantly newer than for California overall. Forty-one percent of the homes in Visalia were built after 1990 compared to 25 percent for all of California. Homes built after 1990 are more likely to have plumbing fixtures and appliances that are compliant with state and federal water and energy efficiency standards.

[8] California Water Service, 2016. 2015 Urban Water Management Plan: Visalia District, dated June 2016.
[9] California Department of Transportation's long-term socio-economic forecast model: https://dot.ca.gov/programs/transportation-planning/economics-data-management/transportation-economics/long-term-socio-economic-forecasts-by-county
[10] U.S. Census Bureau, 2019. 2015-2019 American Community Survey 5-year Estimates, dated 2019. Retrieved from: https://data.census.gov/cedsci/.

Table 3-2. Demographic and Housing Characteristics

Demographics	City of Visalia	California
Median Age (years)	32.0	36.5
Racial Makeup (%)		
White	74.4	63.8
Black or African American	3.2	7.0
American Indian and Alaska Native	2.1	1.9
Asian	7.4	16.7
Native Hawaiian	0.3	0.8
Some other race	17.3	15.1
Hispanic or Latino (of any race) (%)	52.2	39.0
Educational Attainment (%)		
Bachelor's Degree or Higher	23.1	33.9
Primary Language Spoken at Home (%)		
English Only	86.7	82.2
Limited English-Speaking Households	7.1	8.9
Median Household Income ($)	62,263	75,235
Population below Federal Poverty Level (%)	16.2	13.4
Housing	City of Visalia	California
Median Year Built	1985	1975
Year Housing Built (%)		
2010 or Later	6.2	3.5
2000 to 2009	21.1	11.2
1990 to 1999	14.0	10.9
Before 1990	58.7	74.5

3.5 Land Uses within Service Area

The existing land use pattern for City of Visalia is shown in Table 3-3. These data are taken from the Land Use Element of the City of Visalia's General Plan and reflect the land use pattern circa

2010.[11] Agriculture is the most prominent land use within the General Plan's Planning Area, occupying 39,518 acres or 65 percent of the land. Most of the agricultural land in the Planning Area is located outside of the current city limits, but even within these limits 15 percent of the land area is used in agriculture.

Low Density Residential (ranging from two to seven units per acre) is the second most prominent land use, comprising 11 percent of Planning Area land uses and 33 percent of land uses inside the current city limits. Medium and high density residential, various commercial and public, and light and heavy industrial land uses comprise most of the balance shown in Table 3-3.

There is significant room for further urban development within the District. Inside current city limits, the General Plan identifies 2,262 acres or 12 percent of the land as vacant. Outside current city limits an additional 656 acres are classified as vacant and 36,739 acres are classified as agricultural. While important objectives of the General Plan are aimed at preserving the agricultural character of the region and protecting and promoting agricultural businesses, it is also anticipated that some of the land currently in agricultural production will be converted to residential and non-residential urban uses to accommodate future growth. As shown in Table 3-1, the District is projecting that service area population will increase by more than 50 percent over the next 25 years.

[11] Accessed from: https://www.visalia.city/depts/community_development/planning/gp.asp

Table 3-3. City of Visalia General Plan Land Use (Acres)

	Inside City Limits		*Outside City Limits*		*Total Planning Area*	
Land Use	*Acres*	*Percent*	*Acres*	*Percent*	*Total Acres*	*Percent of Total*
Agriculture	2,778	15%	36,739	88%	39,518	65%
Low Density Residential	6,289	33%	351	1%	6,640	11%
Rural Residential	1,430	8%	2,675	6%	4,104	7%
Vacant	2,262	12%	656	2%	2,917	5%
Public/Institutional	1,554	8%	406	1%	1,960	3%
Light Industrial	1,180	6%	291	1%	1,471	2%
Parks and Recreation	1,108	6%	53	0%	1,161	2%
General Retail/Commercial	723	4%	79	0%	801	1%
Service Commercial	343	2%	197	0%	540	1%
Office	338	2%	12	0%	351	1%
Heavy Industrial	233	1%	66	0%	299	0%
Medium Density Residential	262	1%	2	0%	264	0%
Right of Way	148	1%	106	0%	254	0%
Canal	34	0%	171	0%	205	0%
Water	163	1%	23	0%	186	0%
High Density Residential	126	1%	1	0%	127	0%
Railroad	46	0%	45	0%	91	0%
Total	**19,017**[1]	**100%**	**41,872**	**100%**	**60,889**	**100%**

[1] *Land use total inside city limits excludes area of roadways, which add approximately 4,136 acres, for a total of 23,153 acres, or approximately 36 square miles within city limits.*

Source: Dyett & Bhatia, 2010

Chapter 4
Water Use Characterization

☑ ***CWC § 10631 (d) (1)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

This chapter provides a description and quantifies the Visalia District's (also referred to herein as the "District") past, current, and projected water uses through 2045. For the purposes of the Urban Water Management Plan (UWMP or Plan), the terms "water use" and "water demand" are used interchangeably. This chapter is divided into the following subsections:

4.1 Non-Potable Versus Potable Water Use

4.2 Past, Current, and Projected Water Uses by Sector

4.3 Climate Change Considerations

Appendix D provides additional information and data related to the development of the water demand projections presented in this chapter.

4.1 Non-Potable Versus Potable Water Use

This Plan maintains a clear distinction between recycled, potable, and raw water uses and supplies. Recycled water is addressed comprehensively in Chapter 6, but a summary of recycled water demand is included in Table 4-3 of this chapter. The primary focus of this chapter is the historical and projected potable water uses in the District.

4.2 Past, Current, and Projected Water Uses by Sector

☑ ***CWC § 10631 (d)***

For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

4.2.1 Past and Current Water Use

Table 4-1 shows water use in 2016-2020 by use type (referred to as "sector" in CWC §10631). Water use has been decreasing in the District since the early-2000s. Several factors have contributed to this reduction. First, most of the District's residential customers were unmetered in 2000. The District is now fully metered. A study completed by San Jose State University found that after six months of metering, previously unmetered households in the District reduced their water use by an average of 17 percent.[12] Second, California Water Service Company (Cal Water) implemented conservation pricing starting in 2009, supplying stronger financial incentives to use water efficiently. Third, starting around 2012, Cal Water tripled the level of expenditure on

[12] Tanverakul, S. and J. Lee, 2015. Impacts of Metering on Residential Water Use in California, Journal AWWA 107:2, dated February 2015.

conservation programs aimed at helping customers use water more efficiently. Fourth, appliance efficiency standards and plumbing codes have contributed to significant improvement over time in the average water use efficiency of the installed base of appliances and plumbing fixtures. For example, a new toilet uses roughly one-third the amount of water as a toilet manufactured in the 1980s while a new clothes washer uses about half the amount of water as an older washer.[13] District per capita water use in 2020 was 30 percent below its 2004 peak.

Water use in 2020 was 30,152 acre-feet (AF). Residential customers account for most of the District's service connections and 69 percent of its water uses. Non-residential water uses account for 28 percent of total demand, while distribution system losses account for 3 percent.

Table 4-1. Demands for Potable and Non-Potable Water – Actual (DWR Table 4-1)

Use Type	Additional Description *(as needed)*	Level of Treatment When Delivered	Volume (a)				
			2016	2017	2018	2019	2020
Single Family		Drinking Water	15,755	16,952	18,035	18,111	19,359
Multi-Family		Drinking Water	1,429	1,477	1,499	1,497	1,525
Commercial		Drinking Water	4,492	5,011	5,420	5,341	5,239
Institutional/Gov't		Drinking Water	2,201	2,505	2,728	2,873	2,600
Industrial		Drinking Water	352	407	405	414	305
Other Potable	(b)	Drinking Water	250	304	230	-172	200
Landscape	(c)	Drinking Water	0	0	0	0	0
Losses	(d)	Drinking Water	1,364	1,226	926	855	923
		TOTAL	25,843	27,882	29,243	28,919	30,152

NOTES:
(a) Volumes are in units of AF.
(b) The Other Potable use type is used to balance discrepancies between District production records and the AWWA water audit results used to report system water losses. This may result in negative consumption values in some years.
(c) District's billing system does not track this use type separate from other use types.
(d) Real and apparent losses.

4.2.2 Projected Water Use

Projected water use through 2045 is summarized in Table 4-2. Projected water use is estimated as a function of expected service growth and a forecast of average water use per service for each

[13] Water Research Foundation, 2016. Residential End Uses of Water, Version 2, prepared by DeOreo, William B., Peter Mayer, Benedykt Dziegielewski, and Jack Kiefer, dated April 2016.

of the use types shown in the table. Projected population and services are based on population and employment forecasts for Tulare County generated by the California Department of Transportation's (Caltrans) long-term socio-economic forecast model.[14] These projections are used to estimate the growth in services for each use type. Over the 25-year planning period (2020-2045), the total number of services is projected to increase at an average rate of 1.8 percent annually. For sake of comparison, between 2000 and 2020, the total number of services increased at an average rate of 2.4 percent annually. As described later in the chapter, average water use per service is adjusted over the forecast period to account for anticipated reductions in water use due to the ongoing effects of appliance standards and plumbing codes, the District's conservation and customer assistance programs, and growth in the inflation-adjusted cost of water service and household income. These factors, in combination, are expected to attenuate the increase in water use associated with projected service and population growth.

Table 4-2. Use for Potable and Non-Potable Water – Projected (DWR Table 4-2)

Use Type	Additional Description *(as needed)*	Projected Water Use (a)				
		2025	2030	2035	2040	2045
Single Family		20,815	22,593	24,604	26,513	28,705
Multi-Family		1,583	1,686	1,815	1,945	2,070
Commercial		5,634	6,009	6,448	6,891	7,364
Institutional/Gov't		2,854	3,152	3,483	3,819	4,164
Industrial		308	308	308	308	308
Other Potable		223	223	223	223	223
Landscape	(b)	0	0	0	0	0
Losses	(c)	1,102	1,304	1,429	1,559	1,695
TOTAL		32,520	35,276	38,310	41,258	44,529

NOTES:
(a) Volumes are in units of AF.
(b) District's billing system does not track this use type separate from other use types.
(c) Real and apparent losses.

Future water demands are expected to be comprised only of potable water use, as shown in Table 4-3. As discussed in Chapter 6, the City of Visalia has entered into agreements with Tulare Irrigation District (TID) to supply recycled water from its wastewater treatment facilities for groundwater recharge uses. None of the recycled water supplied to TID is expected to be used to meet the future water demands of District customers.

[14] California Department of Transportation's long-term socio-economic forecast model: https://dot.ca.gov/programs/transportation-planning/economics-data-management/transportation-economics/long-term-socio-economic-forecasts-by-county

Table 4-3. Total Gross Water Use (Potable and Non-Potable) (DWR Table 4-3)

	2020	2025	2030	2035	2040	2045
Potable Water, Raw, Other Non-potable *From DWR Tables 4-1 and 4-2*	30,152	32,520	35,276	38,310	41,258	44,529
Recycled Water Demand *From DWR Table 6-4*	0	0	0	0	0	0
Optional Deduction of Recycled Water Put Into Long-Term Storage						
TOTAL WATER USE	30,152	32,520	35,276	38,310	41,258	44,529
NOTES: (a) Volumes are in units of AF.						

4.2.3 Distribution System Water Loss

☑ ***CWC § 10631 (3)***

(A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

Table 4-4 shows distribution system water losses for the previous five years. Water loss is the sum of apparent and real losses. Apparent loss is associated with metering inaccuracies, billing and administrative errors, authorized unmetered uses (e.g., system flushing and firefighting), and unauthorized uses. Real loss is associated with physical water lost through line breaks, leaks and seeps, and overflows of storage tanks. Since 2016, urban retail water suppliers have been required under CWC §10608.34 and California Code of Regulations (CCR) §638.1 et seq to quantify distribution system water losses using the American Water Works Association (AWWA) Free Water Audit Software (referred to as "water loss audit reports"). The water loss audit reports the District submits to DWR provide the basis for the 2016-2019 estimates shown in Table 4-4 and are available through DWR's Water Use Efficiency Data Portal. [15] The District's 2020 water

[15] DWR's Water Use Efficiency Data Portal: https://wuedata.water.ca.gov/awwa_plans

loss audit report had not been completed at the time this Plan was prepared.[16] The 2020 estimate shown in Table 4-4 is therefore drawn from the District's preliminary draft water loss audit results.

Table 4-4. Last Five Years of Water Loss Audit Reporting (DWR Table 4-4)

Reporting Period Start Date	Volume of Water Loss (a)
01/2016	1,364
01/2017	1,226
01/2018	926
01/2019	855
01/2020	923
NOTES: (a) Volumes are in units of AF.	

CWC §10631 (3)(c) requires that this UWMP demonstrate whether the distribution loss standards enacted by the State Water resources Control Board (SWRCB) pursuant to §10608.34 have been met. However, the SWRCB has yet to establish these standards, and thus consistency with these standards cannot be demonstrated herein.

4.2.4 Future Water Savings in Projected Water Use

☑ ***CWC § 10631 (d) (4)***

(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

As affirmed in Table 4-5, both future water savings (discussed below) and lower income residential demands (discussed in Section 4.2.5) are included in the projections of future water use.

[16] The District's regulatory deadline for filing its 2020 water loss audit report to the state is October 1, 2021.

Table 4-5. Inclusion in Water Use Projections (DWR Table 4-5)

Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Section 4.2.4
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES:	

As noted above, the District has adjusted the forecast of average water use per service for the effects of appliance standards and plumbing codes, conservation programs, and increases in the real cost of water service and household income. These adjustments are described below.

The District uses forecasts of per capita water savings from appliance standards and plumbing codes prepared for DWR to adjust its projections of average water use per service.[17] These forecasts incorporate the effects of the following codes and regulations:

- Assembly Bill (AB) 715, enacted in 2007, requires that any toilet or urinal sold or installed in California on or after January 1, 2014 cannot have a flush rating exceeding 1.28 and 0.5 gallons per flush, respectively. AB 715 superseded the state's previous standards for toilet and urinal water use set in 1991 of 1.6 and 1.0 gallons per flush, respectively. On April 8, 2015, in response to the Governor's Emergency Drought Response Executive Order (EO B-29-15), the California Energy Commission approved new standards for urinals requiring that they not consume more than 0.125 gallons per flush, 75 percent less than the standard set by AB 715.
- Water use standards for residential and commercial clothes washers and dishwashers are established by the U.S. Department of Energy through its authority under the federal Energy Policy and Conservation Act. Water use efficiency is summarized by the water factor for the appliance which measures the gallons of water used per cycle per cubic foot of capacity. A typical top-loading residential clothes washer manufactured in the 1990s had a water factor of around 12. In 2015, the allowable water factor for top- and front-loading residential clothes was reduced to 8.4 and 4.7, respectively. In 2018, water factor standard for top-loading residential clothes washers will be reduced to 6.5. In 2010 the allowable water factor for top- and front-loading commercial clothes washers was reduced to 8.5 and 5.5, respectively. The maximum water factor for Energy Star compliant top- and front-loading washers is 3.7 and 4.3, respectively. The U.S. Environmental Protection Agency estimates that Energy Star washers made up at least 60 percent of the residential market and 30 percent of the

[17] M.Cubed, 2016. Projected Statewide and County-Level Effects of Plumbing Codes and Appliance Standards on Indoor GPCD, technical memorandum prepared for the California Department of Water Resources, dated August 2016.

commercial market in 2011.[18] An Energy Star compliant washer uses about two-thirds less water per cycle than washers manufactured in the 1990s. Federal dishwasher water use efficiency standards were last updated in 2013. The maximum water use for standard and compact sized dishwashers is 5.0 and 3.5 gallons per cycle, respectively.

- New construction and renovations in California are now subject to CalGreen Code requirements. CalGreen includes prescriptive indoor provisions for maximum water consumption of plumbing fixtures and fittings in new and renovated properties. CalGreen also allows for an optional performance path to compliance, which requires an overall aggregate 20 percent reduction in indoor water use from a calculated baseline using a set of worksheets provided with the CalGreen guidelines.
- Senate Bill (SB) 407, enacted in 2009, mandates that all buildings in California come up to current State plumbing fixture standards within this decade. This law establishes requirements that residential and commercial property built and available for use on or before January 1, 1994 replace plumbing fixtures that are not water conserving, defined as "noncompliant plumbing fixtures." This law also requires effective January 1, 2017 that a seller or transferor of single-family residential property show to the purchaser or transferee, in writing, the specified requirements for replacing plumbing fixtures and whether the real property includes noncompliant plumbing. Similar disclosure requirements went into effect for multi-family and commercial transactions January 1, 2019. SB 837, passed in 2011, reinforces the disclosure requirement by amending the statutorily required transfer disclosure statement to include disclosure about whether the property follows SB 407 requirements.

The District's 2015 Conservation Master Plan forms the basis for the forecast of water savings from conservation programs. Cal Water used the Alliance for Water Efficiency's Water Conservation Tracking Tool to estimate expected water savings from planned program implementation.[19]

Projected increases in water service costs and household income form the basis for the adjustments to average water use due to changes in the real cost of water service. The forecast uses the historical rate of increase in District water rates to project future water service costs. It uses Caltrans income projections for Tulare County to estimate changes in household income. It uses empirically derived estimates of price and income demand elasticity to adjust future water demand for changes in these variables.[20]

[18] EPA Energy Star Unit Shipment and Market Penetration Report Calendar Year 2011 Summary.
[19] Alliance for Water Efficiency Water Conservation Tracking Tool: https://www.allianceforwaterefficiency.org/resources/topic/water-conservation-tracking-tool
[20] M.Cubed, 2018. California Water Service 2020 Test Year Sales Forecast: 2018 General Rate Case, prepared for California Water Service by M.Cubed, dated January 2018.

Table 4-6 shows the total water savings from plumbing codes and appliance standards, conservation programs, and increases in the real cost of water service.

Table 4-6. Future Conservation Savings (AF)

2025	2030	2035	2040	2045
811	1,421	1,900	2,605	3,156

4.2.5 Water Use by Lower Income Households in Water Use Projections

☑ ***CWC § 10631.1***

(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirements under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

California Senate Bill No. 1087 (SB 1087), Chapter 727, passed in 2005, amended Government Code §65589.7 and CWC §10631.1. This law requires that local governments supply a copy of their adopted housing element to water and sewer providers. Additionally, it requires that water providers grant priority for service allocations to developments that include housing units for lower income families and workers. The UWMP Act requires that water providers estimate water demands by lower income single and multi-family households.

Cal Water must serve all development that occurs within its service area, regardless of the income level of the future residents. Cal Water does not keep records of the income level of its customers and does not discriminate when supplying water to any development. It is the responsibility of the city or county with land use authority over a given area to approve or not approve developments within Cal Water's service areas. Cal Water has a Customer Assistance Program (CAP) to help with water service affordability. CAP discounts the monthly service charge of qualifying lower income households.

Table 4-7 shows projected water use by lower income households. These demands are part of the projected residential water use in Table 4-2. Cal Water used the City of Visalia's General Plan

Housing Element to estimate the number of lower income households which is the basis for the estimates in Table 4-7. [21]

Table 4-7. Residential Demands of Lower Income Households (AF)

2025	2030	2035	2040	2045
8,511	9,226	10,039	10,814	11,694

4.2.6 Characteristic Five-Year Water Use

☑ ***CWC § 10635(b)(3)***

(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following…

(3) A comparison of the total water supply sources available to the water supplier with ***the total projected water use for the drought period.*** (Emphasis added).

CWC §10635(b) is a new requirement for 2020 UWMPs. A critical part of this new statutory language is the requirement to prepare a five-year Drought Risk Assessment (see Section 9.5). As a first step, DWR suggests that water suppliers estimate their unconstrained water demand for the next five years (2021-2025). Unconstrained water demand is water use in the absence of drought water use restrictions. Drought conditions cause unconstrained demands to increase. The Drought Risk Assessment presented in Section 9.5 accounts for this increase in unconstrained water demand. Cal Water's demand forecast model separately estimates water use for normal, wet, and dry weather conditions. Table 4-8 shows unconstrained demands for 2021-2025 for normal weather and multiple-dry-year scenarios.

Table 4-8. Characteristic Five-Year Water Use (AF)

Weather Scenario	2021	2022	2023	2024	2025
Multi-Year Dry	31,274	31,813	32,376	32,954	33,543
Normal	30,322	30,844	31,390	31,950	32,520
NOTES: The table shows unconstrained demand (i.e., demand in the absence of drought water use restrictions).					

[21] City of Visalia Housing Element 2020-2023, Table 1-21. Accessed from https://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=34534

4.3 Climate Change Considerations

☑ ***CWC § 10635(b)***

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

Climate strongly influences the level and seasonal pattern of District water demands. Cal Water has analyzed the effect of climate and weather variability on both aspects of demand.[22] Using this information, Cal Water has estimated the effect of alternative climate warming scenarios on future water demand.[23] Table 4-9 summarizes the results of this analysis. It shows that for plausible emission scenarios and corresponding temperature increases, climate change may, on average, increase future District demands by 2 to 3 percent compared to current climate conditions. Two points are worth noting. First, this is the average effect. There is significant variation about the mean. Second, this is a ceteris paribus, or all else equal, result. It assumes existing levels and types of landscaping. However, landscaping choices are partly a function of climate and as the climate changes, so too may these choices. It is reasonable to think households and businesses will adapt their landscaping as the climate warms. This adaptation may mitigate some of the expected demand increase shown in the table.

[22] A&N Technical Services, 2014. Cal Water Long-Term Water Demand Forecast Model. Report prepared for California Water Service Company. December 2014.

[23] Table 4-9 uses climate scenarios for the southwestern United States. These in turn rely on alternative greenhouse gas emission scenarios. Emissions under scenario A2 are higher than under scenario B2. The 80th percentile scenario is the 80th percentile temperature change for the full suite of emission scenarios. For further information, see Kunkel, K.E, L.E. Stevens, S.E. Stevens, L. Sun, E. Janssen, D. Wuebbles, K.T. Redmond, and J.G. Dobson, 2013. Regional Climate Trends and Scenarios for the U.S. National Climate Assessment. Part 5. Climate of the Southwest U.S., NOAA Technical Report NESDIS 142-5, dated 2013.

Table 4-9. Climate Change Effect on Demand

Emissions Scenario	Change in Mean Temperature by 2040 (degree F)	Change from Current Mean Temperature (%)	Effect on Demand (%)
Lower Emissions Scenario (B1)	2.5	3.4%	2.0%
Higher Emissions Scenario (A2)	2.7	3.7%	2.1%
80%ile Temperature Scenario	3.6	4.9%	2.8%

NOTES:
(a) Predicted temperature increases for Southwest United States for alternative emission scenarios reported in Kunkel et al. (2013). Predicted effect on demand derived from weather response models estimated with historical monthly water use, temperature, and rainfall data.
(b) The physical climate framework for the 2013 National Climate Assessment is based on climate model simulations of the future using the high (A2) and low (B1) SRES emissions scenarios. The A1B emission scenario reflects a middle case between the A2 and B1 scenarios. The 80%ile scenario is the 80th percentile temperature change across the family of emissions scenarios. Further description of emission scenarios can be found at https://www.ipcc.ch/site/assets/uploads/2018/03/sres-en.pdf

Chapter 5
SB X7-7 Baseline and Targets

☑ ***CWC § 10608.24 (b)***

Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

☑ ***CWC § 10608.28***

(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

The Water Conservation Act of 2009, also known as Senate Bill (SB) X7-7, requires that urban retail water suppliers reduce their per capita water use by 20 percent by 2020. SB X7-7 defines an urban retail water supplier as "a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes" (CWC §10608.12). The Visalia District meets both criteria. The state will assess each urban retail water supplier's 2020 per capita water use against the target it established in its 2015 urban water management plan (UWMP).

This chapter demonstrates the District's compliance with its SB X7-7 per capita water use target and includes the following sections:

5.1 Wholesale Suppliers

5.2 Updates to the 2015 UWMP Calculations

5.3 Service Area Population

5.4 Baseline Periods, Baseline GPCD, and Confirmed SB X7-7 2020 Target

5.5 Demonstration of Compliance with SB X7-7 2020 Target

5.6 Demonstration of Compliance with Regional Alliance SB X7-7 2020 Target

5.1 Wholesale Suppliers

SB X7-7 does not directly apply to wholesale water suppliers. Wholesale suppliers may adopt programs and policies that support SB X7-7 compliance by the retail water suppliers they serve. They may also take part in a Regional Alliance (discussed below) set up to satisfy SB X7-7 requirements on a regional basis. As discussed in Chapter 2, the District is not a wholesale water supplier and does not receive water supply from any wholesale water supplier. This section therefore does not apply.

5.2 Updates to the 2015 UWMP Calculations

The District has not made any changes to the information in its 2015 UWMP pertaining to SB X7-7.

5.3 Service Area Population

Service area population estimation must satisfy the requirements in Methodology 2 – Service Area Population – of DWR's *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*. California Water Service Company (Cal Water)'s population estimation method is similar to the method used by DWR's Population Tool.[24] DWR reviewed and accepted Cal Water's population estimation method as part of the review of its 2015 UWMPs. Cal Water used this method to estimate the District's 2020 service area population. As reported in Chapter 3, the District's population was 147,032 in 2020.

[24] Cal Water estimates service area population using census block population data with the LandView 5 and MARPLOT software programs. In census years, the method estimates service area population using the population counts of census blocks with centroids falling within the District's service boundary. In off-census years, the method estimates population by adjusting the census year estimates for changes in the number of single- and multi-family service connections and dwelling units. As shown in the District's 2015 UWMP, estimates prepared using this method and DWR's Population Tool typically differ by less than a percent. Cal Water prefers using its method to be consistent with its other planning documents.

5.4 Baseline Periods, Baseline GPCD, and Confirmed SB X7-7 2020 Target

Table 5-1 shows the District's 5- and 10-year baseline periods, baseline per capita water use (GPCD), and SB X7-7 2020 target. Supporting population and water use data are in Appendix E.

Table 5-1. SB X7-7 Baselines and Targets Summary (DWR Table 5-1)

Baseline Period	Start Year	End Year	Average Baseline GPCD	Confirmed 2020 Target GPCD
10-15 year	1999	2008	247	198
5 Year	2003	2007	246	
NOTES:				

5.5 Demonstration of Compliance with SB X7-7 2020 Target

Service area population and water use in 2020 were 147,032 and 30,152 AF, respectively, resulting in per capita water use of 183 GPCD. This is less than target SB X7-7 GPCD, as shown in Table 5-2. Supporting population and water use data are in Appendix E.

Table 5-2. SB X7-7 2020 Compliance (DWR Table 5-2)

2020 GPCD			2020 Confirmed Target GPCD	Did Supplier Achieve Targeted Reduction for 2020?
Actual 2020 GPCD	2020 TOTAL Adjustments	Adjusted 2020 GPCD *(Adjusted if applicable)*		
183			198	Yes
NOTES:				

5.6 Demonstration of Compliance with Regional Alliance SB X7-7 2020 Target

An urban retail water supplier can satisfy SB X7-7 requirements either individually or as part of a Regional Alliance. The District formed a regional alliance with other Cal Water districts in the Tulare Lake Hydrologic Region. The name of this Regional Alliance is California Water Service – Tulare Lake Regional Alliance. Table 5-3 shows 2020 per capita water use for this Regional Alliance. Table 5-4 demonstrates compliance with the Regional Alliance's SB X7-7 2020 target GPCD. Supporting population and water use data are in Appendix E.

Table 5-3. SB X7-7 Regional Alliance – 2020 GPCD (DWR RA 2020 GPCD Table)

Participating Member Agency Name	2020 Actual GPCD*	2020 Population	(2020 GPCD) X (2020 Population)	Regional Alliance 2020 GPCD (Actual)
Cal Water Bakersfield District	185	286,310	53,045,181	
Cal Water Kern R. Valley District	126	5,501	693,126	
Cal Water Selma District	157	26,157	4,099,875	
Cal Water Visalia District	183	147,032	26,918,034	
Regional Alliance Totals	651	465,000	84,756,216	182

**All participating agencies must submit individual SB X7-7 Tables, as applicable, showing the individual agency's calculations. These tables are: SB X7-7 Tables 0 through 6, Table 7, any required supporting tables (as stated in SB X7-7 Table 7), and SB X7-7 Table 9, as applicable. These individual agency tables will be submitted with the individual or Regional Urban Water Management Plan.*

Table 5-4. SB X7-7 Regional Alliance – 2020 Compliance (DWR RA 2020 Compliance Table)

2020 Actual GPCD	Optional Adjustment for Economic Growth[1]	Adjusted 2020 Actual GPCD	2020 Target GPCD [2]	Did Alliance Achieve Targeted Reduction for 2020?
182			222	Yes

[1]Adjustments for economic growth can be applied to either the individual supplier's data or to the aggregate regional alliance data (but not both), depending upon availability of suitable data and methods. [2] 2020 Target GPCD will be taken from the Regional Alliance's SB X7-7 Verification Form, Weighted Target Table.

Chapter 6
Water Supply Characterization

☑ ***CWC § 10631 (b)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

This chapter provides a description of the Visalia District's (also referred to herein as the "District") current water supplies, including a discussion of the underlying groundwater basins and their management, and potential supply sources, such as surface water, stormwater, and recycled water, as well as assessment of the energy intensity used to operate the Visalia District treatment and distribution system. This chapter includes the following sections:

6.1 Purchased Water

6.2 Groundwater

6.3 Surface Water

6.4 Stormwater

6.5 Wastewater and Recycled Water

6.6 Desalinated Water Opportunities

6.7 Water Exchanges and Transfers

6.8 Future Water Projects

6.9 Summary of Existing and Planned Sources of Water

6.10 Special Conditions

6.11 Energy Intensity

6.1 Purchased Water

☑ ***CWC § 10631 (h)*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

California Water Service Company (Cal Water) does not currently purchase any imported water to meet demands in its Visalia District.

6.2 Groundwater

☑ ***CWC § 10631***

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:

(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.

(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Groundwater is the sole source of water supply for the Visalia District. This section includes information regarding the underlying basin descriptions, groundwater management, and Cal Water's coordination with the applicable Groundwater Sustainability Agencies (GSAs), followed by a discussion of historical pumping and supply sufficiency.

6.2.1 Basin Description and Status

As shown on Figure 6-1, the three Public Water Systems (PWSs) that comprise the Visalia District overlie the Kaweah Subbasin (California Department of Water Resources [DWR] Basin No. 5-022.11) and the Tule Subbasin (DWR Basin No. 5-022.13) of the San Joaquin Valley Basin. The Visalia PWS and the Tulco PWS overly the Kaweah Subbasin while the very small Mullen PWS overlies the Tule Subbasin.

It should be noted that pumping by the Mullen PWS in the Tule Subbasin has historically comprised approximately 0.1% of the total District pumping. Given this, projected District demands included in this Urban Water Management Plan (UWMP or Plan) are not apportioned by groundwater subbasin, but presented on a District-wide basis. However, because the District overlies both basins, for purposes of the following analysis, both the Kaweah and Tule Subbasins are considered. The Kaweah and Tule Subbasins are not adjudicated; however, in its recent evaluation of California's groundwater basins, DWR determined that both subbasins are in a condition of critical overdraft. [25]

Kaweah Subbasin

The Kaweah Subbasin covers an area of approximately 446,000 acres (696 square miles) in the San Joaquin Valley and lies between the Kings Subbasin on the north, the Tule Subbasin on the south, crystalline bedrock of the Sierra Nevada foothills on the east, and the Tulare Lake subbasin on the west. [26]

The Kaweah Subbasin is designated as a high priority basin under DWR's 2019 Phase 2 Basin Prioritization. [27] Under this prioritization process, basins are ranked on eight components, and if a basin is assigned more than 21 total points, it is defined as "high priority." The main factors driving the designation in the Kaweah Subbasin include irrigated acreage per square mile (5 out of 5 possible points), population growth (5 out of 5 possible points), and groundwater reliance (5 out of 5 possible points). Additional factors include documented impacts including declining groundwater levels and subsidence (4 out of 5 possible points) and total well density (4 out of 5

[25] DWR, 2019. Sustainable Groundwater Management Act 2018 Basin Prioritization, State of California, dated January 2019.
[26] DWR, 2004. Bulletin 118 Basin Boundary Description, Kaweah Subbasin, dated February 2004.
[27] DWR, 2019. Sustainable Groundwater Management Act 2018 Basin Prioritization, State of California, dated January 2019.

possible points).[28] However, because the subbasin is critically overdrafted, it is assigned 40 priority points, which is the maximum total points under DWR's ranking system.

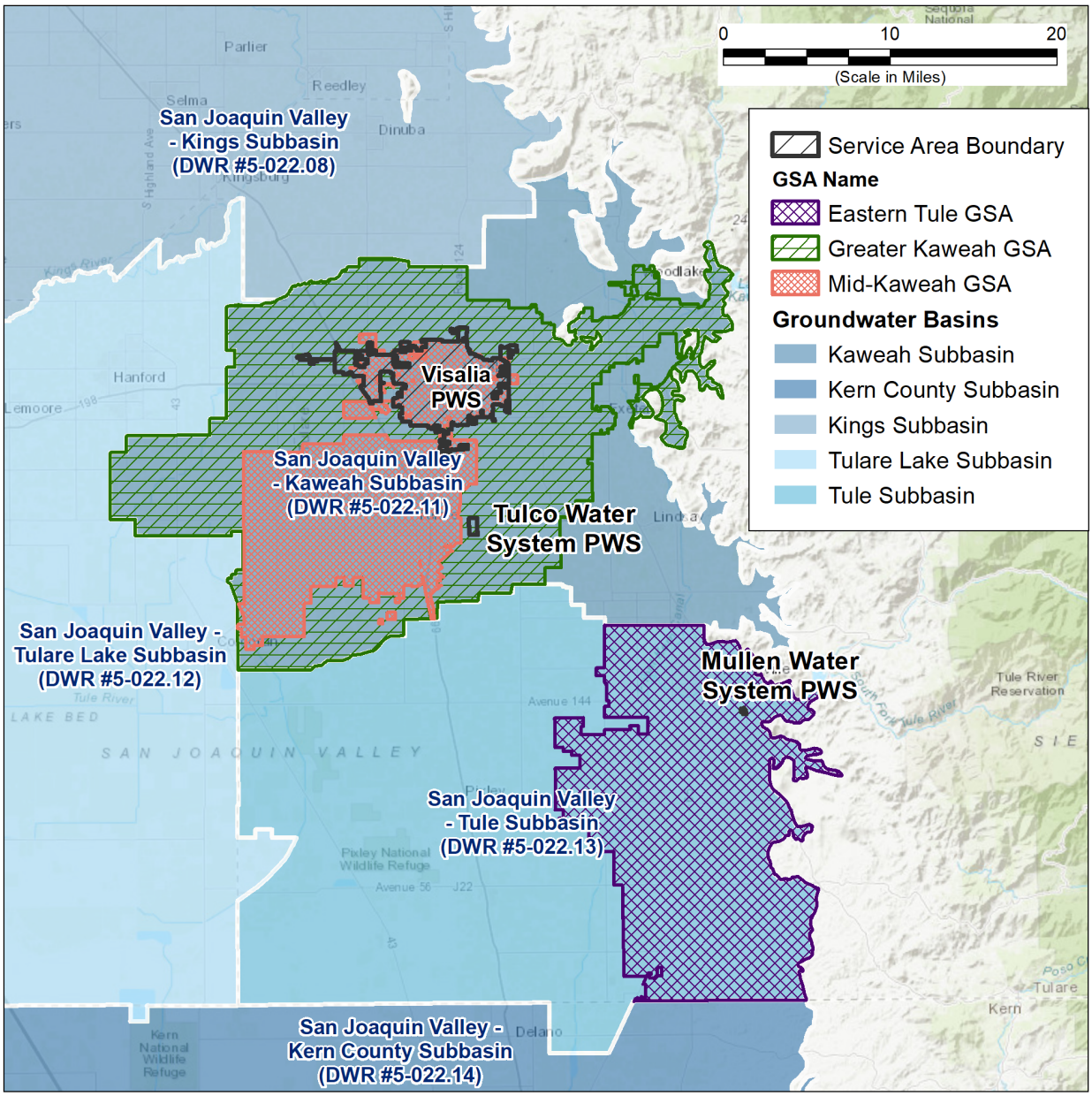
Tule Subbasin

The Tule Subbasin covers an area of approximately 475,895 acres (744 square miles) and is located almost entirely within Tulare County. The Tule Subbasin is delineated by various water districts, the largest of which is the Lower Tule River Irrigation District. The eastern boundary of the subbasin is the Sierra Nevada Mountain Range. The southern and western boundaries generally follow the Tulare County line.[29]

The Tule Subbasin is designated as a high priority basin under DWR's 2019 Phase 2 Basin Prioritization.[30] The main factors driving the designation in the Tule Subbasin include irrigated acreage per square mile (5 out of 5 possible points) and groundwater reliance (5 out of 5 possible points). Additional factors include documented impacts including declining groundwater levels and subsidence (4 out of 5 possible points) and population growth (4 out of 5 possible points).[31] However, because the subbasin is critically overdrafted, it is assigned 40 priority points, which is the maximum total points under DWR's ranking system.

[28] DWR's 2019 Phase 2 Basin Prioritization used the basin's total possible ranking points assigned to each of the eight components to determine the priority. A basin is defined as High Priority if it has more than 21 total ranking points.
[29] DWR, 2018. Bulletin 118 Basin Boundary Description, Tule Subbasin, dated March 2018.
[30] DWR, 2019. Sustainable Groundwater Management Act 2018 Basin Prioritization, State of California, dated January 2019.
[31] DWR's 2019 Phase 2 Basin Prioritization used the basin's total possible ranking points assigned to each of the eight components to determine the priority. A basin is defined as High Priority if it has more than 21 total ranking points.

Figure 6-1. Groundwater Basins Underlying the Visalia District



Additional details on the Kaweah and Tule Subbasins are given in the DWR's Groundwater Bulletin 118, as well as in the key documents described below related to groundwater management of the subbasins, which are incorporated into this Plan by reference:

- The final Groundwater Sustainability Plans (GSPs) for the Mid-Kaweah GSA, the Greater Kaweah GSA, and the Eastern Tule GSA (ETGSA), including current groundwater

conditions, hydrogeologic conceptual models, water budgets, local sustainable management criteria, and projects and management actions for reaching sustainability in the subbasins by 2040, are available on the DWR Sustainable Groundwater Management Act (SGMA) Portal website:

https://sgma.water.ca.gov/portal/gsp/all

- The Kaweah River Basin Integrated Regional Water Management Plan (IRWMP), including detailed descriptions of Kaweah Subbasin hydrogeology, history of water and wastewater management, water quality, and water resources management, is available on the Kaweah Delta Water Conservation District website:

  http://www.kdwcd.com/water-resources/

- The Tule River Basin IRWMP, including detailed descriptions of the regions water supply and demand, resource management strategies, and potential projects, is available on the Tule River Basin IRWMP website:

  https://www.tuleirwmp.com/documents/

6.2.2 Non-SGMA Groundwater Management

Kaweah Subbasin

Prior to the passage of SGMA, the Kaweah Subbasin was managed according to the Kaweah River Basin IRWMP. The most recent update to the Kaweah River Basin IRWMP was adopted in July 2018. The objectives identified by the Kaweah River Basin Regional Water Management Group and stated in the IRWMP fall into five categories: (1) groundwater management, (2) water supply, (3) water quality, (4) flood control, and (5) ecosystem restoration.[32] These objectives were used to inform water management strategies and potential project proposals to accomplish the goals of the region. The Kaweah Subbasin GSPs (discussed below) supersede the IRWMP as the groundwater management plan for the Kaweah Subbasin.

The Kaweah Delta Water Conservation District (KDWCD) and other irrigation districts and companies have historically managed groundwater through the conjunctive use of surface water. KDWCD regularly provides programs that benefit local agricultural customers by making available additional surface water supplies for irrigation. These programs effectively reduce the withdrawals of groundwater resulting in in-lieu recharge of the aquifer. Groundwater is normally

[32] Kaweah River Basin Regional Water Management Group, 2018. Kaweah River Basin Integrated Regional Water Management Plan, dated July 2018.

used by agriculture as an alternate source when surface supplies are not available, and is the sole source in areas within KDWCD jurisdiction that do not have access to surface water.

The KDWCD also operates dedicated water management basins for the multiple purposes of flood control and groundwater replenishment. The basins have the capacity to recharge the underlying groundwater basin. Normal operation of these facilities provides both the direct and indirect groundwater recharge of the basin in the form of conveyance losses and from agricultural applications of surface water that percolate into the aquifer.

In areas of the Lower Kaweah River such as Packwood and Cameron Creeks, surface water deliveries are managed by Tulare Irrigation District (TID) and other irrigation districts and companies. The City of Visalia (City) maintains a groundwater recharge program that provides localized benefit to the Visalia District; Cal Water customers fund the program through a groundwater pumping charge. Under this program the City works cooperatively with KDWCD and these irrigation districts and companies to manage groundwater resources.

Tule Subbasin

Prior to the passage of SGMA, the Tule Subbasin was managed according to the Tule River Basin IRWMP. The most recent update to the Tule River Basin IRWMP was adopted in June 2018. The goals identified by the Tule River Basin Integrated Regional Water Management Group stated in the IRWMP include: (1) maintain or improve the health of ecosystems within the region, (2) protection of life, structure, equipment, and property from flooding (3) reduction of contamination of surface and groundwater resources, (4) expand regional response to climate change through mitigation and adaption strategies, and (5) work toward achievement of sustainable balanced surface and groundwater supplies.[33] These goals were used to inform resource management strategies and potential project proposals to accomplish the goals of the region. The Eastern Tule GSP (discussed below) supersedes the IRWMP as the groundwater management plan for the portion of the Tule Subbasin where the Mullen PWS is located.

6.2.3 SGMA Groundwater Management

In 2014, the California State Legislature enacted SGMA with subsequent amendments in 2015. Among other things, SGMA requires the formation of GSAs and the development and implementation of GSPs for groundwater basins that are designated by DWR as medium or high priority. As high priority, critically overdrafted and non-adjudicated basins, the Kaweah and Tule Subbasins are subject to the requirements of SGMA.

[33] Tule River Basin Regional Water Management Group, 2018. Tule River Basin Integrated Regional Water Management Plan, dated June 2018.

Kaweah Subbasin

Three GSAs were formed to collectively assume responsibility for sustainable groundwater management of the Kaweah Subbasin. The three GSAs within the Basin include: the Mid-Kaweah GSA, East Kaweah GSA, and Greater Kaweah GSA. Each GSA prepared an individual GSP, but certain technical efforts (e.g., development of a coordinated water budget) were cooperatively developed through a Coordination Agreement.

As shown in Figure 6-1, the majority of the Visalia PWS falls within the jurisdiction of the Mid-Kaweah GSA, which covers an area of approximately 104,320 acres in the central to southwestern side of the Kaweah Subbasin. The Mid-Kaweah GSA was formed September 14, 2015, through execution of a Joint Powers Agreement (JPA) between the City of Tulare, City of Visalia, and TID to establish the Mid-Kaweah Groundwater Subbasin JPA. The Mid-Kaweah GSA GSP was submitted to DWR on January 31, 2020. [34]

Small portions of the Visalia PWS and the entirety of the Tulco PWS fall within the jurisdiction of the Greater Kaweah GSA, which covers an area of approximately 217,600 acres across the Kaweah Subbasin. The Greater Kaweah GSA was formed August 23, 2016, through execution of a JPA between the KDWCD, the County of Tulare, Kings County Water District, Lakeside Irrigation District, and St. Johns Water District. The Greater Kaweah GSA GSP was submitted to DWR on January 31, 2020. [35]

As defined under SGMA, sustainable yield means "the maximum quantity of water, calculated over a base period representative of long-term conditions in a basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing undesirable results." [36] The three GSAs within the Kaweah Subbasin determined a subbasin-wide sustainable yield of 660,000 acre-feet per year (AFY), which was further apportioned among the GSAs in the Kaweah Subbasin Coordination Agreement. [37]

Projects and management actions described in the Mid-Kaweah GSA GSP include: groundwater recharge projects and programs, surface reservoir projects, leveraged surface water exchange programs, a groundwater extraction measurement implementation program, a conceptual groundwater marketing program, and future urban and agricultural conservation. The Mid-Kaweah GSA GSP states that the GSA will work during the period from 2020 to 2025 to develop a pumping allocation program to achieve, along with neighboring GSAs, the Kaweah Subbasin's sustainable yield by 2040. The Mid-Kaweah GSA plans to prioritize the projects/programs above

[34] Mid-Kaweah GSA, 2019. Mid-Kaweah GSA GSP, dated December 2019.
[35] Greater Kaweah GSA, 2020. Greater Kaweah GSA GSP, dated January 2020.
[36] California Water Code (CWC) §10721(w)
[37] East Kaweah GSA, et al., 2019. Kaweah Subbasin Coordination Agreement, dated January 2020.

to serve as the first means to achieve sustainability, but by 2026, it is anticipated that an allocation plan would be ready for implementation if necessary to achieve sustainability. [38]

Projects and management actions described in the Greater Kaweah GSA GSP include: new recharge and storage facilities, improvements to existing recharge basins, and agricultural and urban conservation. Additionally, the Greater Kaweah GSA GSP discusses the potential use of flow meters, which would allow for management programs including fees and incentives, a groundwater market, and allocations. The Greater Kaweah GSA GSP specifically states that an allocation program will be considered in the event that other management actions fall short of the Greater Kaweah GSA's objectives. [39]

Tule Subbasin

Seven GSAs were formed to collectively assume responsibility for sustainable groundwater management of the Tule Subbasin. The seven GSAs within the Basin include: ETGSA, Tri-County Water Authority GSA, Pixley Irrigation District GSA, Lower Tule River Irrigation District GSA, Delano-Earlimart Irrigation District GSA, Alpaugh GSA, and Tulare County GSA. Each GSA prepared an individual GSP, but certain technical efforts (e.g., development of a coordinated water budget and sustainability goal) were cooperatively developed through a Coordination Agreement.

The Mullen PWS portion of the Visalia District falls within the jurisdiction of the ETGSA, which covers an area of approximately 160,867 acres in the southeastern portion of Tulare County. The ETGSA was formed December 6, 2016, through execution of a JPA between the City of Porterville, Porterville Irrigation District, Saucelito Irrigation District, Teapot Dome Water District, Vandalia Water District, Terra Bella Irrigation District, Kern-Tulare Water District, and Tulare County. The ETGSA GSP was submitted to DWR on January 31, 2020. [40]

The seven GSAs within the Tule Subbasin determined a basin-wide sustainable yield of 130,000 AFY [41] which has not been further allocated at the present time. The ETGSA GSP includes plans to develop a groundwater accounting system to track groundwater use and establish an allocation structure to be used during the SGMA implementation period. The most recent annual report published by the ETGSA states that the groundwater accounting action remains under development. [42] Other projects and management actions described in the ETGSA GSP include: fees and incentives, land subsidence management and monitoring, existing water supply optimization projects, surface water development projects, managed aquifer recharge and

[38] Mid-Kaweah GSA, 2019. Mid-Kaweah GSA GSP, dated December 2019.
[39] Greater Kaweah GSA, 2020. Greater Kaweah GSA GSP, dated January 2020.
[40] ETGSA, 2020. ETGSA GSP, dated January 2020.
[41] Ibid.
[42] ETGSA, 2020. SGMA Annual Report - ETGSA, dated April 2020.

banking projects, and agricultural land retirement (fallowing) projects. The ETGSA GSP states that, through the implementation of the projects and management actions above, the ETGSA can achieve and maintain groundwater sustainability in its jurisdictional area. [43]

6.2.4 Cal Water Coordination with Groundwater Sustainability Agencies

Cal Water's groundwater basin management philosophy continues to be to work collaboratively with all stakeholders in the basins where we operate and to do what is best for the groundwater basin including the sharing of burden(s) and benefits on an equitable basis with said stakeholders. Cal Water recognizes and deeply supports the goals, objectives, and intended outcomes of the SGMA. Moreover, the company recognizes the numerous challenges of implementing the legislation along a variety of technical, legal, political, and financial/economic dimensions, particularly when the geographical diversity of the Cal Water's service territory is considered. None-the-less, Cal Water intends to take an active role in the local and state-wide management of groundwater resources over the next five to 25+ years by fully supporting and participating in the principal edicts of SGMA. A number of specific steps that Cal Water has taken with respect to this position and role include (among others):

- Cal Water has appointed representatives to serve on the Greater Kaweah GSA Board and the Mid-Kaweah GSA Technical Advisory Committee (TAC);
- Coordination with public agencies to ensure that Cal Water's presence, rights and interests, as well as historical and current resource management concerns are honored/incorporated within the GSA and GSP formulation process(es);
- Coordination with applicable local and regulatory agencies to ensure that Cal Water is at full participation, while also meeting the requirements and expectations set forth by SGMA;
- Enhanced use of digital/electronic groundwater monitoring equipment and other new technology aimed at measuring withdrawal rates, pumping water levels, and key water quality parameters within the context of day-to-day operations;
- Participation in the development of GSP's and formulation of groundwater models being constructed in basins where Cal Water has an operating presence;
- Participation in individual and/or joint projects aimed at mitigating seawater intrusion and other "undesirable results" where appropriate;
- Inclusion of sound groundwater management principles and data in all applicable technical reports, studies, facility master plans, and UWMPs (including this 2020 update),

[43] ETGSA, 2020. ETGSA GSP, dated January 2020.

particularly as these undertakings relate or pertain to water resource adequacy and reliability; and,

- Inclusion of sound groundwater management principles and data in all general rate case (GRC) filings and grant applications to ensure that resource management objectives remain visible and central to Cal Water's long-term planning/budgeting efforts.

6.2.5 Historical Pumping and Supply Sufficiency

The groundwater used by the Visalia District is extracted from the underlying Kaweah and Tule Subbasins. The District has a total of 59 active wells located within the Visalia PWS, two wells within the Mullen PWS, and one well within the Tulco PWS service area boundaries shown in Figure 6-1.

There are four surface storage structures, enabling the groundwater wells to pump to storage during non-peak demand periods and provide peak day demand. The District has sufficient production capacity to supply all of the District's current annual average day and maximum day demand.

As noted above, groundwater is the only source of supply for the Visalia District. Table 6-1 lists the amount of groundwater pumped by Cal Water over the past five years. The available groundwater supply has been sufficient to meet all of the District's demands in the past five years and all prior years.

Section 7.1.1 presents an analysis of the availability of groundwater supply for the District based on historical groundwater use and review of available information regarding groundwater supply availability to the Visalia District, including the impacts of SGMA. Based on the available information, the available groundwater supply is expected to be sufficient to meet the projected future demands of the District in normal and multiple dry year periods through 2045. It should be noted that the Kaweah and Tule Subbasins are not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

Table 6-1. Groundwater Volume Pumped (DWR Table 6-1)

	Supplier does not pump groundwater. The supplier will not complete the table below.					
	All or part of the groundwater described below is desalinated.					
Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Kaweah Subbasin	25,802	27,856	29,218	28,900	30,131
Alluvial Basin	Tule Subbasin	41	26	25	19	21
	TOTAL	25,843	27,882	29,243	28,919	30,152

NOTES:
(a) Volumes are in units of AF.
(b) It should be noted that the Kaweah and Tule Subbasins are not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

6.3 Surface Water

Cal Water does not impound or divert surface water as a means to meet demands in the Visalia District, however, the District has explored the possibilities of surface water recharge and conjunctive use programs.

6.4 Stormwater

While Cal Water has no current plans to capture stormwater for beneficial use in the Visalia District, the City of Visalia has made improvements and upgrades to its infrastructure to capture and recharge stormwater to the groundwater basin.

6.5 Wastewater and Recycled Water

☑ ***CWC § 10633***

The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.

The recycling of wastewater offers several benefits to Cal Water and its customers. Perhaps the greatest of these benefits is to help maintain a sustainable groundwater supply either through

direct recharge, or by reducing potable supply needs by utilizing recycled water for appropriate uses (e.g., landscape irrigation) now being served by potable water. In 2018, through its Water Conservation Plant Upgrade Project, the City of Visalia began producing Title 22 Recycled Water for delivery to the TID in exchange for surface water used to recharge the City's groundwater. However, this supply source is not used directly by District customers and is not quantified as a District supply source in the tables included in this chapter.

6.5.1 Recycled Water Coordination

The Visalia District relies on and coordinates with the City of Visalia for wastewater treatment.

6.5.2 Wastewater Collection, Treatment, and Disposal

☑ ***CWC § 10633 (a)***

A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

☑ ***CWC § 10633 (b)***

A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

The City of Visalia operates and maintains the sewer system and provides wastewater treatment service for the Visalia District. Table 6-2 includes an estimate of the volume of wastewater collected from Visalia District customers in 2020. The estimate is calculated by annualizing 90 percent of January water use in the service area. As shown in Table 6-3, no wastewater is treated or disposed of within the District.

The City's sewer system consists of gravity sewers, pumping stations, and force mains to collect wastewater from residential, commercial, and industrial customers. The collected wastewater is discharged to trunk sewers and interceptors and conveyed to the City of Visalia Water Conservation Plant (WCP), which is not within the Visalia District boundaries. In 2017, the City of Visalia completed an upgrade project at the WCP which included replacement of the secondary and tertiary treatment processes with a membrane bioreactor (MBR) system and ultra-violet light (UV) disinfection system, among other upgrades. The WCP has a capacity to treat 22 million gallons per day (MGD).

Currently, no wastewater is recycled for direct reuse within the Visalia District service area. The cost of implementation of a recycled water system for direct potable reuse in the District is not planned at this time and will likely only be considered if conditions related to District supply change significantly in the future.

Table 6-2. Wastewater Collected Within Service Area in 2020 (DWR Table 6-2)

	There is no wastewater collection system. The supplier will not complete the table below.
	Percentage of 2020 service area covered by wastewater collection system *(optional)*
	Percentage of 2020 service area population covered by wastewater collection system *(optional)*

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party? *(optional)*
City of Visalia	Estimated	14,635	City of Visalia	Visalia Water Conservation Plant	No	
Total Wastewater Collected from Service Area in 2020:		14,635				

NOTES:
(a) Volumes are in units of AF.
(b) The volume of wastewater collected from the Visalia District service area in 2020 is estimated by annualizing 90 percent of January water use in the District.

Table 6-3. Wastewater and Discharge Within Service Area in 2020 (DWR Table 6-3)

X	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 volumes				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
						Total					
NOTES:											

6.5.3 Recycled Water System and Recycled Water Beneficial Uses

☑ ***CWC § 10633 (c-g)***

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

As shown in Table 6-4 and Table 6-5, the Visalia District does not have any current or projected beneficial use of recycled water.

Table 6-4. Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4)

X	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.
Name of Supplier Producing (Treating) the Recycled Water:	
Name of Supplier Operating the Recycled Water Distribution System:	
Supplemental Water Added in 2020 (volume)	
Source of 2020 Supplemental Water	

Beneficial Use Type	**Potential** Beneficial Uses of Recycled Water (Describe)	Amount of **Potential** Uses of Recycled Water (Quantity)	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
				Total:						
					2020 Internal Reuse					

NOTES:

Table 6-5. 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual (DWR Table 6-5)

X	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below.

Beneficial Use Type	2015 Projection for 2020	2020 Actual Use
Total		
NOTES:		

6.5.4 Actions to Encourage and Optimize Future Recycled Water Use

At this time, as shown in Table 6-6, Cal Water does not have plans to initiate/expand the use of recycled water within the Visalia District. Cal Water's supply portfolio in some districts already includes recycled water; elsewhere, Cal Water is participating in studies of the possibility of adding this supply source. Cal Water is eager to expand its portfolio to provide recycled water to its customers wherever feasible, and to form partnerships with other agencies and jurisdictions to accomplish this. However, any such project must be economically feasible and approval of such an investment by the California Public Utilities Commission (CPUC) is contingent on a demonstration that it is beneficial to ratepayers.

Table 6-6. Methods to Expand Future Recycled Water Use (DWR Table 6-6)

X	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.
Section 6.5.4	Provide page location of narrative in UWMP

Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
		Total	
NOTES:			

6.6 Desalinated Water Opportunities

☑ ***CWC § 10631 (g)*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

The Visalia District is located in the eastern Central Valley, many miles from the nearest source of saline water. As such, there are no opportunities for the development of desalinated water in the District.

6.7 Water Exchanges and Transfers

☑ ***CWC § 10631 (c)*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

Cal Water does not hold any surface water rights in the Visalia District that could be transferred to other agencies and is not pursuing water transfers or exchanges at this time.

6.7.1 Exchanges

Cal Water is not pursuing water exchanges involving the Visalia District and other entities at this time.

6.7.2 Transfers

Cal Water is not pursuing water transfers involving the Visalia District and other entities at this time. During the recent drought, the Visalia District wheeled water through its distribution system to a neighboring agency; however, this water was not considered a transfer of District supply.

6.7.3 Emergency Interties

Cal Water does not have any interties, emergency or otherwise, with any other agencies.

6.8 Future Water Projects

☑ ***CWC § 10631*** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

(b) (3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

(f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

Groundwater will likely continue to be the only supply source for the Visalia District over the planning horizon (i.e., through 2045) and Cal Water will maintain sufficient wells and distribution facilities to meet the anticipated increases in future demand as needed. Cal Water has worked collaboratively with the City of Visalia to develop and plan groundwater recharge programs and will continue to work with the City to support their implementation and to consider potential expansions. Cal Water continually investigates opportunities outside the City of Visalia to participate in conjunctive use programs or otherwise expand supplies available to the District. However, as shown in Table 6-7, there are no planned future water supply projects or programs that are expected to provide a quantifiable increase to the District's water supply.

Table 6-7. Expected Future Water Supply Projects or Programs (DWR Table 6-7)

X	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier
	Y/N	*If Yes, Supplier Name*				
NOTES:						

6.9 Summary of Existing and Planned Sources of Water

☑ ***CWC § 10631 (b)*** *Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

☑ ***CWC § 10631 (b) (2)*** *When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.*

☑ ***CWC § 10631 (b) (4) (D)*** *A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*

Table 6-8 summarizes the actual volumes of purchased water and groundwater production for calendar year 2020, as applicable. As discussed above, groundwater will be used to serve all projected demand within the Visalia District through 2045. Therefore, the groundwater supply amounts shown in Table 6-9 equal the projected demand in each year (see Section 7.1.1). It should be noted that the Kaweah and Tule Subbasins are not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

Table 6-8. Water Supplies – Actual (DWR Table 6-8)

Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume	Water Quality	Total Right or Safe Yield *(optional)*
Groundwater (not desalinated)	Kaweah Subbasin	30,131	Drinking Water	
Groundwater (not desalinated)	Tule Subbasin	21	Drinking Water	
	Total	30,152		

NOTES:
(a) Volumes are in units of AF.
(b) It should be noted that the Kaweah and Tule Subbasins are not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

Table 6-9. Water Supplies – Projected (DWR Table 6-9)

Water Supply	Additional Detail on Water Supply	Projected Water Supply									
		2025		2030		2035		2040		2045	
		Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Groundwater (not desalinated)		32,520		35,276		38,310		41,258		44,529	
Total		32,520		35,276		38,310		41,258		44,529	

NOTES:
(a) Volumes are in units of AF.
(b) It should be noted that the Kaweah and Tule Subbasins are not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

6.10 Special Conditions

6.10.1 Climate Change Effects

Cal Water is committed to incorporating climate change into its ongoing water supply planning. Section 4.3 of this Plan includes a description of plausible changes to projected demands under climate change conditions, and Cal Water is currently working to consider the effects of climate change in future demand modeling. The impact of climate change on District supplies is addressed in detail in the key resources described below, which are incorporated into this Plan by reference:

- Cal Water is currently in the process of developing a multi-phase climate change study. Phase 1, which primarily consisted of a literature and tools review of previous and complementary studies, was completed in December 2020.[44] Phase 2 will include District-level vulnerability assessments of Cal Water's facilities and operations, including developing an assessment approach that evaluates climate impacts to Cal Water, identifies asset vulnerabilities, and prioritizes climate risks. Phase 3 will focus on an assessment of climate-driven impacts to water supply resources and demand. Phase 2 is expected to be completed by December 2021. The executive summary of Phase 1 of this study is included in this Plan in Appendix F.

- In 2016, Cal Water completed a study of climate change impacts on a representative subset of its districts to gain a better understanding of the potential impacts of climate change on the availability of its diverse supplies.[45] The 2016 study relied on the best available projections of changes in climate (temperature and precipitation) through the end of the century to examine how surface water flows and groundwater recharge rates may change. The executive summary of this study is included in this Plan in Appendix F.

- SGMA dictates that GSPs include basin-wide water budget models under various climate change scenarios, including future conditions which account for the effects of estimated climate change. The final Mid Kaweah GSA, Greater Kaweah GSA, and ETGSA GSPs are available on the DWR website:
  https://sgma.water.ca.gov/portal/gsp/all

[44] ICF, 2020. California Water Service Climate Change – Water Resource Monitoring and Adaptation Plan – Phase 1, prepared by ICF, dated December, 17, 2020.
[45] California Water Service Company, 2016. Potential Climate Change Impacts on the Water Supplies of California Water Service, prepared by Gary Fiske and Associates, Inc. and Balance Hydrologics, Inc., dated January 2016.

6.10.2 Regulatory Conditions and Project Development

Emerging regulatory conditions (e.g., issues surrounding the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary [Bay-Delta Plan]) may affect planned future projects and the characterization of future water supply availability and analysis. The District does not have any current plans to develop additional supply sources. If the District does move forward with any plans to develop supply projects, emerging regulatory conditions will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.

6.10.3 Other Locally Applicable Criteria

Other locally applicable criteria may affect characterization and availability of an identified water supply (e.g., changes in regional water transfer rules may alter the availability of a water supply that had historically been readily available). The District does not have any current plans to develop additional supply sources. If the District does move forward with any plans to develop supply projects, locally applicable criteria will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.

Under SGMA, GSAs have the authority to implement projects and management actions that help basins reach their sustainability goal, including such actions as setting allocations for groundwater pumping, prohibiting development of new groundwater wells, or implementing fees for pumping volumes. As described in Section 6.2, the GSAs within the Kaweah and Tule Subbasins are in the process of developing accounting and allocation programs, which could impact future Visalia District supplies. As such actions are implemented, Cal Water will consider them as a part of its future supply planning efforts.

6.11 Energy Intensity

☑ ***CWC § 10631.2***

(a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:
(1) An estimate of the amount of energy used to extract or divert water supplies.
(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
(3) An estimate of the amount of energy used to treat water supplies.
(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.
(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
(6) An estimate of the amount of energy used to place water into or withdraw from storage.
(7) Any other energy-related information the urban water supplier deems appropriate.
(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.
(c) The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.

The "Total Utility Approach" as defined by DWR in the UWMP Guidebook 2020 is used to report water-related energy-consumption data for the Visalia District. Calendar year 2019 is selected as the one-year reporting period, and utility bills for the associated time period are used as the source for energy consumption data. Utility bills reported the following energy consumption data for the Visalia District during calendar year 2019:

$$Total\ Energy\ Consumed\ by\ the\ Visalia\ District = 13{,}704{,}612\ kilowatt\ hour\ (kWh)$$

Table 6-10 shows the energy consumed for each acre-foot (AF) of water entering the distribution system in the Visalia District, including energy associated with the pumping, treatment, conveyance, and distribution of drinking water, but not including energy associated with the treatment of wastewater. Based on this, the energy intensity is estimated to be approximately 474 kilowatt hours per acre-foot (kWh/AF).

Table 6-10. Recommended Energy Intensity – Total Utility Approach (DWR Table O-1B)

Urban Water Supplier: *Visalia District*

Water Delivery Product

Retail Potable Deliveries

Enter Start Date for Reporting Period	1/1/2019	Urban Water Supplier Operational Control		
End Date	12/31/2019			
Is upstream embedded in the values reported?		Sum of All Water Management Processes	Non-Consequential Hydropower	
Water Volume Units Used	AF	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (volume unit)		*28,919*	*0*	*28,919*
Energy Consumed (kWh)		*13,704,612*	*0*	*13,704,612*
Energy Intensity (kWh/volume)		*474*	*0.0*	*474*

Quantity of Self-Generated Renewable Energy

N/A kWh

Data Quality

Metered Data

Data Quality Narrative:

Utility bills for the associated time period are used as the source for energy consumption data.

Narrative:

Total energy consumption represents the energy consumed during pumping, treatment, conveyance, and distribution.

Chapter 7
Water Supply Reliability Assessment

☑ ***CWC § 10620 (f)***

An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

☑ ***CWC § 10630.5***

Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

This chapter describes the reliability of the Visalia District's (also referred to herein as the "District") water supplies. Assessment of water supply reliability is complex and dependent upon a number of factors, such as the number of water sources, regulatory and legal constraints, hydrological and environmental conditions, climate change, and expected growth, among others. Based on available historical information and projections of future water uses, regulatory and legal constraints, and hydrological and environmental conditions, including climate change, California Water Service Company (Cal Water) has made its best determination of future water supply reliability of for the Visalia District. This chapter includes the following sections:

7.1 Constraints on Water Sources

7.2 Reliability by Type of Year

7.3 Supply and Demand Assessment

7.4 Water Supply Management Tools and Options

7.4 Water Supply Management Tools and Options

7.5 Drought Risk Assessment

7.1 Constraints on Water Sources

Groundwater is the sole supply for the Visalia District. Cal Water has identified several potential constraints on future groundwater supply availability, water quality, and climate change. These constraints, along with associated management strategies are summarized in the following sections.

7.1.1 Supply Availability

As discussed in Chapter 6, Cal Water expects that, under all hydrologic conditions, its groundwater supply for the Visalia District will fully meet future demands. This assessment is based on the available information regarding groundwater supply availability to the Visalia District and the additional information presented below.

Historically, the groundwater supplies available to the Visalia District from the underlying Kaweah and Tule Subbasins have always been sufficient to meet District demands. Due to successful conservation efforts and response to the historic drought spanning water years 2012-2015, water demand (and thus District groundwater pumping volumes) were significantly lower from 2014 through 2019 (i.e., averaging 27,736 acre-feet per year [AFY]) than they had been in the previous ten years (i.e., averaging 32,502 AFY).

It is also important to note that the majority of groundwater pumping in the Kaweah Subbasin is for agricultural use. From a regional and basin-wide standpoint, Visalia District pumping is only a small fraction of total groundwater pumping. Based on the Kaweah Subbasin water budget information presented in the Mid-Kaweah Groundwater Sustainability Plan (GSP), average annual groundwater pumping from 1981 through 2017 totaled approximately 754,415 AFY, including approximately 685,375 AFY for irrigated agriculture and 69,040 AFY for Municipal & Industrial (M&I) use.[46] These data show that M&I pumping accounted for approximately 9 percent of total pumping in the Kaweah Subbasin, and Visalia District pumping in the Visalia and Tulco Public Water Systems (PWSs) accounts for only a portion of the total M&I pumping.

Similarly, the majority of groundwater pumping in the Tule Subbasin is for agricultural use. Based on the Tule Subbasin water budget information presented in the Eastern Tule GSP, average annual groundwater pumping from water year 1986/87 through water year 2016/17 totaled approximately 712,200 AFY, including approximately 664,000 AFY for irrigated agriculture, 28,200 AFY for exports, 600 AFY for groundwater banking extraction, and 19,400 AFY for M&I use.[47] These data show that M&I pumping accounted for approximately 3 percent of total pumping in the Tule Subbasin, and Visalia District pumping in the Mullen PWS accounts for only a very small portion of the total M&I pumping. It is therefore likely that management of agricultural groundwater use, rather than M&I use, will be a much larger determining factor in maintaining groundwater sustainability in both the Kaweah and Tule Subbasins in the future.

Cal Water holds certain water rights to groundwater it has pumped and used as an overlying owner and appropriator. Cal Water's water rights have been dedicated to a public use, and Cal Water is required by the California Public Utilities Commission to provide water to all customers

[46] Mid-Kaweah GSA, 2019. Mid-Kaweah GSA GSP – Appendix 1F, dated December 2019.
[47] ETGSA, 2020. ETGSA GSP – Appendix 2G: Tule Subbasin Coordination Agreement, dated January 2020.

within its designated service area under reasonable rules and regulations. Further, under California law municipal water rights and uses have a higher priority and are entitled to more protection than other uses of water, including in connection with the Sustainable Groundwater Management Act (SGMA). Use of water for domestic purposes is recognized as the "highest use" of water in the State of California pursuant to California Water Code (CWC) §106, and the rights of urban water purveyors should be protected to the fullest extent necessary for existing and future uses, pursuant to CWC §106.5.

SGMA was intended to preserve the security of water rights in the state to the greatest extent possible, and was not intended to determine, modify or alter any surface water or groundwater rights or priorities (CWC §10720.1(b), 10720.5(a) and (b)). SGMA should therefore not reduce, adversely impact or limit Cal Water's present or future exercise of its domestic water rights or its obligation to serve its municipal customers, and Cal Water's rights should be subject to less restrictions and limitations than any other types of water rights or uses.

Further, although a significant amount of growth is projected in the Visalia District over the planning horizon (i.e., the District is projecting that service area population will increase by more than 50 percent over the next 25 years), as discussed in Section 3.5, it is anticipated that some land currently used for agricultural production will be converted to residential and non-residential urban uses to accommodate future growth. Irrigated agriculture typically uses more water on a per-acre basis than urban uses, thus, some future growth within the District will likely result in a net decrease in water use within the subbasins.

Additionally, Cal Water is actively pursuing a variety of supply reliability planning efforts to address potential future shortfalls in the Visalia District. Cal Water has proposed a Water Supply Reliability Study (Reliability Study) for Visalia to be completed in 2021. The Reliability Study will build on this UWMP, but will incorporate integrated resource planning methods, which are a more comprehensive form of resource planning process that will create, or utilize existing, statistical models to support scenario planning and the development of a portfolio of options for water reliability. Its ultimate objective is to establish long-term, least-cost goals that sustainably support each community's needs.

7.1.2 Water Quality

☑ ***CWC § 10634***

The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.

Impaired water quality also has the potential to affect water supply reliability. Cal Water has and will continue to meet all state and federal water quality regulations. All drinking water standards are set by the U.S. Environmental Protection Agency (USEPA) under the authorization of the Federal Safe Drinking Water Act of 1974. In California, the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW) can either adopt the USEPA standards or set more stringent standards, which are then codified in Title 22 of the California Code of Regulations. There are two general types of drinking water standards:

- **Primary Maximum Contaminant Levels (MCLs)** are health protective standards and are established using a very conservative risk-based approach for each constituent that takes into potential health effects, detectability and treatability, and costs of treatment. Public water systems may not serve water that exceeds Primary MCLs for any constituent.

- **Secondary MCLs** are based on the aesthetic qualities of the water such as taste, odor, color, and certain mineral content, and are considered limits for constituents that may affect consumer acceptance of the water.

Cal Water routinely monitors its wells and the water that is treated and served to customers to ensure that water delivered to customers meets these drinking water standards. The results of this testing are reported to the SWRCB DDW following each test and are summarized annually in Water Quality Reports (also known as "Consumer Confidence Reports"), which are provided to customers by mail and made available on Cal Water's website: https://www.calwater.com/waterquality/water-quality-reports/. Additionally, a detailed review of the water quality conditions of the underlying Kaweah and Tule subbasins are provided in the Mid-Kaweah GSA GSP, Greater Kaweah GSA GSP, and the Eastern Tule GSA GSP, available on the DWR SGMA Portal website: https://sgma.water.ca.gov/portal/gsp/all.

Although there is the potential for some regulated constituents to be present in source water, as documented in the Water Quality Reports, the District's monitoring, management, and treatment of its water results in high quality drinking water meeting all drinking water standards being served to customers. Cal Water tracks changes in constituent concentrations to proactively address water quality issues before they impact supply reliability.[48] In the event that water quality constituents are detected in source water at concentrations requiring treatment, the District is able to take impacted wells offline to implement appropriate treatment. Further, as part of the siting process for all new wells, Cal Water evaluates the presence of groundwater contamination and avoids placing wells in areas of known contamination.

[48] Cal Water, 2018. Direct Testimony of Director of Water Quality, 2018 CPUC Rate Case Filing.

Given Cal Water's proactive monitoring and management of water quality in its source water supplies, water quality is not expected to impact the reliability of the District's available supplies within the planning horizon (i.e., through 2045).

7.1.3 Climate Change

☑ ***CWC § 10631 (b) (1)***

…For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

Section 6.10.1 provides a summary of the assessments of the applicable climate change on supplies that Cal Water has previously performed and those planned for the near term, as well as those related to SGMA efforts for the Kaweah and Tule Subbasins. The GSP water budget modeling efforts in both the Kaweah and Tule Subbasins incorporated climate change factors for hydrology and surface water supplies using the California Department of Water Resources (DWR) Central Tendency climate change scenarios to obtain estimated climate change impacts. Section 4.3 of this Urban Water Management Plan (UWMP or Plan) presents information on how the impacts of climate change are factored into projected demands in the District. Cal Water is actively working to further quantify and consider future climate change impacts as part of its ongoing supply and operations planning.

7.2 Reliability by Type of Year

☑ ***CWC § 10631 (b)***

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

☑ ***CWC § 10631 (b)(1)***

A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change.

☑ ***CWC § 10635 (a)***

Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.

Per the UWMP Guidebook 2020, the water service reliability assessment includes three unique year types:

- A normal hydrologic year represents the water supplies available under normal conditions, this could be an averaged range of years or a single representative year,
- A single dry year represents the lowest available water supply, and
- A five-consecutive year drought represents the driest five-year period in the historical record.

Identification of these dry year periods consistent with the UWMP Guidebook 2020 methodology is provided below. Figure 7-1 compares annual rainfall to the historic average (10.42 inches). The designation of Base Years for drought planning shown in Table 7-1 below comes from the data underlying this chart. The Cal Water production data record for the Visalia District begins in the year 1980; therefore, the following year type analysis uses the historical period from 1980 to 2019.

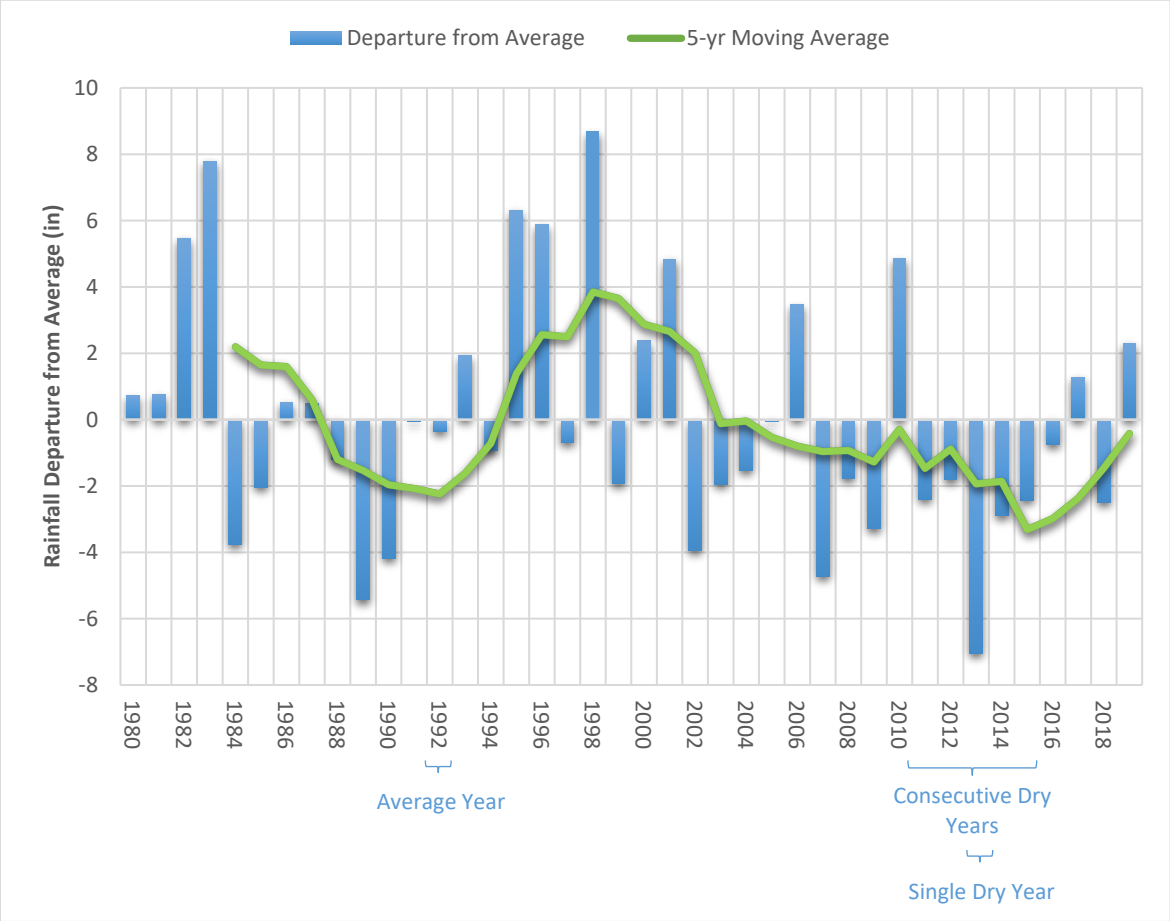
A normal hydrologic year occurred in 1991 when precipitation was approximately 0.4 percent below the historic average for the period from 1980 to 2019. The driest year occurred in 2013 when the rainfall was approximately 68 percent below average (3.38 inches). This is taken as the single dry year shown in Table 7-1. The multiple dry water years used to represent a five-consecutive year drought are 2011 through 2015. This period represents the driest five-year period on record for the historical period from 1980 to 2019, with an average precipitation of 7.11 inches per year.

As discussed in Section 7.1.1, the District's water supplies are reliable regardless of water year type. Therefore, total supplies are expected to be sufficient to meet projected water demands of the District under all hydrologic conditions, including in normal, single dry, and multiple dry years. As such, the projected "volume available" estimates presented in Table 7-1 are equal to the maximum demands across projected years and year types shown in Table 7-2, Table 7-3, and Table 7-4. For example, the assumed volume available in a representative single dry year in Table 7-1 is equal to the projected single dry year demand for the year 2045 shown in Table 7-3.

It should be noted that supply volumes in Table 7-1, Table 7-2, Table 7-3, and Table 7-4 do not represent the total amount of water supply that may be available to the District in a given year, but rather reflect the fact that the water supply has always been sufficient to meet demands, and is projected to continue to be sufficient to meet demands in the future. It should also be noted that the Kaweah and Tule Subbasins are not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying

owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

Figure 7-1. Deviation of Annual Rainfall from Long-Term Average



Source: PRISM Climate Group, Oregon State University, http://prism.oregonstate.edu

Table 7-1. Basis of Water Year Data (Reliability Assessment) (DWR Table 7-1)

Year Type	Base Year	Available Supplies if Year Type Repeats	
		---	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		X	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	% of Average Supply
Average Year	1991	44,529	
Single-Dry Year	2013	45,400	
Consecutive Dry Years 1st Year	2011	45,939	
Consecutive Dry Years 2nd Year	2012	45,939	
Consecutive Dry Years 3rd Year	2013	45,939	
Consecutive Dry Years 4th Year	2014	45,939	
Consecutive Dry Years 5th Year	2015	45,939	

NOTES:
(a) Volumes are in units of AF.
(b) As discussed in Section 7.1, total available supplies are considered to be equal to the projected demand under all year types. Therefore, available volumes presented here are the maximum demands across projected years in Table 7-2, 7-3, and 7-4.

7.3 Supply and Demand Assessment

Water supply and demand patterns change during normal, single dry, and multiple dry years. Cal Water has relied on the demand modeling described in Chapter 4 to forecast demands for normal, single dry and multiple dry years. As described above, Cal Water's groundwater supply for the Visalia District is expected to be able to serve those demands in all year types through 2045.[49]

Table 7-2 shows the projected supply and demand totals for a normal year. The supply and demand totals are consistent with those in Table 6-9 and Table 4-3, respectively[50]. Table 7-3 shows the projected supply and demand totals for the single dry year, and Table 7-4 shows the projected supply and demand totals for multiple dry year periods extending five years. It should

[49] The balance between supply and demand totals excludes usage reductions that are not directly a function of Cal Water supplies, but are externally-imposed by other entities, such as the 2015 State-mandated cutbacks.
[50] Pumping by the Mullen PWS in the Tule Subbasin has historically comprised approximately 0.1% of the total District pumping. Given this, projected District demands and supplies included in this Plan are not apportioned by groundwater subbasin, but presented on a District-wide basis.

be noted that the Kaweah and Tule Subbasins are not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

Table 7-2. Normal Year Supply and Demand Comparison (DWR Table 7-2)

	2025	2030	2035	2040	2045
Supply totals *From DWR Table 6-9*	32,520	35,276	38,310	41,258	44,529
Demand totals *From DWR Table 4-3*	32,520	35,276	38,310	41,258	44,529
Difference	0	0	0	0	0

NOTES:
(a) Volumes are in units of AF.
(b) Neither the Kaweah or Tule Subbasins are adjudicated, and this projected supply volumes do not comprise a determination of water rights or maximum allowable pumping.

Table 7-3. Single Dry Year Supply and Demand Comparison (DWR Table 7-3)

	2025	2030	2035	2040	2045
Supply totals	33,152	35,962	39,057	42,063	45,400
Demand totals	33,152	35,962	39,057	42,063	45,400
Difference	0	0	0	0	0

NOTES:
(a) Volumes are in units of AF.
(b) Neither the Kaweah or Tule Subbasins are adjudicated, and this projected supply volumes do not comprise a determination of water rights or maximum allowable pumping.

Table 7-4. Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4)

		2025	2030	2035	2040	2045
First year	Supply totals	33,543	36,387	39,520	42,562	45,939
	Demand totals	33,543	36,387	39,520	42,562	45,939
	Difference	0	0	0	0	0
Second year	Supply totals	33,543	36,387	39,520	42,562	45,939
	Demand totals	33,543	36,387	39,520	42,562	45,939
	Difference	0	0	0	0	0
Third year	Supply totals	33,543	36,387	39,520	42,562	45,939
	Demand totals	33,543	36,387	39,520	42,562	45,939
	Difference	0	0	0	0	0
Fourth year	Supply totals	33,543	36,387	39,520	42,562	45,939
	Demand totals	33,543	36,387	39,520	42,562	45,939
	Difference	0	0	0	0	0
Fifth year	Supply totals	33,543	36,387	39,520	42,562	45,939
	Demand totals	33,543	36,387	39,520	42,562	45,939
	Difference	0	0	0	0	0

NOTES:
(a) Volumes are in units of AF.
(b) Neither the Kaweah or Tule Subbasins are adjudicated, and this projected supply volumes do not comprise a determination of water rights or maximum allowable pumping.

7.4 Water Supply Management Tools and Options

☑ ***CWC § 10620 (f)***

An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

Cal Water coordinates on an ongoing basis with all relevant agencies in the region to optimize the use of regional water supplies. This includes the City of Visalia, Tulare County, the GSAs within which the District lies, and other public and private entities with which Cal Water can collaborate to protect and enhance local groundwater and surface water resources.

Cal Water is currently in the process of developing multiple regional water supply reliability studies using integrated resource planning practices to create a long-term supply reliability strategy through 2050 for Cal Water districts throughout California. The studies will create long-term strategies to address a wide range of water supply challenges including climate change, new regulatory requirements (e.g., SGMA), and potential growth in demands due to new development. These water supply reliability studies will be completed on a rolling basis over the

next several years, with all studies anticipated to be complete by 2024. The Visalia District will be included in the Central Valley Water Reliability Study.

Cal Water also has its own aggressive and comprehensive water conservation program that has and will continue to reduce per-capita usage and therefore demands on critical water sources. Cal Water is committed to helping its customers use water efficiently and has developed a range of water conservation programs to support this goal. To ensure that it is providing the right mix of programs in the most cost-effective manner possible, Cal Water routinely conducts comprehensive conservation program analysis and planning. This is done on a five-year cycle in tandem with the UWMP. Cal Water's Conservation Master Plan provides the basis for the information on the implementation of and expected water savings from Demand Management Measures (DMMs) presented in Chapter 9.

Cal Water also monitors and supports the goals of the Kaweah River Basin Integrated Regional Water Management Plan (IRWMP) and the Tule River Basin IRWMP.

7.5 Drought Risk Assessment

☑ ***CWC § 10635(b)***

Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following:

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.

(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

7.5.1 Data, Methods, and Basis for Water Shortage Condition

This drought risk assessment considers the effects on available water supply sources of a five-year drought commencing the year after the assessment is completed, i.e., from 2021 through

2025. In the Visalia District, the sole supply source is groundwater. As such, the same data, methodology, and basis for the conclusions of the above water supply sufficiency analysis for multiple dry year periods through 2045 holds true for purposes of this drought risk assessment (i.e., supply availability through 2025). This evaluation considers historical drought hydrology and plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

7.5.2 Drought Risk Assessment Water Source Reliability

As described in Chapter 6, groundwater is the sole source of water supply for the Visalia District. Based on discussion in Section 7.1.1, the Visalia District groundwater supply is expected to be sufficient to meet demands in all hydrologic conditions, including an extended five-year drought period.

As described in Sections 4.3 and 6.10.1 of this Plan, the impacts on climate change have already been factored into the District's demand projections and the analysis of the near- and longer-term reliability of the groundwater supply source available to the District.

Regulatory conditions that could affect future water supply availability and project development (e.g., related to the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary [Bay-Delta Plan]) are discussed in Section 6.10.3 of the Plan. However, the District does not currently have plans for projects to develop additional supply sources, and so these regulatory conditions will be assessed in future UWMP updates if or when the District moves forward with any plans to develop supply projects.

Implementation of SGMA in the Kaweah and Tule Subbasins is a locally applicable consideration for the Visalia District. As discussed in Section 6.2.3 of this Plan, the long-term impacts of SGMA implementation in the Kaweah and Tule Subbasins are still uncertain. However, it is the intent of the projects and management actions planned by the within both the Kaweah and Tule Subbasins to stabilize water levels and provide for sustainable management of the groundwater resource. It is anticipated that should pumping fees or similar restrictions (i.e., allocations) be required to address future shortfalls, such actions will be focused on management of agricultural water use, as opposed to M&I pumping. As described in Section 6.2, the GSAs within the Kaweah and Tule Subbasins are in the process of developing allocation programs, which could impact future Visalia District supplies. As such actions are implemented, Cal Water will consider them as a part of its future supply planning efforts.

Cal Water holds certain water rights to groundwater it has pumped and used as an overlying owner and appropriator. Cal Water's water rights have been dedicated to a public use, and Cal Water is required by the California Public Utilities Commission to provide water to all customers within its designated service area under reasonable rules and regulations. Further, under

California law municipal water rights and uses have a higher priority and are entitled to more protection than other uses of water, including in connection SGMA. Use of water for domestic purposes is recognized as the "highest use" of water in the State of California pursuant to CWC §106, and the rights of urban water purveyors should be protected to the fullest extent necessary for existing and future uses, pursuant to CWC §106.5.

SGMA was intended to preserve the security of water rights in the state to the greatest extent possible, and was not intended to determine, modify or alter any surface water or groundwater rights or priorities (CWC §10720.1(b), 10720.5(a) and (b)). SGMA should therefore not reduce, adversely impact or limit Cal Water's present or future exercise of its domestic water rights or its obligation to serve its municipal customers, and Cal Water's rights should be subject to less restrictions and limitations than any other types of water rights or uses.

Table 7-5 provides a comparison of the water supply sources available to the Visalia District with the total projected water use for an assumed drought period of 2021 through 2025, including consideration of the above issues and climate change. It should be noted that because the District only pumps the amount of groundwater necessary to meet demands in a given year, the supply values shown in the table do not represent the total supply available to the District in a given year, but rather reflect the fact that the available groundwater supply is sufficient to meet the demands as needed. The values in Table 7-5 are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

Although water shortage conditions are not expected to arise due to drought, Cal Water has developed a WSCP (Appendix G) to address potential water shortage conditions resulting from any cause (e.g., droughts, impacted distribution system infrastructure, regulatory-imposed shortage restrictions, etc.). The WSCP identifies a variety of actions that Cal Water will implement to reduce demands and further ensure supply reliability at various levels of water shortage.

Table 7-5. Five-Year Drought Risk Assessment Tables to Address Water Code 10635(b) (DWR Table 7-5)

2021	Total
Total Water Use	31,274
Total Supplies	31,274
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	

2022	Total
Total Water Use	31,813
Total Supplies	31,813
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	

2023	Total
Total Water Use	32,376
Total Supplies	32,376
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	

Table 7-5. Five-Year Drought Risk Assessment Tables to Address Water Code 10635(b) (DWR Table 7-5)

2024	Total
Total Water Use	32,954
Total Supplies	32,954
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	

2025	Total
Total Water Use	33,543
Total Supplies	33,543
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	
Resulting % Use Reduction from WSCP action	

NOTES:
(a) Volumes are in units of AF.
(b) Because the District has sufficient supplies to meet demands in all year types, it is not anticipated that Water Shortage Contingency Plan (WSCP) actions will be required.

Chapter 8
Water Shortage Contingency Planning

☑ ***CWC § 10640***

(a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

(b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

The Water Shortage Contingency Plan (WSCP) for the Visalia District (also referred to herein as "District") is included in this Urban Water Management Plan (UWMP) as Appendix G. The WSCP serves as a standalone document to be engaged in the case of a water shortage event, such as a drought or supply interruption, and defines specific policies and actions that will be implemented at various shortage level scenarios. The primary objective of the WSCP is to ensure that the District has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions. Consistent with CWC §10632, the WSCP includes six levels to address shortage conditions ranging from up to 10 percent to greater than 50 percent shortage, identifies a suite of demand mitigation measures for the District to implement at each level, and identifies procedures for the District to annually assess whether or not a water shortage is likely to occur in the coming year, among other things.

A summary of the key elements of the WSCP including water shortage levels and demand-reduction actions is shown in Table 8-1, Table 8-2, and Table 8-3. Additional details are provided in Appendix G.

Table 8-1. Water Shortage Contingency Plan Levels (DWR Table 8-1)

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	Demand reduction (See Table 8-2)
2	Up to 20%	Demand reduction (See Table 8-2)
3	Up to 30%	Demand reduction (See Table 8-2)
4	Up to 40%	Demand reduction (See Table 8-2)
5	Up to 50%	Demand reduction (See Table 8-2)
6	>50%	Demand reduction (See Table 8-2)
NOTES:		

Table 8-2. Demand Reduction Actions (DWR Table 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
1	Other	9%	1. Limit landscape irrigation to specific times 2. Customers must repair leaks, breaks, and malfunctions in a timely manner 3. Restrict or prohibit runoff from landscape irrigation 4. Prohibit application of potable water to outdoor landscapes within 48 hours of measurable rainfall 5. Prohibit use of potable water for washing hard surfaces 6. Lodging establishments must offer opt out of linen service	Yes
1	Other	--	1. Expand Public Information/Media Campaign 2. Water Bill Inserts 3. Promote online water waste reporting 4. Expand Rebates or Giveaways of Plumbing Fixtures and Devices 5. Expand Rebates for Landscape Irrigation Efficiency 6. Expand CII Water Use Surveys 7. Expand Res Water Use Surveys	No

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
2	Other	16%	1. Continue with Stage 1 restrictions and prohibitions except where superseded by more stringent actions. 2. Prohibit the use of non-recirculating systems in all new conveyer car wash and commercial laundry systems 3. Prohibit the use of single pass cooling systems in new connections 4. Restaurants may only serve water upon request 5. No watering of landscape of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development 6. Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Yes
2	Other	--	1. Continue with Stage 1 actions except where superseded by more stringent actions. 2. Water Efficiency Workshops, Public	No

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
			Events 3. Offer Water Use Surveys 4. Provide Rebates or Giveaways of Plumbing Fixtures and Devices 5. Provide Rebates for Landscape Irrigation Efficiency	
3	Other	27%	1. Continue with Stage 1 restrictions and prohibitions except where superseded by more stringent actions. 2. Landscape - Limit landscape irrigation to 1-3 days/week 3. Landscape - Prohibit irrigation of ornamental turf on public street medians with potable water 4. Prohibit Filling Ornamental Lakes or Ponds	Yes
3	Other	--	1. Continue with Stage 1 actions except where superseded by more stringent actions. 2. Home or Mobile Water Use Reports 3. Decrease Frequency and Length of Line Flushing 4. Reduce System Water Loss 5. Increase Water Waste Patrols/Enforcement	No

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
			6. Implement Drought Rate Structure and Customer Water Budgets (Res) 7. Implement Drought Rate Structure and Customer Water Budgets (CII)	
4	Other	35%	1. Continue with Stage 1 restrictions and prohibitions except where superseded by more stringent actions. 2. Prohibit use of potable water for construction and dust control 3. Prohibit use of potable water for street washing 4. Prohibit vehicle washing except with recycled water	Yes
4	Other	--	1. Continue with Stage 1 actions except where superseded by more stringent actions. 2. Promote / Expand Use of Recycled Water	No
5	Other	49%	1. Continue with Stage 1 restrictions and prohibitions except where superseded by more stringent actions. 2. Require net zero demand Increase on new water service connections 3. Prohibit filling of pools	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
			4. Prohibit single-pass cooling systems	
5	Other	--	1. Continue with Stage 1 actions except where superseded by more stringent actions. 2. Require Pool Covers	No
6	Other	55%	1. Continue with Stage 1 restrictions and prohibitions except where superseded by more stringent actions. 2. Moratorium on new water service connections 3. Prohibit all landscape irrigation	Yes
NOTES:				

Table 8-3. Supply Augmentation and Other Actions (DWR Table 8-3)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*
NOTES:			

Chapter 9
Demand Management Measures

☑ ***CWC § 10631 (e)***

Provide a description of the supplier's water demand management measures. This description shall include all of the following:

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

This chapter provides a summary of past and planned demand management measure (DMM) implementation in the Visalia District (also referred to herein as the "District"), as well as an overview of the expected water savings.

This chapter contains the following sections:

9.1 Demand Management Measures for Wholesale Agencies

9.2 Demand Management Measures for Retail Suppliers

9.3 Implementation over the Past Five Years

9.4 Implementation to Achieve Water Use Targets

9.5 Water Use Objectives

9.1 Demand Management Measures for Wholesale Agencies

Because the District is a retail water supplier, this section does not apply.

9.2 Demand Management Measures for Retail Suppliers

California Water Service Company (Cal Water) centrally administers its conservation programs for all the districts it operates. For purposes of this section, these programs have been grouped in accordance with the DMM categories in CWC §10631(e). These categories are:

(i) Water waste prevention ordinances
(ii) Metering
(iii) Conservation pricing
(iv) Public education and outreach
(v) Programs to assess and manage distribution system real loss
(vi) Water conservation program coordination and staffing support, and
(vii) Other demand management measures

Following are descriptions of the conservation programs Cal Water operates within each of these DMM categories. The District's Conservation Master Plan, provided in Appendix H, contains additional information on Cal Water's conservation programs.

9.2.1 Water Waste Prevention Ordinances

Cal Water's enforcement of water waste prevention and water use restrictions is authorized and overseen by the California Public Utilities Commission via Rule 14.1 or Schedule 14.1. Local government in districts operated by Cal Water may also adopt ordinances regulating water use. Cal Water coordinates its efforts to prevent water waste with the appropriate local governmental entities. For the Visalia District, this includes the City of Visalia and Tulare County.

Rule 14.1 defines the District's Water Shortage Contingency Plan (WSCP, Appendix H), including its prohibitions on water waste and restrictions on water use. Prohibitions include:

- Use of potable water through a broken or defective plumbing fixture or irrigation system when Cal Water has notified the customer in writing to repair the broken or defective plumbing fixture or irrigation system, and the customer has failed to effect such repairs within seven (7) business days of receipt of such notice.
- The application of potable water to landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures.

- The use of a hose that dispenses potable water to wash vehicles, including cars, trucks, buses, boats, aircraft, and trailers, whether motorized or not, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.

Restrictions on water use during shortages include, but are not necessarily limited to:

- Outdoor irrigation restrictions in terms of time of day and weekly frequency.
- Obligations to fix leaks, breaks, or malfunctions within five (5) business days of written notification by Cal Water.
- Application of potable water to driveways and sidewalks.
- The use of potable water in a water feature, except where the water is part of a recirculating system.
- The application of potable water to outdoor landscapes during and within 48 hours after measurable rainfall.
- The serving of drinking water other than upon request in eating or drinking establishments.
- Irrigation of ornamental landscape on public street medians.
- Irrigation outside of newly constructed homes and buildings with potable water in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.
- Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.
- Limits on filling ornamental lakes or ponds.
- Use of potable water for street cleaning with trucks, except for initial wash-down for construction purposes.
- Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.

9.2.2 Metering

☑ ***CWC § 526 (a)***

Notwithstanding any other provision of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract … shall do both of the following:

(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings constructed prior to January 1, 1992, located within its service area.

(2) On and after March 1, 2013, or according to the terms of the Central Valley Project water contract in operation, charge customers for water based on the actual volume of deliveries, as measured by a water meter.

☑ ***CWC § 527 (a)***

(a) An urban water supplier that is not subject to Section 526 shall do both of the following:

(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

The District meters all service connections and bills customers for water use monthly. Cal Water may install advanced metering infrastructure (AMI) in the future to improve metering accuracy and supply prompt feedback to customers about water use and leaks. Cal Water is currently piloting (AMI) in several districts. AMI may be used by Cal Water in the future to detect and alert households of leaks and other possible problems as well as to provide customers with tailored water use information to help them use water more efficiently.

9.2.3 Conservation Pricing

The CPUC reviews and authorizes District water rates in a General Rate Case every three years. Currently, the District uses a three-tier increasing block rate design for residential water use and a single-tier uniform rate design for non-residential use. The District provides rate assistance to lower income households through its Customer Assistance Program (CAP).

9.2.4 Public Education and Outreach

The District's public outreach program is divided into four components, as follows:

Public Information Program – Cal Water operates an extensive public information program to provide information to customers on ways to use water efficiently and to market its conservation programs through multiple media outlets, including the Cal Water website, direct mail and bills, digital media, social media, and email.

School Education Program - Cal Water's school education program includes the Cal Water H2O Challenge, a project-based learning competition for grades 4-6, individual student competitions for grades K-12 and general information and learning materials for students and teachers. Cal Water deploys its school education program in all its districts. Cal Water H2O Challenge is a project-based competition for classrooms, grades 4-6. The program is offered in partnership with DoGoodery, the California Association of Science Educators (CASE), and the WestEd K-12 Alliance. The program aligns with the Common Core State Standards and the Next Generation Science Standards. The Cal Water H2O Challenge offers a unique opportunity for upper elementary teachers to facilitate their students' learning of standards-based content, while developing the core understanding of environmental principles necessary to becoming science-literate citizens.

Smart Landscape Tune-Up Program – This program provides customers with an irrigation system evaluation and installation of approved efficient irrigation system equipment, such as a smart irrigation controller and high-efficiency sprinkler nozzles. The program also includes irrigation system adjustments and detection and repair of irrigation system leaks. This program is available to all Cal Water customers at no charge.

Residential Customer Portal – Through its residential customer portal, Cal Water provides tailored assistance to each residential customer via customized water-efficiency targets, water savings calculators, and customer-specific recommendations for programs and water-saving tips.

Non-Residential Customer Assistance – Cal Water provides tailored assistance to commercial customers through customized incentives, commercial water surveys, and large landscape water use surveys. The non-residential assistance program helps commercial customers efficiently use water for sanitation/cleaning, heating/cooling, process, and landscape purposes.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

As discussed above, reducing distribution system losses is one of the main focuses of the new Making Water Conservation a California Way of Life regulations. In preparation for these new requirements, Cal Water took part in the California Water Loss Technical Assistance Program (TAP) in both 2016 and 2017. Cal Water annually conducts distribution system audits using the American Water Works Association (AWWA) Free Water Audit Software. It has also developed a Water Loss Control Plan and Water Loss Control Policy to guide future water loss management with respect to:

- Meeting CPUC and state water loss standards and regulations
- Improving audit data and validity scores
- Implementing cost-effective water loss control actions

To coordinate and oversee water loss management actions across its multiple districts, Cal Water has added a Water Loss Program Analyst position to its conservation staff.

9.2.6 Water Conservation Program Coordination and Staffing Support

The CPUC reviews and authorizes Cal Water conservation program and staffing level in a general rate case every three years. Currently, Cal Water has nine full-time conservation positions, as follows:

- Director of Water Resource Sustainability,
- Conservation Program Manager,
- Research, Analytics and Reporting Manager,
- Water Resource Sustainability Analyst,
- Water Loss Program Analyst,
- Three Conservation Program Coordinators, and
- Conservation Assistant.

These staff manage all aspects of Cal Water's conservation programs that are run in 24 districts serving a combined population of 1.8 million people.

9.2.7 Other Demand Management Measures

In addition to the DMM programs described above, Cal Water operates rebate, give-away, and direct installation programs aimed at plumbing fixture replacement and irrigation equipment and landscape efficiency improvements. Following are brief descriptions of each of these DMMs.

High-Efficiency Toilet Replacement – This program replaces old toilets with MaP certified high-efficiency toilets via financial rebates, direct installation, or direct distribution.[51] Current rebate amounts are up to $50/toilet for residential toilet replacement and up to $100/toilet for commercial toilet replacement.

High-Efficiency Urinal Replacement – This program replaces old urinals with high-efficiency urinals meeting the state's 0.125 gallon per flush water use standard via financial rebates and direct installation. While available to all non-residential customers, the program targets sites with higher-than-average bathroom utilization, such as restaurants and office buildings. The current rebate amount is up to $150/urinal.

[51] For information on MaP certified toilets, see: https://www.map-testing.com/.

Clothes Washer Replacement – This program provides a financial rebate to replace an old inefficient clothes washer with a new high-efficiency washer. The program is available to all residential and multi-family customers. The current rebate amount is up to $150/washer.

Residential Conservation Kit Distribution – This program offers residential customers conservation kits featuring a range of water-saving plumbing retrofit devices. The kits are available at no charge and include two high-efficiency showerheads (1.5 gpm), two bathroom faucet aerators (1.0 gpm), one kitchen faucet aerator (1.5 gpd), toilet leak tablets, and an outside multi-function, full-stop hose nozzle.

Smart Irrigation Controller Installation – This program provides a financial rebate for the installation of a smart irrigation controller that automatically adjusts watering schedule in response to changing weather conditions. The current rebate amount is $125/controller for residential customers and $25/station for commercial customers.

High-Efficiency Sprinkler Nozzle Rebate – This program provides a financial rebate for the installation of high-efficiency sprinkler nozzles. This program is available to all Cal Water customers. The current rebate amount is $5/nozzle.

Large Rotary Nozzle Rebate – This program provides a financial rebate for the installation of high-efficiency large rotary nozzles. This program is available to all Cal Water customers. The current rebate amount is up to $30/nozzle toward the nozzle purchase cost and up to $8/spray body toward installation cost, if installed by a C-27 licensed landscape contractor.

Spray Body with Integrated Pressure Regulation and Check Valve Rebate – This program provides a financial rebate for the installation of high-efficiency spray bodies with integrated pressure regulation. This program is available to all Cal Water customers. The current rebate amount is up to $10/body toward the spray body purchase cost and up to $8/spray body toward installation cost, if installed by a C-27 licensed landscape contractor.

Turf Replacement Rebate – This program provides a financial rebate for replacement of turf with approved drought-tolerant landscaping. Cal Water operated this program in 2015/16 as a drought response measure. The program will be re-started as part of Cal Water's irrigation equipment/landscape upgrade program offerings.

Table 9-1 summarizes the DMMs available to District customers at the time this Plan was prepared.

Table 9-1. Cal Water DMMs Available to District Customers

Programs Offered	Customer Eligibility		
	Single-Family	Multi-Family	Commercial
Plumbing Fixture Replacement			
High-Efficiency Toilet Replacement	✓	✓	✓
High-Efficiency Urinal Replacement			✓
High-Efficiency Clothes Washer Rebate	✓	✓	
Conservation Kits	✓	✓	
Irrigation Equipment/Landscape Upgrades			
Smart Irrigation Controller Rebate	✓	✓	✓
High-Efficiency Sprinkler Nozzle Rebate	✓	✓	✓
Large Rotary Nozzle Rebate		✓	✓
Spray Body Rebate		✓	✓
Turf Replacement Rebate	✓	✓	✓
Customer Assistance			
Smart Landscape Tune-Up Program	✓	✓	✓
Residential Customer Portal	✓		
Non-Residential Customer Assistance		✓	✓

9.3 Implementation over the Past Five Years

Table 9-2 summarizes program implementation for the previous five years. Estimated water savings do not include savings from water waste prevention ordinances, conservation pricing, public information, or distribution system water loss management. Cal Water uses the Alliance for Water Efficiency's Water Conservation Tracking Tool to estimate water savings.

Table 9-2. Implementation of Customer DMMs: 2016-2020

Indoor Programs	2016 – 2020 Total	Average Annual
Toilets & Urinals (number distributed)	1,521	304
Clothes Washers (number distributed)	333	67
Conservation Kits (number distributed)	412	82
Outdoor Programs		
Smart Controllers (number distributed)	553	111
Nozzles & Spray Bodies (number distributed)	3,014	603
Turf Buy-Back (sq ft removed)	167,436	33,487
Residential Assistance Programs		
Surveys/Audits (homes receiving)	25	5
Non-Residential Assistance Programs		
Surveys/Audits (sites receiving)	12	2
Large Landscape Reports (sites receiving)	111	22
Estimated Water Savings (AF)	**709**	**142**
Note: Estimated water savings for 2016-2020. DMMs will continue to generate savings after 2020 for their useful life.		

9.4 Implementation to Achieve Water Use Targets

All the DMMs described above contributed to the District's compliance with its SB X7-7 2020 target GPCD.

9.5 Water Use Objectives (Future Requirements)

CWC §10609 requires that urban retail water suppliers develop new water use objectives that are based on specific standards for certain water use sectors. These water use objectives will not be developed until 2023. Suppliers are encouraged in this UWMP cycle to consider how they will align their conservation management actions in order to meet these future obligations.

As noted above, Cal Water's conservation programs are subject to review and approval by the CPUC through a General Rate Case every three years. In making conservation program recommendations to the CPUC, Cal Water carefully considers how they will advance multiple objectives, including compliance with the pending water use objectives. Specific objectives identified in Cal Water's most recent General Rate Case included:

- Maintaining continuity with and furthering implementation of conservation programs authorized by the previous General Rate Case.
- Preserving gains in water conservation achieved during the 2013-2017 drought.
- Ensuring Cal Water districts are well-positioned to comply with state regulations and policies pertaining to water conservation, water loss management, and groundwater management, including Executive Order B-37-16, SB 555, and the Sustainable Groundwater Management Act (SGMA).
- Advancing cost-effective water use efficiency alternatives in districts with high water supply costs.

Cal Water developed a scoring methodology to adjust conservation programs and budgets to further these objectives. The methodology specifically considers five distinct conservation policy drivers:

1. State Conservation Standards and Water Use Objectives
2. SGMA Compliance
3. SB 555 Water Loss Management Requirements
4. Commercial, Institutional, and Industrial (CII) Water Management
5. Avoided Water Cost and Affordability

The methodology assigns greater weight to the State Conservation Standards and Water Use Objectives and SGMA Compliance policy drivers, reflecting their importance in terms of overall water resources management.

Scoring for the SGMA Compliance policy driver is based on groundwater basin priority, district dependence on groundwater supply, and basin adjudication status. The highest scores are assigned to districts in unadjudicated and critically overdrafted or high priority basins where groundwater comprises more than 45 percent of the water supply. The Visalia District ranked in the top third of Cal Water's districts for this policy driver.

Scoring for the State Conservation Standards and Water Use Objectives policy driver is based on four metrics that are used to gauge which districts are most likely to require adjustments to their conservation program mix or level of implementation to comply with the new standards. These metrics are:

1. Residential per capita landscape area
2. Residential per capita turf area
3. Size and number of large residential landscapes
4. Difference between a simulated water use budget and average water use for 2011-15

The Visalia District ranked in the middle third of Cal Water's districts for this policy driver.

Scoring for the SB 555 Water Loss Management Requirements policy driver is based on the district's infrastructure leakage index (ILI) from its most recent validated water loss audit. The ILI is a performance indicator of real (physical) water loss from the water distribution system. A high ILI indicates possible distribution system inefficiencies and may also indicate significant water system leakage. Proposed adjustments to funding for water loss management are based on the ILI scoring criteria. The Visalia District ranked in the middle third of Cal Water's districts for this policy driver.

Scoring for the CII Water Management policy driver is based on the ratio of CII water uses to total water uses in a district. The Visalia District ranked in the middle third of Cal Water's districts for this policy driver.

Scoring for the Avoided Water Cost and Affordability policy driver is based on the District's avoided cost of water supply, as estimated by the California Urban Water Conservation Council (CUWCC)/Water Research Foundation Avoided Cost Model. The Visalia District ranked in the bottom third of Cal Water's districts for this policy driver.

The combination of scores on each policy driver were used by Cal Water to recommend to the CPUC in its most recent General Rate Case adjustments to the conservation budgets of its districts. The purpose of the adjustments is to increase Cal Water's capacity to deploy conservation programs in districts expected to face the most significant regulatory and water management challenges in coming years. Recommended adjustments ranged from a low of

5 percent to a high of 25 percent. The recommended adjustment for the Visalia District was 20 percent.

Chapter 10
Plan Adoption, Submittal, and Implementation

☑ ***CWC § 10621 (b)***

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

This chapter provides information on a public hearing, the adoption process for the Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP), the adopted UWMP and WSCP submittal process, plan implementation, and the process for amending the adopted UWMP or WSCP. This chapter includes the following sections:

10.1 Inclusion of All 2020 Data

10.2 Notice of Public Hearing

10.3 Public Hearing and Adoption

10.4 Plan Submittal

10.5 Public Availability

10.6 Notification of Public Utilities Commission

10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

10.1 Inclusion of All 2020 Data

This UWMP includes the water use and planning data for the entire calendar year of 2020, per the UWMP Guidebook 2020.

10.2 Notice of Public Hearing

☑ ***CWC § 10642***

Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of both the plan and the water shortage contingency plan. Prior to adopting either, the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commencing with Section 7290) of Division 7 of Title 1 of the Government Code. A privately owned water supplier shall provide an equivalent notice within its service area. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

Prior to adopting the Plan, California Water Service Company (Cal Water) held a virtual public hearing to present information on its Visalia District (also referred to herein as "District") 2020 UWMP and WSCP on May 18, 2021, 7:00 PM. [52]

Relevant entities were notified of the UWMP and WSCP review at least 60 days prior to the public hearing, including: (1) cities, counties, and Groundwater Sustainability Agencies (GSAs), and (2) the public. These same entities were noticed again with the specific date, time and location of the hearing at least two weeks prior to the public hearing. The notice to the public, as specified in Government Code 6066, and letters to relevant agencies can be found in Appendix C and Appendix B, respectively.

10.2.1 Notice to Cities and Counties

☑ ***CWC § 10631 (a)*** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

Table 10-1 lists the cities and counties that were notified. Copies of these letters are provided in Appendix B.

[52] Restrictions related to the COVID-19 pandemic prevented the District from holding an in-person public hearing as previously planned.

Table 10-1. Notification to Cities and Counties (DWR Table 10-1)

City Name	60 Day Notice	Notice of Public Hearing
City of Visalia	X	X
County Name	**60 Day Notice**	**Notice of Public Hearing**
Tulare County	X	X
Other Agency Name	**60 Day Notice**	**Notice of Public Hearing**
Greater Kaweah Groundwater Sustainability Agency	X	X
Mid-Kaweah Groundwater Sustainability Agency	X	X
Kaweah Delta Water Conservation District	X	X
NOTES:		

10.2.2 Notice to the Public

Notification to the public and to cities and counties also provided instructions on how to view the 2020 UWMP and WSCP prior to the hearing, the revision schedule, and contact information of the UWMP and WSCP preparer. A copy of this notice is included in Appendix C.

10.3 Public Hearing and Adoption

☑ ***CWC § 10608.26***

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

☑ ***CWC § 10621 (b)***

Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. The urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

The deadline for public comments on the UWMP and WSCP was June 18, 2021. The final Plan was formally adopted by Cal Water's Vice President of Engineering June 20, 2021, and was submitted to California Department of Water Resources (DWR) within 30 days of approval. Appendix H presents a copy of the signed Resolution of Plan Adoption. Appendix B contains the following:

- Letters sent to and received from various agencies regarding this plan, and
- Correspondence between Cal Water and participating agencies.

10.4 Plan Submittal

☑ ***CWC § 10621 (f)***

(1) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

☑ ***CWC § 10635 (c)***

The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.

☑ ***CWC § 10644 (a)***

(1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

This UWMP and WSCP were submitted to DWR within 30 days of adoption and by the July 1, 2021 deadline. The submittal was done electronically through Water Use Efficiency Data Portal, an online submittal tool. The adopted UWMP and WSCP were also sent to the California State Library and to the cities and counties listed in Table 10-1 no later than 30 days after adoption.

10.5 Public Availability

☑ ***CWC § 10645***

(a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

(b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

On or about May 3, 2021, an electronic version of the draft 2020 UWMP and WSCP were made available for review by visiting Cal Water's website: https://www.calwater.com/conservation/uwmp-review/. [53]

[53] Restrictions related to the COVID-19 pandemic prevented the District from making a printed hard-copy available for public review as previously planned.

10.6 Notification of Public Utilities Commission

☑ ***CWC § 10621 (c)***

An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.

Cal Water is an urban water supplier regulated by the California Public Utilities Commission. Cal Water included the District's 2020 UWMP and WSCP as part of its general rate case filings.

10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

☑ ***CWC § 10644 (b)***

If an urban water supplier revises its water shortage contingency plan, the supplier shall submit to the department a copy of its water shortage contingency plan prepared pursuant to subdivision (a) of Section 10632 no later than 30 days after adoption, in accordance with protocols for submission and using electronic reporting tools developed by the department.

If the 2020 UWMP or WSCP is amended, each of the steps for notification, public hearing, adoption and submittal will also be followed for the amended document.

Appendix A: UWMP Act Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Chapter 1
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Section 1.6
x	x	Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplier.	Plan Preparation	Section 2.4 and Table 2-1
x	x	Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan Preparation	Section 2.5 and Table 2-4
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan Preparation	Section 2.5
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Section 2.5.1
	x	Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	N/A
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	Chapter 3
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045.	System Description	Section 3.4 and Table 3-1

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	Section 3.4 and Table 3-2
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Setion 3.4 and Table 3-2
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	Section 3.5
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2 and Tables 4-1 to 4-3
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	Section 4.2.3
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System Water Use	Section 4.2.4 and Tables 4-5 and 4-6
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	Section 4.2.4
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	Section 4.2.3 and Table 4-4
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.2.5 and Table 4-7
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	Section 7.5.1
x		Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	Baselines and Targets	Chapter 5
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	Section 5.5 and Table 5-2
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	N/A

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.4
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5-year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.4
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form.	Baselines and Targets	Section 5.5
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought.	System Supplies	Chapter 7
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, *including changes in supply due to climate change.*	System Supplies	Section 7.1.3
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System Supplies	Section 6.9 and Table 6-9
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water.	System Supplies	Section 6.8
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045.	System Supplies	Section 6.9
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	Section 6.2.1
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2
x	x	Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	Section 6.2
x	x	Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years.	System Supplies	Section 6.2.5 and Table 6-1
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Section 6.9
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis.	System Supplies	Section 6.7
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2 and Tables 6-4 and 6-5
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and Table 6-5
x	x	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.3
x	x	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	System Supplies (Recycled Water)	Section 6.5.3 and Table 6-4
x	x	Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System Supplies (Recycled Water)	Section 6.5.3

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and Table 6-6
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods.	System Supplies (Recycled Water)	Section 6.5.2 and Table 6-3
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and for a period of drought lasting 5 consecutive water years.	System Supplies	Section 6.8 and Table 6-7
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	Section 6.11 and Table 6-10
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability.	Water Supply Reliability Assessment	Section 7.1.2
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.2 and Tables 7-2 to 7-4
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	Section 7.5
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	Section 7.5
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	Section 7.5

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Section 7.5 and Table 7-5
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	Section 7.5
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Appendix G
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision- making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix G

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix G
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix G
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix G
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix G

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought.	Water Shortage Contingency Planning	Appendix G
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix G
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water Shortage Contingency Planning	Appendix G
x	x	Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan.	Water Shortage Contingency Planning	Section 10.4
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	N/A
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Chapter 9
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-1.	Plan Adoption, Submittal, and Implementation	Section 10.2

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan.	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Section 10.2.1
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Section 10.4
x	x	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5
x	x	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	Section 10.6
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	Section 10.7

Appendix B: Correspondence

- UWMP Notice of Preparation
- District Mailing List
- Growth Projection and Land Use Letter
- UWMP and WSCP Public Draft Comments

Note: There were no public comments received on the UWMP or WSCP Public Draft.

Notice of Preparation of Urban Water Management Plan and Water Shortage Contingency Plan - 2020 Update

The Urban Water Management Planning Act (California Water Code §10608–10656) requires that California Water Service (Cal Water) update its Urban Water Management Plan (UWMP) and associated Water Shortage Contingency Plan (WSCP) every 5 years.

Cal Water is currently reviewing its existing UWMP and associated WSCP, which were updated in 2016, and considering revisions for each plan. Coordination with other water suppliers, cities, counties, and community organizations in the region is an important part of the preparation of Cal Water's UWMP and WSCP. We are available to discuss the assumptions used in the development of the plans including available water supply, water demands, land use, as well as other aspects of the plans.

A draft of the 2020 UWMP and WSCP will be made available for public review and a public hearing will be scheduled in Spring 2021. We will notify you when the draft is available for review, how to access it, and details regarding the public hearing.

The updated UWMP and WSCP are due by July 1, 2021. If you would like more information regarding our 2015 UWMP and WSCP and the schedule for updating these documents, or if you would like to participate in the preparation of the 2020 UWMP and WSCP, please contact:

Michael Bolzowski
Senior Engineer
California Water Service
Phone: (408) 367-8338
Email: PlanningInfo@calwater.com

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brett.taylor@visalia.city

Bolzowski, Michael R.

From: Hurley, Michael
Sent: Tuesday, May 4, 2021 11:06 PM
To: Leslie Caviglia
Cc: McCusker, Kevin; Johnson, Stephen
Subject: Cal Water's 2020 Draft UWMP for its Visalia District
Attachments: Visalia (ACM) - Cal Water UWMP.pdf

Dear Ms. Caviglia,

California Water Service (Cal Water) is currently updating its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) to reflect water service conditions in the Visalia District. The Visalia District serves portions of the City of Visalia and segments of unincorporated Tulare County, including the Mullen, Tulco, and Goshen public water systems.

The State requires all urban water suppliers that provide water for municipal purposes either directly or indirectly to more than 3,000 customers or supply more than 3,000 acre-feet of water annually to prepare an UWMP and WSCP at least once every five years. These documents support Cal Water's long-term resource planning to ensure that adequate water supplies are available to meet existing and future water demands under defined conditions.

Cal Water's estimates of future water demands are based on demographic projections and current and projected land use forecasts. For the Visalia District, Cal Water's water demand forecast is tied to Census Block population counts from decadal Census data. The decadal Census estimates are converted to average population per single- and multi-family service, which are applied to service counts for years between the decadal Censuses. Projected population is based on population and employment forecasts for Tulare County generated by the California Department of Transportation's (Caltrans) long-term socio-economic forecast model.

The UWMP also incorporates water supply assessments (WSA) for projects in or near the Visalia District into the demand forecast. As additional large-scale projects and/or specified land use planning processes arise (e.g., general plans, specific plans), additional WSAs will be developed to consider their impacts on available supplies.

We have attached the current public review draft of the UWMP, and incorporated WSCP for your review. Please share this with others in your organization that may be interested in the information.

Cal Water is available to discuss the assumptions used in the development of the UWMP for the Visalia District, including available supply, water demands, land use, as well as any other aspects of the plan.

Should you have any questions or comments, please contact Michael Bolzowski at mbolzowski@calwater.com.

Sincerely,

Michael Hurley
WATER RESOURCES MANAGER

Bolzowski, Michael R.

From: Hurley, Michael
Sent: Tuesday, May 4, 2021 10:53 PM
To: jtbritt@co.tulare.ca.us
Cc: McCusker, Kevin; Johnson, Stephen
Subject: RE: Cal Water's 2020 Draft UWMP for its Visalia District
Attachments: Visalia (CAO) - Cal Water UWMP.pdf

Dear Mr. Britt,

The attachment with the previous email did not include the draft UWMP. The full attachment is included above.

Sorry for any inconvenience.

Sincerely,

Michael Hurley
WATER RESOURCES MANAGER
CALIFORNIA WATER SERVICE
(323) 430-0250

Quality. Service. Value.
calwater.com

From: Hurley, Michael
Sent: Tuesday, May 4, 2021 10:30 PM
To: jtbritt@co.tulare.ca.us
Cc: McCusker, Kevin <kmccusker@calwater.com>; Johnson, Stephen <SteJohnson@calwater.com>
Subject: Cal Water's 2020 Draft UWMP for its Visalia District

Dear Mr. Britt,

California Water Service (Cal Water) is currently updating its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) to reflect water service conditions in the Visalia District. The Visalia District serves portions of the City of Visalia and segments of unincorporated Tulare County, including the Mullen, Tulco, and Goshen public water systems.

The State requires all urban water suppliers that provide water for municipal purposes either directly or indirectly to more than 3,000 customers or supply more than 3,000 acre-feet of water annually to prepare an UWMP and WSCP at least once every five years. These documents support Cal Water's long-term resource planning to ensure that adequate water supplies are available to meet existing and future water demands under defined conditions.

Cal Water's estimates of future water demands are based on demographic projections and current and projected land use forecasts. For the Visalia District, Cal Water's water demand forecast is tied to

Census Block population counts from decadal Census data. The decadal Census estimates are converted to average population per single- and multi-family service, which are applied to service counts for years between the decadal Censuses. Projected population is based on population and employment forecasts for Tulare County generated by the California Department of Transportation's (Caltrans) long-term socio-economic forecast model.

The UWMP also incorporates water supply assessments (WSA) for projects in or near the Visalia District into the demand forecast. As additional large-scale projects and/or specified land use planning processes arise (e.g., general plans, specific plans), additional WSAs will be developed to consider their impacts on available supplies.

We have attached the current public review draft of the UWMP, and incorporated WSCP for your review. Please share this with others in your organization that may be interested in the information.

Cal Water is available to discuss the assumptions used in the development of the UWMP for the Visalia District, including available supply, water demands, land use, as well as any other aspects of the plan.

Should you have any questions or comments, please contact Michael Bolzowski at mbolzowski@calwater.com.

Sincerely,

Michael Hurley
WATER RESOURCES MANAGER
CALIFORNIA WATER SERVICE
(323) 430-0250

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Bolzowski, Michael R.

From: Hurley, Michael
Sent: Tuesday, May 4, 2021 11:00 PM
To: randy.groom@visalia.city
Cc: McCusker, Kevin; Johnson, Stephen
Subject: Cal Water's 2020 Draft UWMP for its Visalia District
Attachments: Visalia (CM) - Cal Water UWMP.pdf

Dear Mr. Groom,

California Water Service (Cal Water) is currently updating its Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) to reflect water service conditions in the Visalia District. The Visalia District serves portions of the City of Visalia and segments of unincorporated Tulare County, including the Mullen, Tulco, and Goshen public water systems.

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Should you have any questions or comments, please contact Michael Bolzowski at mbolzowski@calwater.com.

Sincerely,

Michael Hurley
WATER RESOURCES MANAGER

Appendix C: Public Meeting Notice

- Public Meeting Notice of Intent
- Proof of Publication
- Public Meeting Presentation

Good afternoon!

We hope that this note finds you well.

We wanted to provide you with an update on the preparation of our updated Urban Water Management Plans and Water Shortage Contingency Plans.

These plans are a critical component of the steps we take to ensure there are sufficient water supplies to meet the current and future water needs of our customers, and we look forward to working with you on this important project.

Please let us know if you have any questions or need any additional information.

Cal Water Community Affairs

Urban Water Management Plan and
Water Shortage Contingency Plan - 2020 Update

As a defined urban water supplier, California Water Service (Cal Water) is preparing an update to its Urban Water Management Plans (UWMP) and Water Shortage Contingency Plans (WSCP) that will address the water service conditions in our service areas. These documents support a water supplier's long-term resource planning to ensure that adequate water supplies are available to meet existing and future water demands under defined conditions. It is Cal Water's intent to adopt the UWMPs, and the incorporated WSCPs, and file the plans as required with the Department of Water Resources, the California State Library, and any city or county within which Cal Water provides service no later than 30 days after adoption.

Schedule of upcoming actions:

After a public review period, a public meeting to receive comments on the Draft UWMP and WSCP will be held. As the information becomes available for each service area, the electronic copy of the UWMP, WSCP, and information on the public meeting, including a link to participate, will be available at the following internet address:

https://www.calwater.com/conservation/uwmp-review/

If you are unable to attend the scheduled public meeting but want to provide comments regarding the proposed UWMP or WSCP, you may send your comments via email to PlanningInfo@calwater.com.

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CALIFORNIA WATER SERVICE CO/PLANNING DEPT.
1720 NORTH FIRST ST.
SAN JOSE, CA 95112

CNS 3466838

COPY OF NOTICE

Notice Type: HRG NOTICE OF HEARING

Ad Description CALIFORNIA WATER SERVICE - VISALIA DISTRICT

To the right is a copy of the notice you sent to us for publication in the VISALIA TIMES-DELTA. Please read this notice carefully and call us with any corrections. The Proof of Publication will be filed with the County Clerk, if required, and mailed to you after the last date below. Publication date(s) for this notice is (are):

05/04/2021 , 05/11/2021

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NOTICE OF INTENT TO ADOPT AN URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN AND HOLD A PUBLIC MEETING TO RECEIVE COMMENTS ON THE PROPOSED PLANS

CALIFORNIA WATER SERVICE – VISALIA DISTRICT

California Water Code (CWC) sections 10610 through 10656, known as the "Urban Water Management Planning Act" (Act), require all urban water suppliers that provide water for municipal purposes either directly or indirectly to more than 3,000 customers or supply more than 3,000 acre-feet of water annually to prepare an Urban Water Management Plan (UWMP) at least once every five years.

UWMPs support a water supplier's long-term resource planning to ensure that adequate water supplies are available to meet existing and future water demands under defined conditions. The UWMP must describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation, and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The UWMP must also address measures for residential, commercial, governmental, and industrial water demand management.

Further, Section 10632 of the CWC requires that every urban water supplier shall prepare and adopt a

Water Shortage Contingency Plan (WSCP) as part of its plan (UWMP). Section 10632.2 provides that,

"An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan...or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1." The WSCP will be incorporated as an appendix of the UWMP.

One of Cal Water's service areas is the Visalia District, which is located in Tulare County. The Visalia District serves portions of the City of Visalia and segments of unincorporated Tulare County, including the Mullen, Tulco, and Goshen public water systems. As a defined urban water supplier, Cal Water is preparing an update to its UWMP that will address the water service conditions in the Visalia District. It is Cal Water's intent to adopt that UWMP, and the incorporated WSCP, and file that plan as required with the Department of Water Resources, the California State Library, and any city or county within which Cal Water provides service no later than 30 days after adoption.

Schedule of upcoming actions:

On or about May 3, 2021, an electronic copy of the Draft 2020 UWMP and WSCP will be available for review. After a public review period, a public meeting to receive comments on the Draft UWMP and WSCP Plan for the Visalia District will be held online on May 18, 2021, at 7:00 p.m. The electronic copy of the UWMP, WSCP, and additional information on the public meeting, including a link to participate, is available at the following internet address:

https://www.calwater.com/conservation/uwmp-review/

If you are unable to attend the scheduled public meeting but want to provide comments regarding the proposed UWMP or WSCP, you may send your comments via email to PlanningInfo@calwater.com. Cal Water will receive comments on the Draft 2021 UWMP and WSCP from May 3 through May 25, 2021.

Please share this notice with others that may have interest in this matter.
5/4, 5/11/21
CNS-3466838#
VISALIA TIMES-DELTA

California Water Service

May 18, 2021

Quality. Service. Value.

Visalia District

2020 Urban Water Management Plan
2020 Water Shortage Contingency Plan

Meeting Agenda

- Purpose and objectives
- Introduce California Water Service (CWS) staff and consultants
- Presentation of the 2020 Urban Water Management Plan (UWMP)
- Presentation of 2020 Water Shortage Contingency Plan (WSCP)
- Drought update
- Public comments and questions

2020 UWMP Update: Public Outreach

- Preliminary information sent to relevant entities in February 2021
- Second notice sent to relevant entities in May 2021
- Two notices posted in local newspaper
- Draft 2020 UWMP and WSCP available for review at **https://www.calwater.com/conservation/uwmp-review/**
- Public hearing

Urban Water Management Planning Act

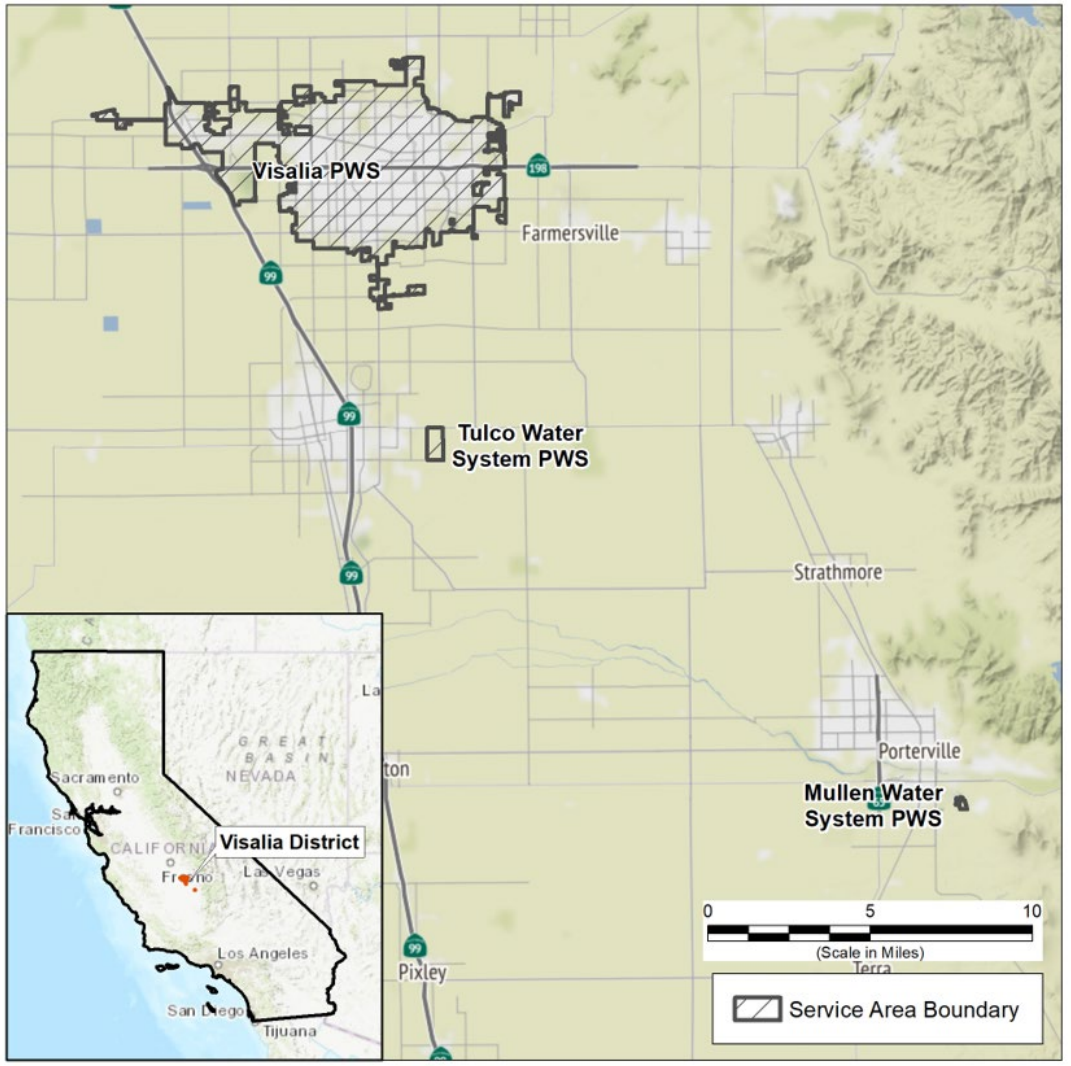
- California Water Code Part 2.6 Chapters 1-4 (Sections 10610-10656)
- Threshold: Utilities with 3,000+ services or 3,000+ acre-feet per year (AFY) water sales
- At least a 20-year planning horizon
- Must be updated every 5 years
- Must be submitted by July 1, 2021
- Supports long-term water resource planning to ensure adequate supplies
- Basis for SB-610 Water Supply Assessments

UWMP Elements

- Service area description
- Population forecast
- Supply and demand projections through 2045 in normal, single dry and multiple dry years
- Water supply reliability
- Conservation/Demand Management Measures
- Climate change
- WSCP

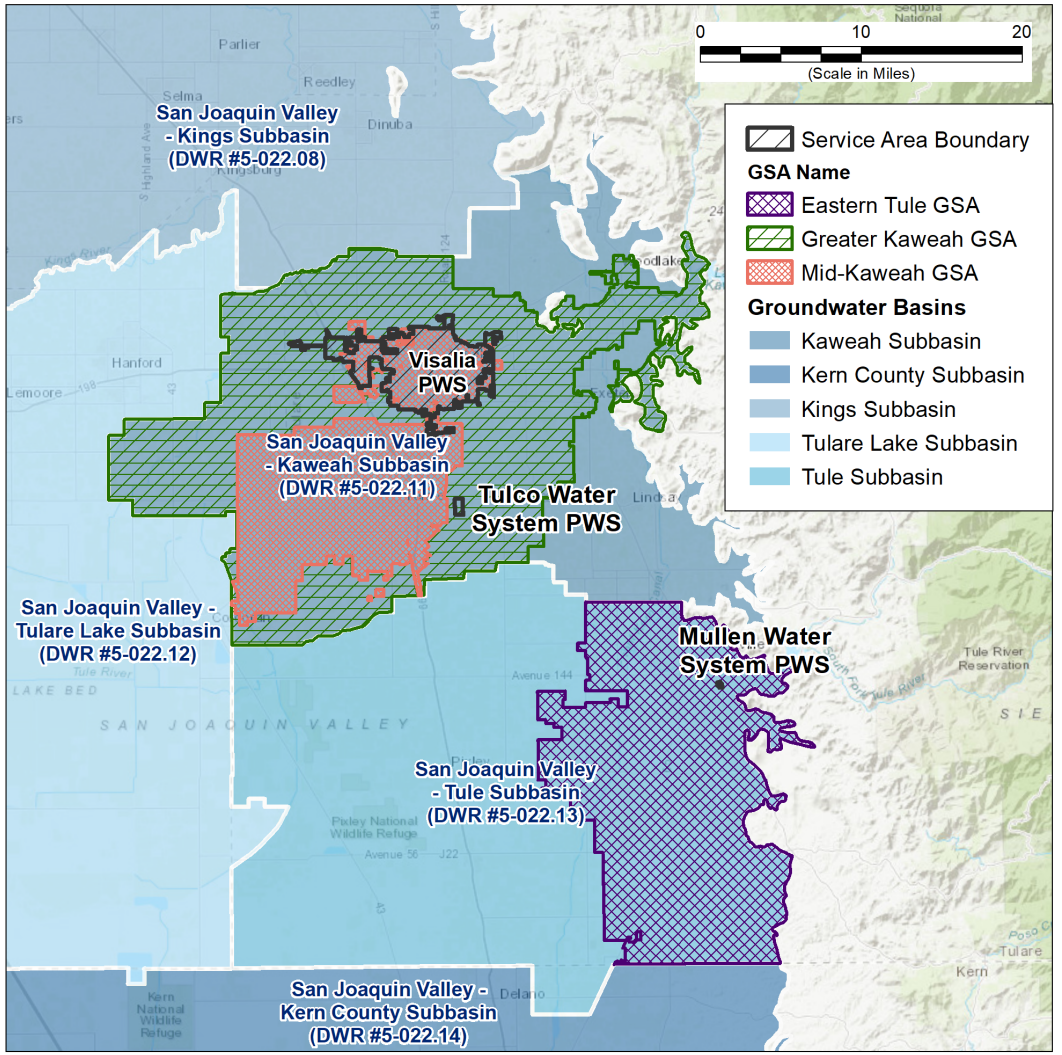
District Overview

- Serving Visalia District since 1926
- Three separate Public Water Systems
- Uses groundwater produced by 59 wells
- Distribution system includes over 600 miles of pipeline
- Visalia PWS comprises majority of district demand



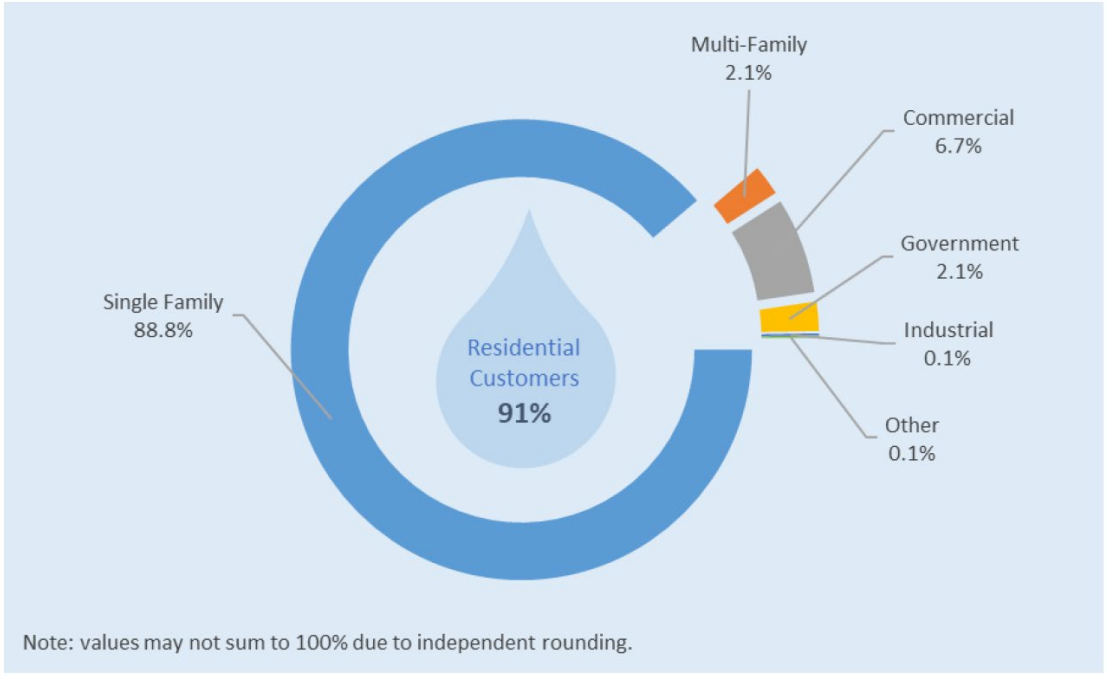
Water Supply Sources

- Groundwater pumped from the following basins
  - Kaweah Subbasin
  - Tule Subbasin
    - (0.1% of total District pumping)
- No current or projected use of recycled water or other supply sources



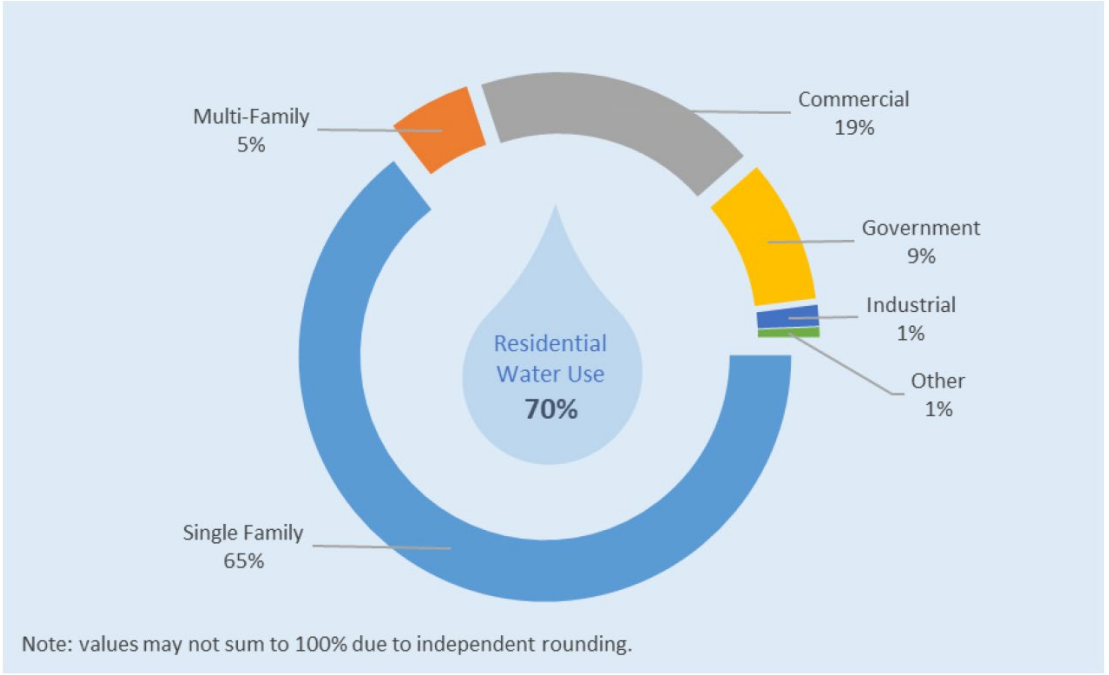
Distribution of Services/Demand

Types of Services



Note: values may not sum to 100% due to independent rounding.

Demand



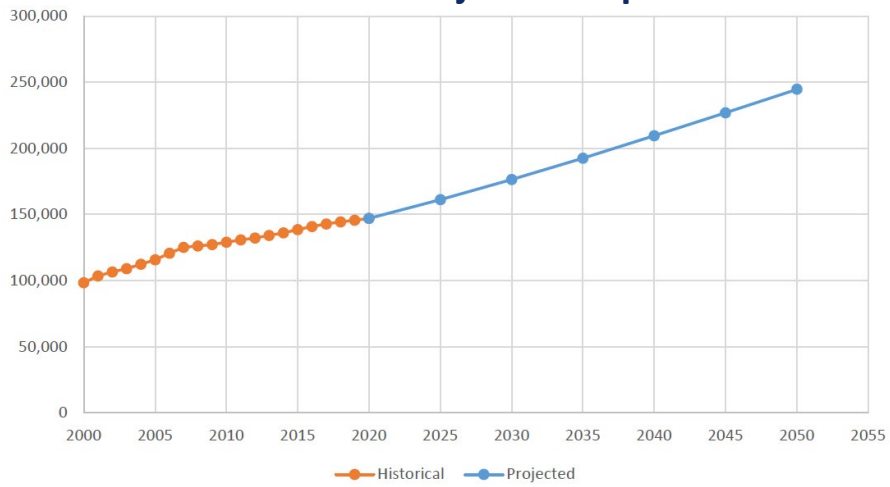
Note: values may not sum to 100% due to independent rounding.

Demand Projection Methodology

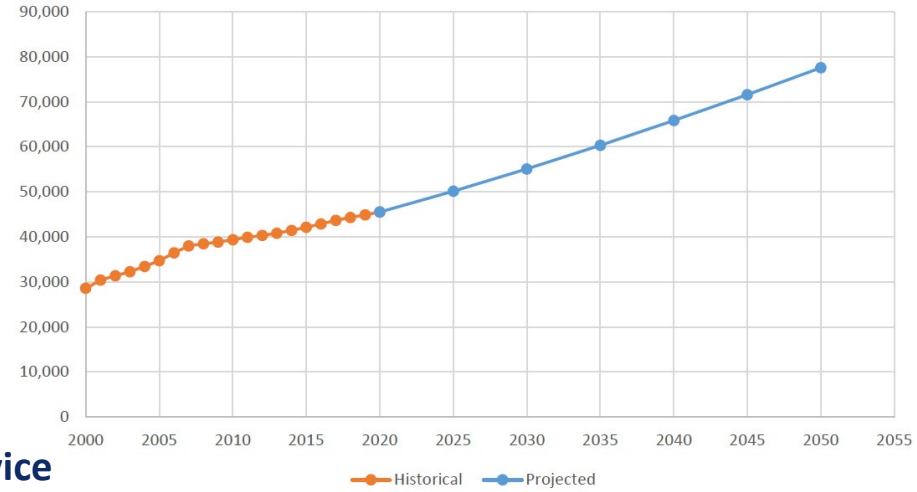
- Forecast horizon is beyond 25 years required by UWMP
- Generates normal-, wet-, and dry-year demand forecasts
- Directly considers impacts of climate change
- Demand model uses historical data on services, sales, production, population, and proposed conservation measures
- Regional Growth Forecast: housing and employment growth forecasts based on county-level forecasts prepared by Caltrans

Population & Account Projections

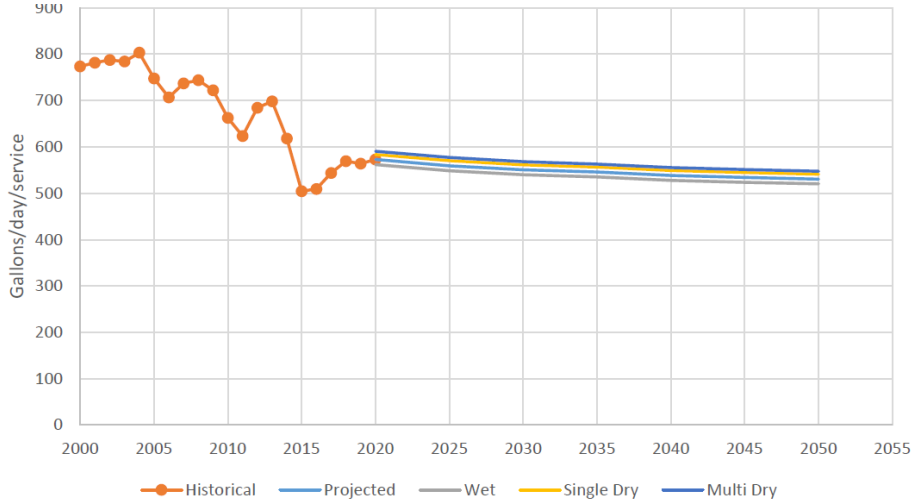
Historical and Projected Population



Historical and Projected Services

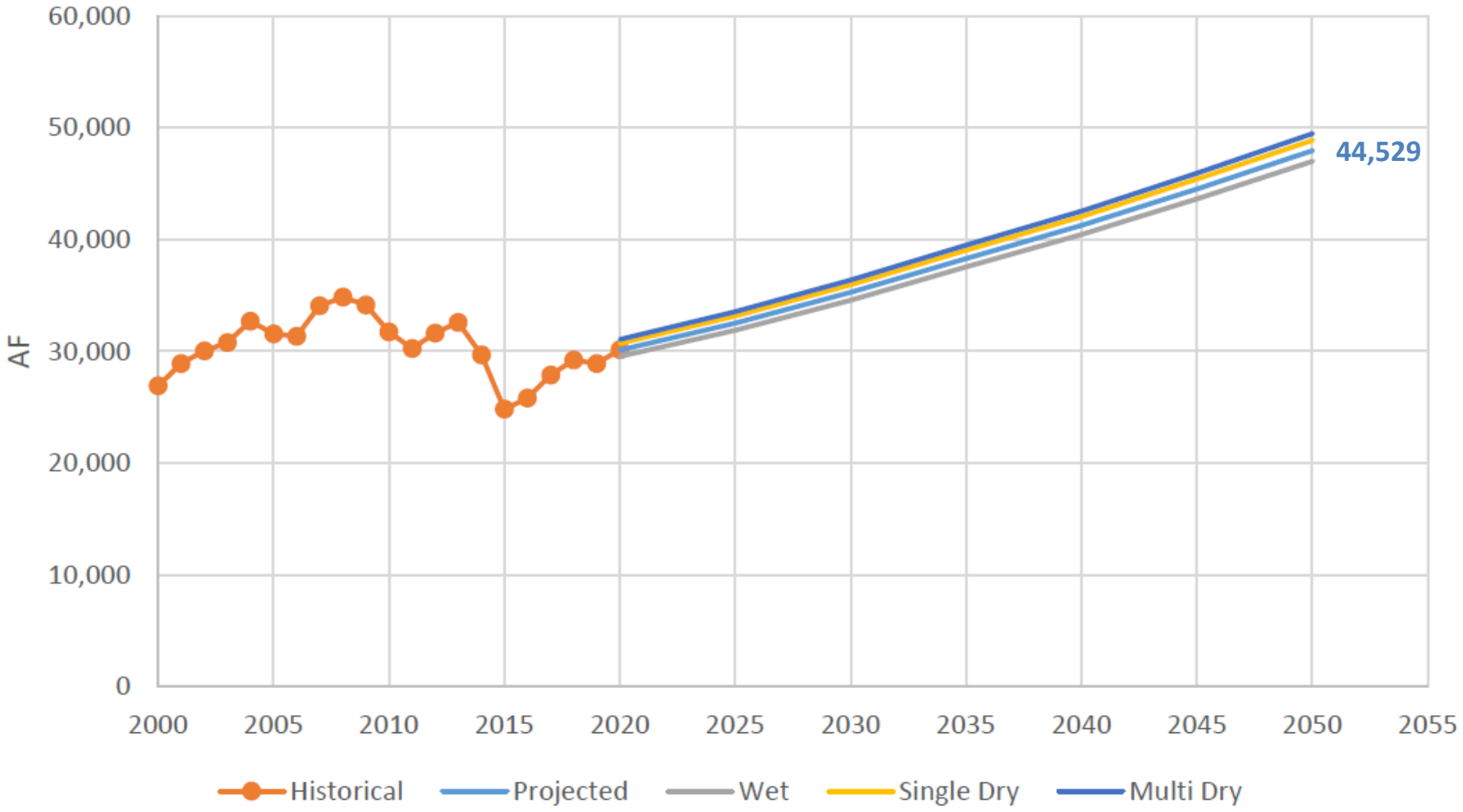


Average Demand Per Service



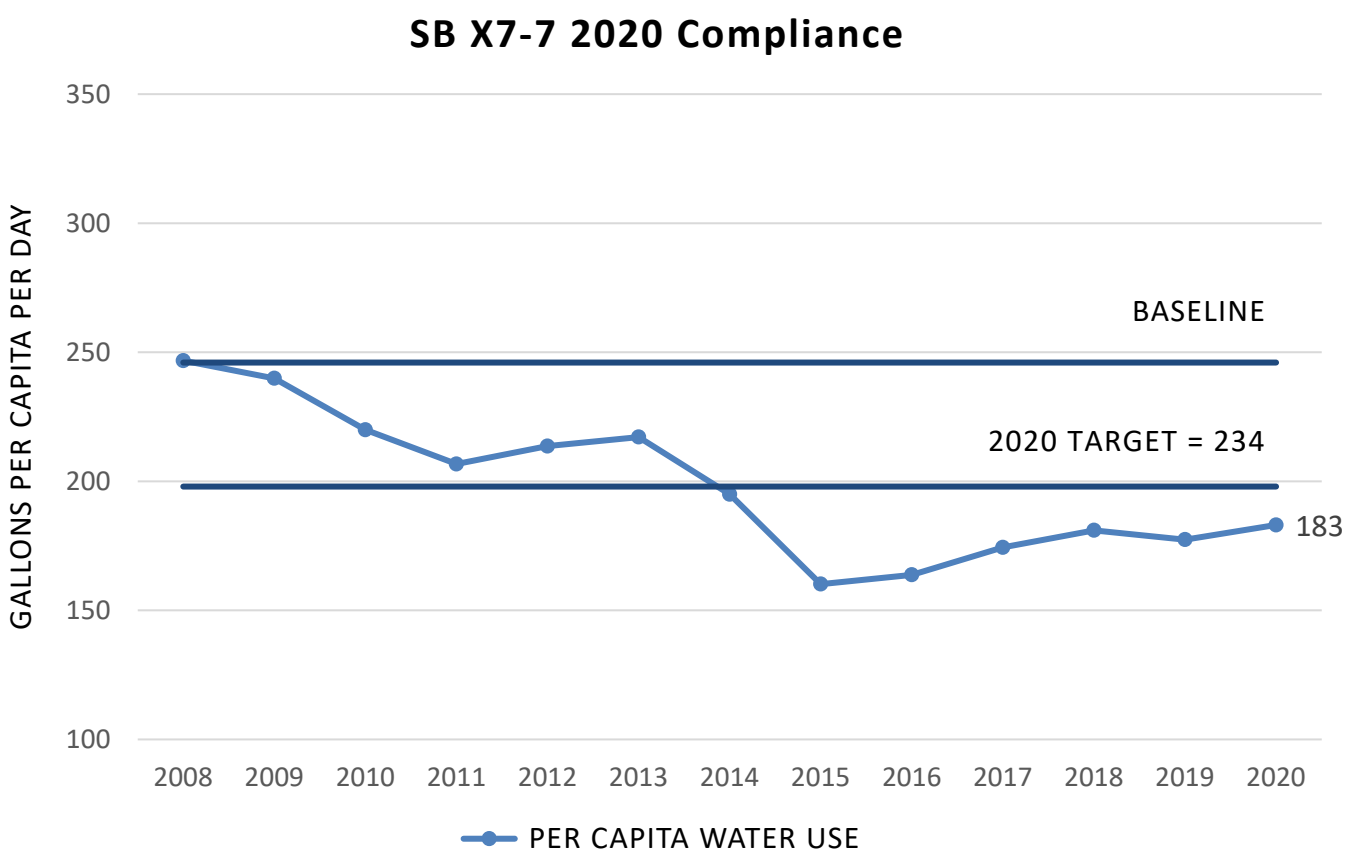
Demands for Potable Water - Projected

- 2045 demand projected to be 44,529 acre-feet per year
- 57% increase relative to 2020 demands



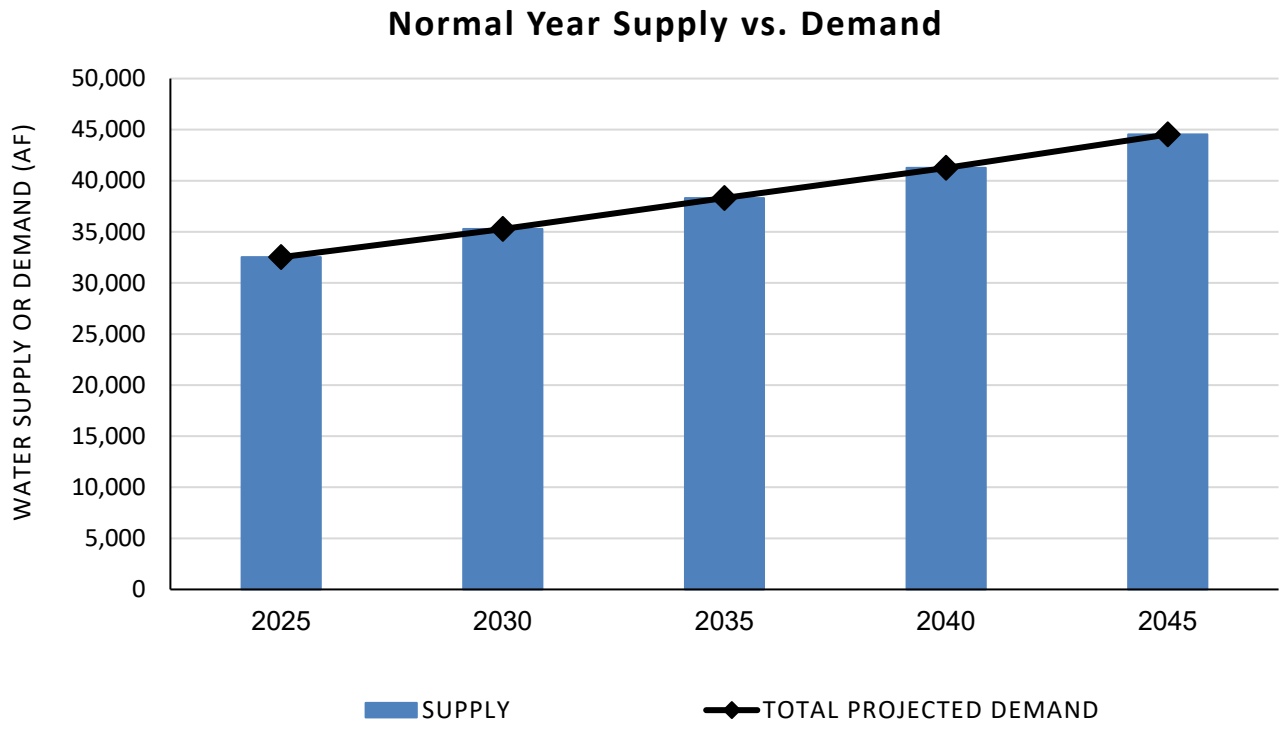
SB X7-7 (20% by 2020)

- Goal is to reduce per capita urban water use below baseline by:
  - 10% by Dec. 31, 2015
  - 20% by Dec. 31, 2020
- Visalia District met its 2020 Target



Supply Sufficiency

- Supply sufficiency analysis is based on the fact that Municipal & Industrial (M&I) demands are relatively minor within the basins and are subject to certain legal protections
- Supply is projected to be sufficient to meet projected demand under normal, single dry, and multiple dry year conditions
- Any unexpected shortages will be addressed by the WSCP

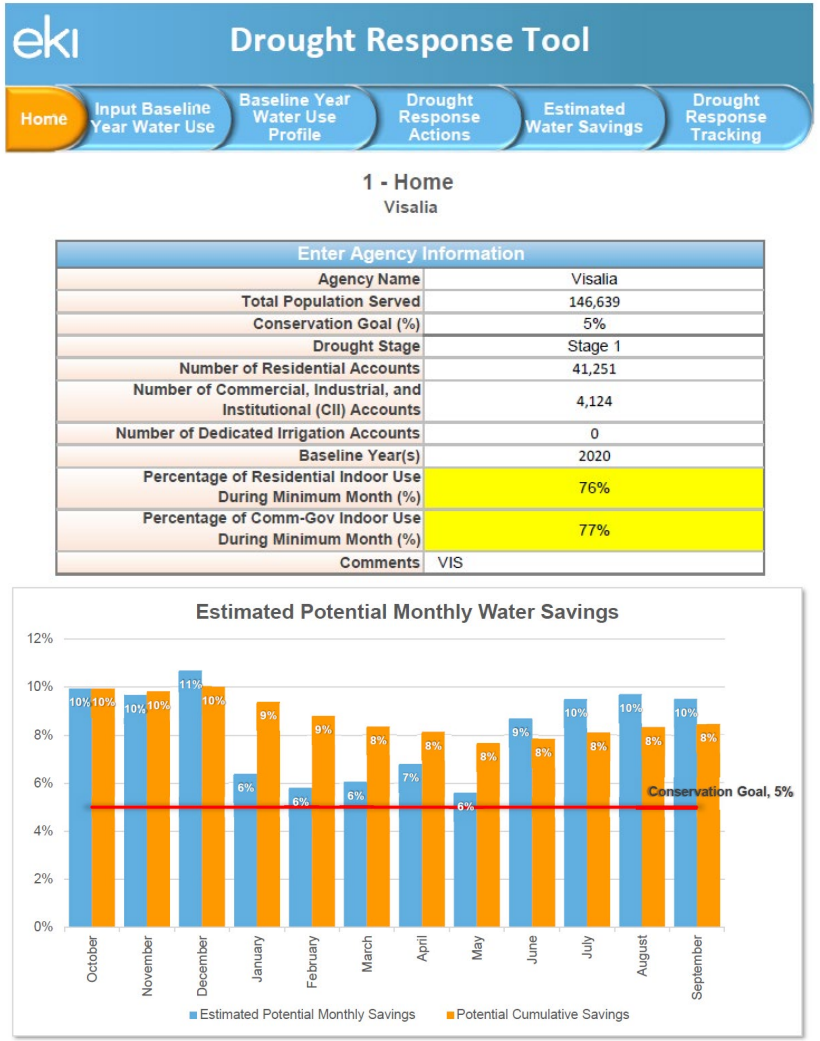


Local Topics – Visalia District

- Implementation of Sustainable Groundwater Management Act (SGMA) is in early stages and may impact future supply reliability
  - The Kaweah and Tule subbasins are not adjudicated; however, DWR determined that both subbasins are in a condition of “critical overdraft”
  - The final Groundwater Sustainability Plans (GSPs) for the Mid-Kaweah GSA, the Greater Kaweah GSA, and the Eastern Tule GSA are available on the DWR SGMA Portal website
  - GSPs discuss potential groundwater allocation programs, but impacts to Cal Water remain unknown
- Cal Water is actively engaging in SGMA implementation and will incorporate any impacts into ongoing supply planning

Water Shortage Contingency Plan Elements

- Comprehensive drought response plan
  - Annual assessment of water supply reliability
  - Six standard shortage stages (10% to >50%)
  - Shortage response actions
  - Communication protocols
  - Monitoring, enforcement, and reporting
- Quantitatively assessed using Drought Response Tool



Drought Update

- Governor has issued drought emergencies in 41 counties
- Cal Water is monitoring drought conditions in all of its service territories
  - Established a Drought Response Committee
  - Proactively developing conservation messaging
- Cal Water is closely coordinating its drought response with other water agencies and regulatory bodies
- Cal Water will follow protocols outlined in the WSCP as needed
  - Based on local conditions or state mandates

Questions or Comments

- Draft 2020 UWMP and 2020 WSCP available at **https://www.calwater.com/conservation/uwmp-review/**
- Comments on any parts of the UWMP will be accepted through June 18, 2021
- Send 2020 UWMP and WSCP comments to: planninginfo@calwater.com

Appendix D: Summary of Demand Projection Methodology and Assumptions

Cal Water Long-Term Demand Forecast Model Overview

Forecast Domain

The forecast model generates separate forecasts for each customer class and distribution system. Table 1 lists Cal Water districts and distribution systems. Table 2 lists customer classes.

Forecast Horizon and Time Step

The forecast horizon is 30 years. The forecast has an annual time-step.

Normal, Wet, and Dry Year Forecasts

The forecast model generates normal-, wet-, and dry-year demand forecasts. The normal-year forecast is the default forecast. The wet- and dry-year forecasts can be substituted for the default forecast as necessary for system planning purposes. The model produces two different dry year forecasts: the single dry year forecast and the multiple dry year forecast. The latter represents the expected effect of prolonged drought conditions on unconstrained water demand.[1]

Relationship to GRC Sales Forecast

The first year of the forecast can be set to the current GRC sales forecast or actual consumption.

Relationship to PAWS

The demand model uses historical data on services, sales, production, and population from Cal Water's Production Analysis Worksheets (PAWS).

Accounting Rules

The model uses the following accounting rules to ensure forecast consistency:

- Population and conservation savings forecasts are functions of the service forecast.
- The sales forecast for a distribution system is the sum of the class-level sales forecasts for the distribution system. The production forecast for a distribution system is the sum of the sales and non-revenue water (NRW) forecasts for the distribution system.
- The sales and production forecasts for a district are the sum of the sales and production forecasts for its distribution systems.

Volume Units

Sales and production forecasts are in acre-feet (AF). Average sales and per capita forecasts are in gallons per day.

Per Capita Water Use

The model generates per capita forecasts for water use by single-family customers, water use by multi-family customers, water use by all residential customers, and water use by all district customers.

[1] Unconstrained demand is what demand would be in the absence of water use restrictions or policies intended to curtail water use.

Service Forecast

The forecast model generates three alternative service forecasts:

- Average Y-Y Change in Services. The model bases the forecast on the historical year-to-year (y-y) change in the number of services. This forecast assumes additive growth.
- Average Y-Y % Change in Services. The model bases the forecast on the historical y-y percentage change in services. This forecast assumes exponential growth.
- Regional Growth Forecast. The model uses regional housing and employment growth forecasts to project future services. Districts in the Bay Area use census-tract level growth forecasts prepared by the Association of Bay Area Governments (ABAG). Districts in Southern California use census-tract-level growth forecasts prepared by the Southern California Association of Governments (SCAG). The remaining districts use county-level forecasts prepared by Caltrans.

Regional Forecasts

Table 3 lists the regional forecasts in the model. Table 4 summarizes how the model uses the regional forecasts to project future services.

Service Floors and Ceilings

The forecast can include floors and ceilings on the service growth. The floor (ceiling) is the minimum (maximum) number of services allowed in the forecast.

User-Specified Growth Rates

The model allows user-specified growth rates.

Water Supply Assessments

The user can add to the forecast projected services and water use from Water Supply Assessments prepared for proposed development projects. The user can specify how much of this projected growth in services and water use the model should treat as additive to the baseline forecast.

Population Forecasts

The population projection is a function of the residential service projections to ensure internal consistency. Population in year t is:

$$Population_t = \left[\frac{persons}{service}\right]_{SFR} \cdot SFRservices_t + \left[\frac{persons}{service}\right]_{MFR} \cdot MFRservices_t$$

For multi-family services, the calculation of average persons per service uses the equation below. The model uses county assessor data linked to Cal Water customer data to estimate average dwelling units per parcel and average parcels per service. It uses census data to estimate average persons per dwelling unit.

$$\left[\frac{persons}{service}\right]_{MFR} = \frac{Avg\ Dwelling\ Units}{Parcel} \cdot \frac{Avg\ Parcels}{Service} \cdot \frac{Avg\ Persons}{Dwelling\ Unit}$$

Sales/Service Forecast

The model generates separate forecasts of sales/service for each customer class and distribution system.

Sales/Service Initialization

The model user sets sales/service for first year of the forecast to either current year water use or the most recent General Rate Case sales forecast. The 2020 UWMP projections start with 2020 actual sales/service.

Sales/Service Adjustments

In each forecast year, the model adjusts the previous year's sales/service estimate for:

1. Rebound from the 2012-16 drought
2. Passive water savings from plumbing codes and appliance standards
3. Active water savings from Cal Water conservation programs
4. Real changes in the marginal cost of water service
5. Real changes in per capita income

The user can select which adjustments to apply. The 2020 UWMP projections include all the adjustments except the drought rebound adjustment. The 2020 UWMP projections exclude the drought rebound adjustment because analysis of recent consumption trends showed that further rebound from the 2012-2016 drought was unlikely.

A description of each adjustment follows.

Drought Rebound

The model adjusts the sales/service forecast for demand recovery following the 2012-2016 drought. The model makes this adjustment using data on the growth in sales/service between 2016 and 2017. The model assumes some of the savings achieved during the drought will be permanent. The user can set the level of permanent drought savings. The default setting is 20%.

Passive Water Savings

The model uses DWR projections of water savings from plumbing/building codes to forecast passive water savings.[2] The model extends the DWR projections, which run through 2040, to 2050.

Active Water Savings

The model uses conservation program savings projections from Cal Water's 2015 Conservation Master Plans to forecast active water savings.

Price and Income Adjustments

The model adjusts average sales for expected changes in real income and cost of water service. The adjustment equation is:[3]

[2] M.Cubed. 2016. Projected Statewide and County-Level Effects of Plumbing Codes and Appliance Standards on Indoor GPCD. Technical Memorandum prepared by David Mitchell for the California Department of Water Resources. August 30, 2016.

[3] The model uses a constant-elasticity-of-demand specification: $Q_t = AP_t^{\varepsilon} I_t^{\delta}$

$$\Delta Q_t = Q_0 \left(1 - \left(\frac{P_t}{P_0}\right)^{\varepsilon} \left(\frac{I_t}{I_0}\right)^{\delta}\right)$$

where Q_0 is sales/service in the base year of the forecast, $\left(\frac{P_t}{P_0}\right)$ and $\left(\frac{I_t}{I_0}\right)$ are the price of water and income relative to the base year of the forecast, and ε and δ are empirically derived estimates of price and income elasticity.

Sales Forecast

The sales forecast is the product of the service and average use per service forecasts.

Non-Revenue Water Forecast

The non-revenue water forecast is a function of the services forecast. The forecast starts with an initial estimate of non-revenue water, expressed in gallons/connection/day. The model decomposes this estimate into real and apparent loss. The model assumes future apparent loss is equal to the average apparent loss for the five year before the start of the forecast. In the case of real loss, the model assumes Cal Water's loss management program will reduce real losses over time. The amount of reduction depends on the staring estimate of real loss. If this estimate is 10 gallons/connection/day or less, the model assumes no further reduction. Otherwise, the model assumes real losses (in gallons/connection/day) will decrease until they are equal to 75% of the average real loss for the five years before the start of the forecast or the State Water Board draft real water loss standard for the distribution system, whichever is greater.[4] The model assumes the reduction in real loss will occur between 2020 and 2030.

Production Forecast

The production forecast is the sum of the sales and NRW forecasts.

Normal, Wet, Single Dry, and Multiple Dry Year Projections

The model generates normal, wet, single dry, and multiple dry year forecasts of sales and production. The model bases these forecasts on empirically derived relationships between monthly water sales, rainfall, and air temperature estimated for each Cal Water district.[5]

- Wet year – minus one standard deviation weather effect on sales and production
- Single dry year – plus one standard deviation weather effect on sales and production
- Multiple dry year – plus 1.6 standard deviations weather effect on sales and production

In the case of the dry year forecasts, the model is forecasting demand in the absence of drought water use restrictions or other policies that would limit water use in dry years.

[4] The State Water Board did not develop a draft water loss standard for every Cal Water distribution system. For those without a draft standard, the model assumes real losses will decrease until they are equal to 75% of the average real loss for the five year before the start of the forecast.

[5] A&N Technical Services, Cal Water Long Term Water Demand Forecast Model, December 2014.

Table 1. Long-Term Demand Model Districts and Systems

Label	District-System	Notes
AV	**Antelope Valley District**	
AV-FMT	Fremont System	
AV-LAN	Lancaster System	
AV-LKH	Lake Hughes System	
AV-LVY	Leona Valley System	
BG	**Bear Gulch District**	No sub-systems in district
BK	**Bakersfield District**	
BK-BK	Bakersfield System	
BK-NG	North Garden System	
CH	**Chico District**	
CH-CH	Chico System	
CH-HAM	Hamilton City System	
DIX	**Dixon District**	No sub-systems in district
DOM	**Dominguez District**	No sub-systems in district
ELA	**East Los Angeles District**	No sub-systems in district
HAW	**Hawthorne District**	No sub-systems in district
HR	**Hermosa-Redondo District**	No sub-systems in district
KC	**King City District**	No sub-systems in district
KRV	**Kern River Valley District**	
KRV-BDFLO	Lower Bodfish System	
KRV-BDFUP	Upper Bodfish System	
KRV-KNVARD	Kernville & Arden System	Includes KNV, KRVArdenWaterCo, COUN, MSH, POND
KRV-LKL	Lakeland System	
KRV-ONX	Onyx System	
KRV-SLK	South Lake System	Includes SQM
KRV-SPM	Split Mountain System	
LAS	**Los Altos District**	No sub-systems in district
LIV	**Livermore District**	No sub-systems in district

Label	District-System	Notes
MPS	**Mid-Peninsula District**	
MPS-SM	San Mateo System	
MPS-SC	San Carlos System	
MRL	**Marysville District**	No sub-systems in district
ORO	**Oroville District**	No sub-systems in district
PV	**Palos Verdes District**	No sub-systems in district
RDV	**Redwood Valley District**	
RDV-ARM	Armstrong System	
RDV-CSP	Coast Springs System	
RDV-HKN	Hawkins Water System	
RDV-LUC	Lucerne System	
RDV-NOH	Noel Heights System	
RDV-RPD	Rancho del Paradiso System	
SEL	**Selma District**	No sub-systems in district
SLN	**Salinas District**	
SLN-SLN	Salinas System	Includes Bolsa Knolls, Country Meadows
SLN-SLNH	Salinas Hills System	Includes Buena Vista, Indian Springs
SLN-OH	Oak Hill System	
SLN-LL	Las Lomas System	
SSF	**South San Francisco District**	No sub-systems in district
STK	**Stockton District**	No sub-systems in district
VIS	**Visalia District**	No sub-systems in district
WIL	**Willows District**	No sub-systems in district
WLK	**Westlake District**	No sub-systems in district

Table 2. Long-Term Demand Model Customer Classes

Label	Description	Revenue Class #
SFR	Single-Family Residential	1
FLT	Single-Family Flat Rate	4
RES	SFR + FLT	1, 4
MFR	Multi-Family	15
COM	Commercial/Business	2
GOV	Government/Public Authority	11
IND	Industrial	3
OTH	Other/miscellaneous	8,13
IRR	Dedicated irrigation customers	7

Table 3. Regional Forecasts used in First Generation Long-term Demand Model Forecasts

Regional Forecast	Version	Range
ABAG	Plan Bay Area 2040, GEOID10-level summary	2010 to 2040
SCAG	RTP07 GEOID10-level	2010 to 2035
Caltrans	2017 County Forecasts	2010 to 2050

Table 4. Regional Growth Rates used in the Service Growth Forecasts

Service Class	ABAG	SCAG	Caltrans
SFR	y-y % change in single-family dwelling units	y-y % change in all residential dwelling units	y-y % change in single-family dwelling units
MFR	y-y % change in multi-family dwelling units	y-y % change in all residential dwelling units	y-y % change in multi-family dwelling units
COM	y-y % change in total number of jobs	y-y % change in total number of jobs	y-y % change in county employment in retail, wholesale, information, financial, professional, and leisure sectors
GOV	y-y % change in gov't, information, and construction jobs	y-y % change in total number of jobs	y-y % change in county employment in federal, state, local government and education and healthcare sectors
IND	y-y % change in manufacturing jobs	y-y % change in total number of jobs	y-y % change in county employment in manufacturing sectors

Historical and Projected Services, Water Sales, and Total Production

District Demand Projection Report
Visalia

6/4/2021

General Rate Case Sales Baseline 2020

Historical Data Range
First Year 2000
Last Year 2020

Forecast Range
First Year 2020
Last Year 2050

Service Growth Basis Caltrans Growth Forecasts

Service Growth Rates

Class	Caltrans Projected	Historical %Y-Y[1] 5-Yr	10-Yr	15-Yr	20-Yr
RES[2]	1.7%	1.6%	1.6%	1.9%	2.5%
MFR	1.5%	-0.2%	7.4%	11.3%	8.6%
COM	1.7%	0.8%	-1.1%	-0.6%	-0.2%
GOV	2.2%	3.1%	2.3%	4.2%	7.1%
IND	0.3%	-0.4%	0.0%	-0.1%	0.2%
TOT		1.6%	1.5%	1.8%	2.4%

Water Supply Assessments

	WSA Name	Completion Date	Incorporated into Forecast (Y/N)
1			
2			
3			
4			
5			

Sales Forecast Adjustments

Drought Rebound	OFF
Plumbing Code	ON
Active Conservation	ON
Price Response	ON
Income Response	ON

Non-Revenue Water (NRW) Basis

Real loss (gal/con/day):
2016-2020 average if <= 10 gal/con/day
Draft Water Board standard or 75% of 2016-2020 average, whichever is greater, by 2030.
Apparent loss (gal/con/day): 2016-2020 average.

1. Account reclassifications can impact historical %Y-Y growth rates for individual customer classes.
2. RES = Metered and unmetered single-family residential customers.

Historical Service Counts

YEAR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
2000	24,871	188	3,191	236	60	36	0	28,581
2001	26,604	197	3,250	243	64	34	0	30,391
2002	27,518	190	3,194	368	64	34	0	31,368
2003	28,321	190	3,167	483	63	47	0	32,271
2004	29,370	196	3,258	498	64	51	0	33,436
2005	30,491	196	3,354	507	64	70	0	34,681
2006	32,123	196	3,459	505	64	93	0	36,439
2007	33,564	195	3,561	532	64	91	0	38,007
2008	33,852	303	3,474	713	64	74	0	38,479
2009	34,124	428	3,470	727	64	45	0	38,858
2010	34,634	474	3,420	747	63	38	0	39,376
2011	35,178	757	3,091	758	63	40	0	39,887
2012	35,607	938	2,904	770	64	33	0	40,315
2013	36,031	958	2,925	781	65	35	0	40,795
2014	36,629	964	2,952	794	64	38	0	41,441
2015	37,266	985	2,951	803	64	51	0	42,120
2016	37,948	1,000	2,953	823	64	65	0	42,853
2017	38,653	996	2,977	877	64	76	0	43,642
2018	39,210	994	3,014	927	63	69	0	44,278
2019	39,803	982	3,031	934	64	70	0	44,884
2020	40,443	973	3,071	936	63	63	0	45,549
2021								
2022								
2023								
2024								
2025								
2026								
2027								
2028								
2029								
2030								

CAGR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
5-Year	1.6%	-0.2%	0.8%	3.1%	-0.4%	4.2%		1.6%
10-Year	1.6%	7.4%	-1.1%	2.3%	0.0%	5.1%		1.5%
15-Year	1.9%	11.3%	-0.6%	4.2%	-0.1%	-0.7%		1.8%
20-Year	2.5%	8.6%	-0.2%	7.1%	0.2%	2.9%		2.4%

CAGR = Compound Annual Growth Rate

District Demand Projection Report
Visalia

Historical Sales (AF)

YEAR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
2000	16,575	857	5,719	848	458	310	0	24,768
2001	18,089	937	6,144	977	348	108	0	26,602
2002	18,856	953	5,800	1,369	559	123	0	27,660
2003	19,328	950	5,992	1,549	310	217	0	28,345
2004	21,065	989	5,888	1,606	318	219	0	30,084
2005	20,361	926	5,431	1,636	288	407	0	29,050
2006	19,838	929	5,685	1,636	305	451	0	28,844
2007	21,545	914	6,376	1,889	312	337	0	31,373
2008	21,989	1,064	6,033	2,512	321	140	0	32,060
2009	21,460	1,197	5,942	2,515	270	54	0	31,437
2010	19,408	1,205	5,897	2,404	269	39	0	29,221
2011	18,110	1,576	5,381	2,433	286	53	0	27,840
2012	20,316	1,826	5,546	2,817	324	68	0	30,896
2013	21,065	1,846	5,594	2,899	393	97	0	31,894
2014	18,746	1,685	5,296	2,485	407	77	0	28,696
2015	15,337	1,479	4,525	2,001	366	96	0	23,804
2016	15,755	1,429	4,492	2,201	352	214	0	24,444
2017	16,952	1,477	5,011	2,505	407	215	0	26,567
2018	18,035	1,499	5,420	2,728	405	148	0	28,235
2019	18,111	1,497	5,341	2,873	414	118	0	28,354
2020	19,359	1,525	5,239	2,600	305	200	0	29,229
2021								
2022								
2023								
2024								
2025								
2026								
2027								
2028								
2029								
2030								

CAGR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
5-Year	4.8%	0.6%	3.0%	5.4%	-3.5%	15.8%		4.2%
10-Year	0.0%	2.4%	-1.2%	0.8%	1.3%	17.8%		0.0%
15-Year	-0.3%	3.4%	-0.2%	3.1%	0.4%	-4.6%		0.0%
20-Year	0.8%	2.9%	-0.4%	5.8%	-2.0%	-2.2%		0.8%

CAGR = Compound Annual Growth Rate

Historical Sales/Service (GPD)

YEAR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
2000	595	4,070	1,600	3,208	6,774	7,788		774
2001	607	4,252	1,688	3,593	4,895	2,829		781
2002	612	4,480	1,621	3,319	7,802	3,238		787
2003	609	4,470	1,689	2,860	4,411	4,101		784
2004	640	4,512	1,613	2,882	4,451	3,832		803
2005	596	4,229	1,446	2,882	4,037	5,197		748
2006	551	4,233	1,467	2,892	4,269	4,340		707
2007	573	4,184	1,598	3,171	4,372	3,305		737
2008	580	3,137	1,550	3,145	4,502	1,700		744
2009	561	2,497	1,529	3,090	3,772	1,069		722
2010	500	2,268	1,540	2,873	3,833	902		663
2011	460	1,860	1,554	2,864	4,062	1,176		623
2012	509	1,738	1,705	3,267	4,548	1,805		684
2013	522	1,719	1,707	3,316	5,415	2,492		698
2014	457	1,560	1,602	2,794	5,679	1,831		618
2015	367	1,342	1,369	2,223	5,100	1,676		505
2016	371	1,275	1,358	2,389	4,911	2,950		509
2017	392	1,324	1,503	2,549	5,679	2,540		543
2018	411	1,346	1,605	2,626	5,722	1,909		569
2019	406	1,360	1,573	2,746	5,814	1,511		564
2020	427	1,399	1,523	2,480	4,340	2,831		573
2021								
2022								
2023								
2024								
2025								
2026								
2027								
2028								
2029								
2030								

CAGR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
5-Year	3.1%	0.8%	2.2%	2.2%	-3.2%	11.1%		2.6%
10-Year	-1.6%	-4.7%	-0.1%	-1.5%	1.2%	12.1%		-1.4%
15-Year	-2.2%	-7.1%	0.3%	-1.0%	0.5%	-4.0%		-1.8%
20-Year	-1.6%	-5.2%	-0.2%	-1.3%	-2.2%	-4.9%		-1.5%

CAGR = Compound Annual Growth Rate

Historical Production (AF)

YEAR	SALES	NRW	PROD	NRW %	NRW GPD/Svc
2000	24,768	2,154	26,922	8.0%	67
2001	26,602	2,313	28,915	8.0%	68
2002	27,660	2,405	30,065	8.0%	68
2003	28,345	2,465	30,810	8.0%	68
2004	30,084	2,616	32,700	8.0%	70
2005	29,050	2,526	31,576	8.0%	65
2006	28,844	2,508	31,352	8.0%	61
2007	31,373	2,728	34,101	8.0%	64
2008	32,060	2,788	34,848	8.0%	65
2009	31,437	2,734	34,171	8.0%	63
2010	29,221	2,541	31,762	8.0%	58
2011	27,840	2,421	30,260	8.0%	54
2012	30,896	731	31,627	2.3%	16
2013	31,894	706	32,600	2.2%	15
2014	28,696	990	29,686	3.3%	21
2015	23,804	1,029	24,833	4.1%	22
2016	24,444	1,400	25,843	5.4%	29
2017	26,567	1,315	27,882	4.7%	27
2018	28,235	1,008	29,243	3.4%	20
2019	28,354	565	28,919	2.0%	11
2020	29,229	923	30,152	3.1%	18
2021					
2022					
2023					
2024					
2025					
2026					
2027					
2028					
2029					
2030					

CAGR	SALES	NRW	PROD		NRW GPD/Svc
5-Year	4.2%	-2.2%	4.0%		-3.7%
10-Year	0.0%	-9.6%	-0.5%		-10.9%
15-Year	0.0%	-6.5%	-0.3%		-8.2%
20-Year	0.8%	-4.1%	0.6%		-6.4%

CAGR = Compound Annual Growth Rate

Historical GPCD

		GPCD	
YEAR	POPULATION	RESIDENTIAL	TOTAL
2000	98,325	158	244
2001	103,510	164	249
2002	106,382	166	252
2003	108,946	166	252
2004	112,207	175	260
2005	115,674	164	244
2006	120,590	154	232
2007	124,971	160	244
2008	126,088	163	247
2009	127,164	159	240
2010	128,912	143	220
2011	130,699	134	207
2012	132,158	150	214
2013	134,033	153	217
2014	135,922	134	195
2015	138,404	108	160
2016	140,868	109	164
2017	142,714	115	174
2018	144,239	121	181
2019	145,531	120	177
2020	147,032	127	183
2021			
2022			
2023			
2024			
2025			
2026			
2027			
2028			
2029			
2030			

CAGR	POPULATION	RESIDENTIAL GPCD	TOTAL GPCD
5-Year	1.2%	3.2%	2.7%
10-Year	1.3%	-1.2%	-1.8%
15-Year	1.6%	-1.7%	-1.9%
20-Year	2.0%	-1.1%	-1.4%

CAGR = Compound Annual Growth Rate

Projected Services

YEAR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
2020	40,443	973	3,071	936	63	63	0	45,549
2021	41,226	994	3,136	957	63	70	0	46,446
2022	42,024	1,010	3,204	979	63	70	0	47,351
2023	42,835	1,027	3,273	1,002	63	70	0	48,271
2024	43,660	1,044	3,338	1,026	63	70	0	49,202
2025	44,498	1,062	3,401	1,055	63	70	0	50,150
2026	45,341	1,080	3,460	1,083	63	70	0	51,097
2027	46,196	1,099	3,521	1,108	63	70	0	52,058
2028	47,073	1,117	3,584	1,135	63	70	0	53,044
2029	47,966	1,137	3,650	1,163	63	70	0	54,051
2030	48,874	1,158	3,716	1,192	63	70	0	55,074
2031	49,792	1,178	3,784	1,222	63	70	0	56,111
2032	50,719	1,199	3,852	1,251	63	70	0	57,155
2033	51,653	1,220	3,920	1,280	63	70	0	58,208
2034	52,595	1,241	3,989	1,310	63	70	0	59,269
2035	53,545	1,262	4,057	1,339	63	70	0	60,337
2036	54,504	1,283	4,125	1,369	63	70	0	61,415
2037	55,473	1,305	4,194	1,399	63	70	0	62,504
2038	56,452	1,326	4,263	1,430	63	70	0	63,604
2039	57,441	1,347	4,333	1,461	63	70	0	64,715
2040	58,440	1,367	4,404	1,492	63	70	0	65,836
2041	59,449	1,388	4,475	1,523	63	70	0	66,969
2042	60,467	1,408	4,548	1,555	63	70	0	68,112
2043	61,493	1,427	4,623	1,587	63	70	0	69,264
2044	62,527	1,446	4,699	1,619	63	70	0	70,425
2045	63,570	1,464	4,776	1,651	63	70	0	71,595
2046	64,621	1,482	4,854	1,684	63	70	0	72,774
2047	65,680	1,499	4,934	1,716	63	70	0	73,963
2048	66,747	1,516	5,015	1,749	63	70	0	75,161
2049	67,823	1,533	5,098	1,782	63	70	0	76,370
2050	68,909	1,550	5,183	1,815	63	70	0	77,590

Projected Sales (AF)

YEAR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
2020	19,359	1,525	5,239	2,600	305	200	0	29,229
2021	19,361	1,518	5,313	2,641	308	223	0	29,365
2022	19,705	1,532	5,396	2,688	308	223	0	29,853
2023	20,063	1,548	5,482	2,738	308	223	0	30,363
2024	20,441	1,565	5,559	2,789	308	223	0	30,886
2025	20,815	1,583	5,634	2,854	308	223	0	31,418
2026	21,176	1,602	5,702	2,916	308	223	0	31,927
2027	21,511	1,621	5,774	2,970	308	223	0	32,407
2028	21,854	1,641	5,849	3,027	308	223	0	32,902
2029	22,222	1,663	5,929	3,090	308	223	0	33,434
2030	22,593	1,686	6,009	3,152	308	223	0	33,971
2031	22,987	1,711	6,097	3,221	308	223	0	34,547
2032	23,352	1,735	6,185	3,286	308	223	0	35,089
2033	23,778	1,762	6,273	3,351	308	223	0	35,695
2034	24,191	1,788	6,361	3,417	308	223	0	36,288
2035	24,604	1,815	6,448	3,483	308	223	0	36,881
2036	24,972	1,840	6,536	3,550	308	223	0	37,429
2037	25,338	1,866	6,623	3,616	308	223	0	37,975
2038	25,739	1,893	6,712	3,683	308	223	0	38,558
2039	26,120	1,919	6,801	3,751	308	223	0	39,121
2040	26,513	1,945	6,891	3,819	308	223	0	39,699
2041	26,929	1,971	6,982	3,888	308	223	0	40,301
2042	27,358	1,997	7,075	3,956	308	223	0	40,917
2043	27,798	2,022	7,170	4,026	308	223	0	41,547
2044	28,265	2,047	7,266	4,095	308	223	0	42,205
2045	28,705	2,070	7,364	4,164	308	223	0	42,834
2046	29,157	2,093	7,463	4,233	308	223	0	43,478
2047	29,613	2,115	7,564	4,302	308	223	0	44,126
2048	30,077	2,137	7,667	4,371	308	223	0	44,783
2049	30,553	2,160	7,771	4,440	308	223	0	45,455
2050	31,041	2,182	7,877	4,510	308	223	0	46,140

Projected Sales/Service (GPD)

YEAR	RES	MFR	COM	GOV	IND	OTH	IRR	TOT
2020	427	1,399	1,523	2,480	4,340	2,831	0	573
2021	419	1,364	1,513	2,465	4,340	2,831	0	564
2022	419	1,354	1,504	2,452	4,340	2,831	0	563
2023	418	1,346	1,495	2,439	4,340	2,831	0	562
2024	418	1,338	1,487	2,427	4,340	2,831	0	560
2025	418	1,331	1,479	2,415	4,340	2,831	0	559
2026	417	1,324	1,471	2,403	4,340	2,831	0	558
2027	416	1,317	1,464	2,392	4,340	2,831	0	556
2028	414	1,311	1,457	2,381	4,340	2,831	0	554
2029	414	1,305	1,450	2,371	4,340	2,831	0	552
2030	413	1,300	1,443	2,360	4,340	2,831	0	551
2031	412	1,296	1,438	2,352	4,340	2,831	0	550
2032	411	1,292	1,433	2,345	4,340	2,831	0	548
2033	411	1,289	1,428	2,337	4,340	2,831	0	547
2034	411	1,286	1,424	2,329	4,340	2,831	0	547
2035	410	1,283	1,419	2,322	4,340	2,831	0	546
2036	409	1,280	1,414	2,314	4,340	2,831	0	544
2037	408	1,277	1,410	2,307	4,340	2,831	0	542
2038	407	1,275	1,406	2,300	4,340	2,831	0	541
2039	406	1,272	1,401	2,293	4,340	2,831	0	540
2040	405	1,270	1,397	2,286	4,340	2,831	0	538
2041	404	1,268	1,393	2,279	4,340	2,831	0	537
2042	404	1,266	1,389	2,272	4,340	2,831	0	536
2043	404	1,265	1,385	2,265	4,340	2,831	0	535
2044	404	1,264	1,381	2,258	4,340	2,831	0	535
2045	403	1,262	1,377	2,252	4,340	2,831	0	534
2046	403	1,261	1,373	2,245	4,340	2,831	0	533
2047	403	1,260	1,369	2,238	4,340	2,831	0	533
2048	402	1,258	1,365	2,232	4,340	2,831	0	532
2049	402	1,257	1,361	2,225	4,340	2,831	0	531
2050	402	1,257	1,357	2,218	4,340	2,831	0	531

Projected Production (AF)

YEAR	SALES	NRW	PROD	% NRW	NRW GPD/Svc
2020	29,229	923	30,152	3.1%	18
2021	29,365	957	30,322	3.2%	18
2022	29,853	992	30,844	3.2%	19
2023	30,363	1,028	31,390	3.3%	19
2024	30,886	1,064	31,950	3.3%	19
2025	31,418	1,102	32,520	3.4%	20
2026	31,927	1,140	33,067	3.4%	20
2027	32,407	1,179	33,587	3.5%	20
2028	32,902	1,220	34,121	3.6%	21
2029	33,434	1,261	34,696	3.6%	21
2030	33,971	1,304	35,276	3.7%	21
2031	34,547	1,329	35,876	3.7%	21
2032	35,089	1,353	36,443	3.7%	21
2033	35,695	1,378	37,074	3.7%	21
2034	36,288	1,404	37,692	3.7%	21
2035	36,881	1,429	38,310	3.7%	21
2036	37,429	1,454	38,884	3.7%	21
2037	37,975	1,480	39,456	3.8%	21
2038	38,558	1,506	40,064	3.8%	21
2039	39,121	1,532	40,654	3.8%	21
2040	39,699	1,559	41,258	3.8%	21
2041	40,301	1,586	41,887	3.8%	21
2042	40,917	1,613	42,530	3.8%	21
2043	41,547	1,640	43,187	3.8%	21
2044	42,205	1,668	43,873	3.8%	21
2045	42,834	1,695	44,529	3.8%	21
2046	43,478	1,723	45,201	3.8%	21
2047	44,126	1,752	45,877	3.8%	21
2048	44,783	1,780	46,563	3.8%	21
2049	45,455	1,808	47,263	3.8%	21
2050	46,140	1,837	47,978	3.8%	21

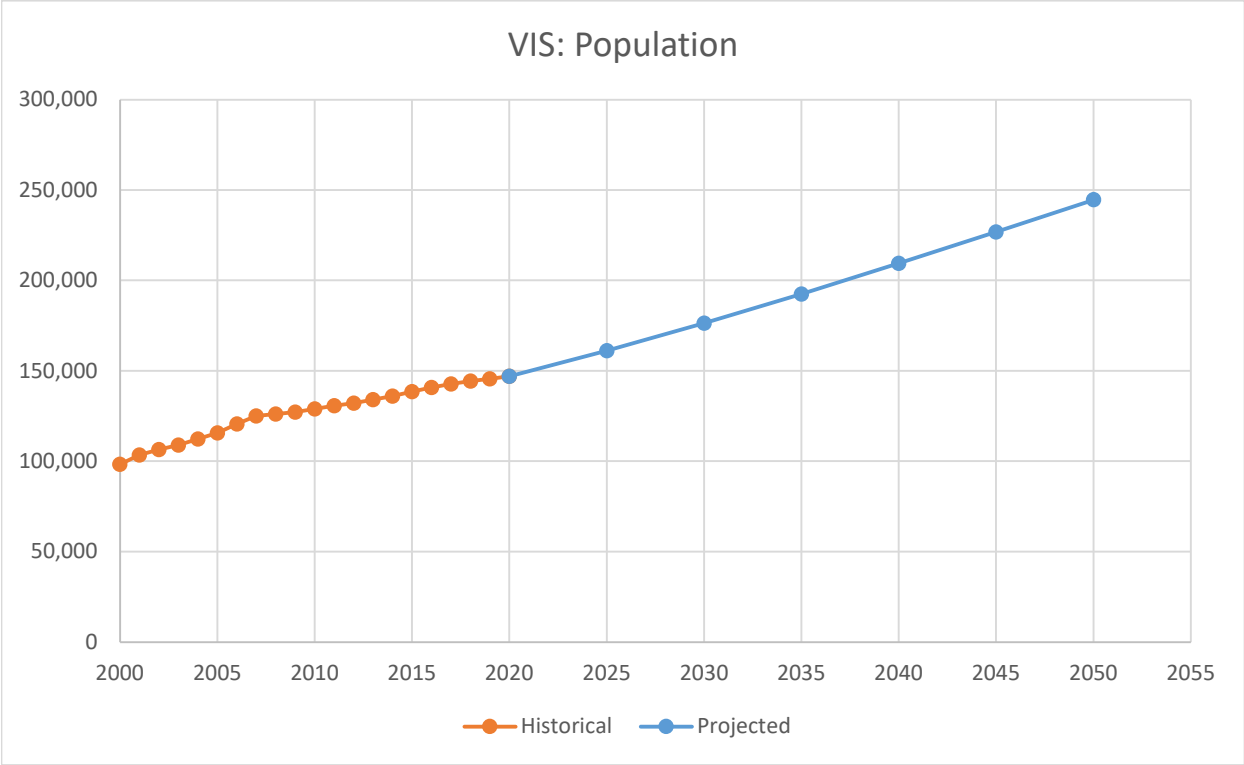
Projected GPCD

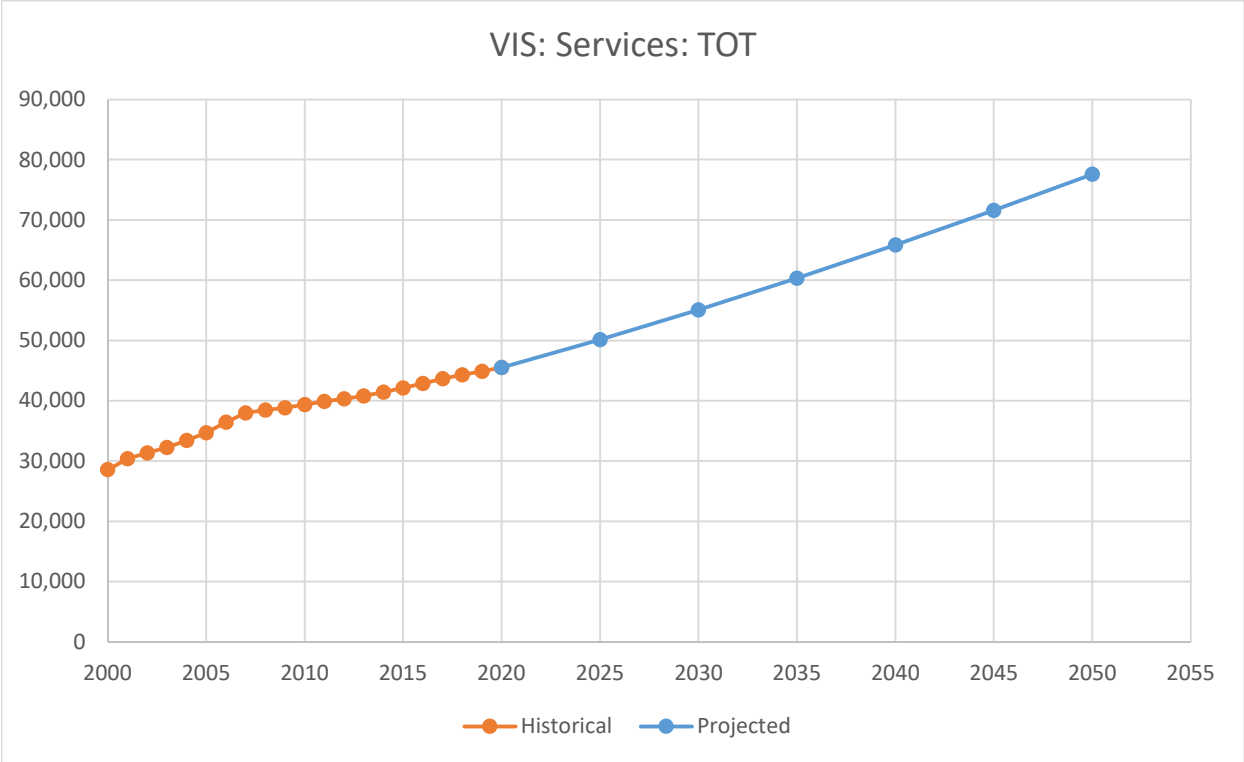
		GPCD	
YEAR	POPULATION	RESIDENTIAL	TOTAL
2020	147,032	131	183
2021	149,830	128	181
2022	152,577	128	180
2023	155,368	128	180
2024	158,201	128	180
2025	161,087	128	180
2026	164,002	128	180
2027	166,968	127	180
2028	170,002	127	179
2029	173,106	127	179
2030	176,265	126	179
2031	179,462	126	178
2032	182,686	126	178
2033	185,935	126	178
2034	189,210	126	178
2035	192,510	126	178
2036	195,839	125	177
2037	199,198	125	177
2038	202,583	125	177
2039	205,994	124	176
2040	209,431	124	176
2041	212,889	124	176
2042	216,366	124	175
2043	219,852	124	175
2044	223,347	124	175
2045	226,850	124	175
2046	230,367	124	175
2047	233,901	124	175
2048	237,452	124	175
2049	241,025	124	175
2050	244,623	124	175

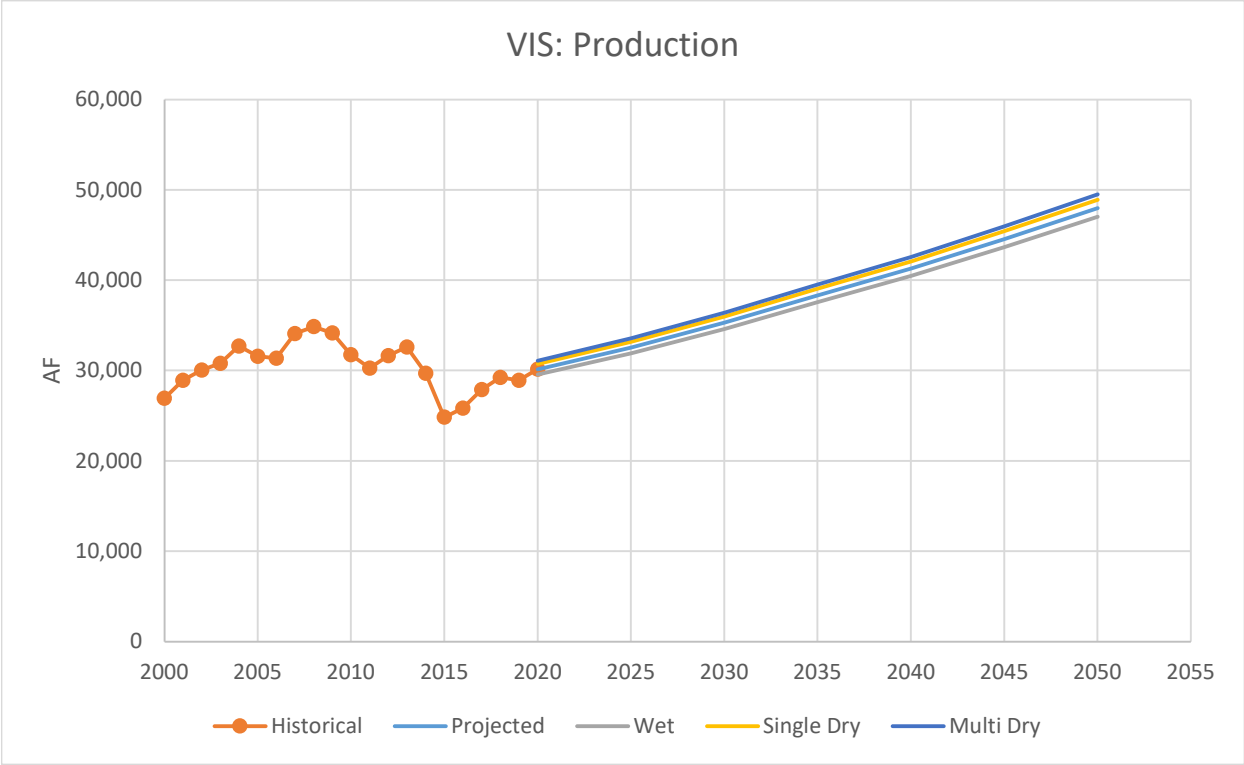
Normal, Single-Year, and Multi-Year Dry Year Demand (AF)

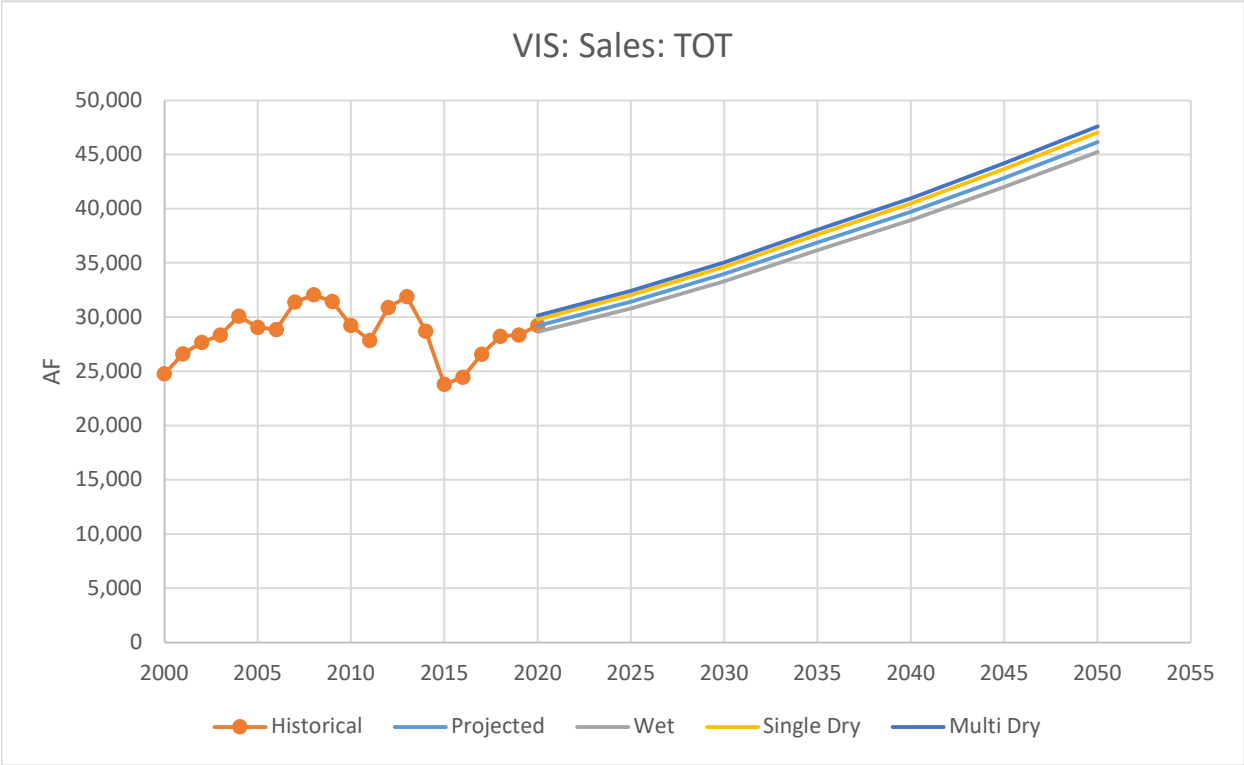
YEAR		NORMAL		SINGLE DRY YEAR	% OF NORMAL		MULTI DRY YEAR	% OF NORMAL
2020		30,152		30,738	102%		31,100	103%
2021		30,322		30,910	102%		31,274	103%
2022		30,844		31,443	102%		31,813	103%
2023		31,390		31,999	102%		32,376	103%
2024		31,950		32,570	102%		32,954	103%
2025		32,520		33,152	102%		33,543	103%
2026		33,067		33,710	102%		34,108	103%
2027		33,587		34,240	102%		34,644	103%
2028		34,121		34,785	102%		35,196	103%
2029		34,696		35,371	102%		35,789	103%
2030		35,276		35,962	102%		36,387	103%
2031		35,876		36,575	102%		37,007	103%
2032		36,443		37,153	102%		37,592	103%
2033		37,074		37,796	102%		38,243	103%
2034		37,692		38,426	102%		38,881	103%
2035		38,310		39,057	102%		39,520	103%
2036		38,884		39,642	102%		40,111	103%
2037		39,456		40,225	102%		40,701	103%
2038		40,064		40,846	102%		41,330	103%
2039		40,654		41,447	102%		41,938	103%
2040		41,258		42,063	102%		42,562	103%
2041		41,887		42,704	102%		43,210	103%
2042		42,530		43,361	102%		43,874	103%
2043		43,187		44,031	102%		44,553	103%
2044		43,873		44,730	102%		45,260	103%
2045		44,529		45,400	102%		45,939	103%
2046		45,201		46,085	102%		46,632	103%
2047		45,877		46,775	102%		47,330	103%
2048		46,563		47,474	102%		48,038	103%
2049		47,263		48,189	102%		48,761	103%
2050		47,978		48,917	102%		49,499	103%

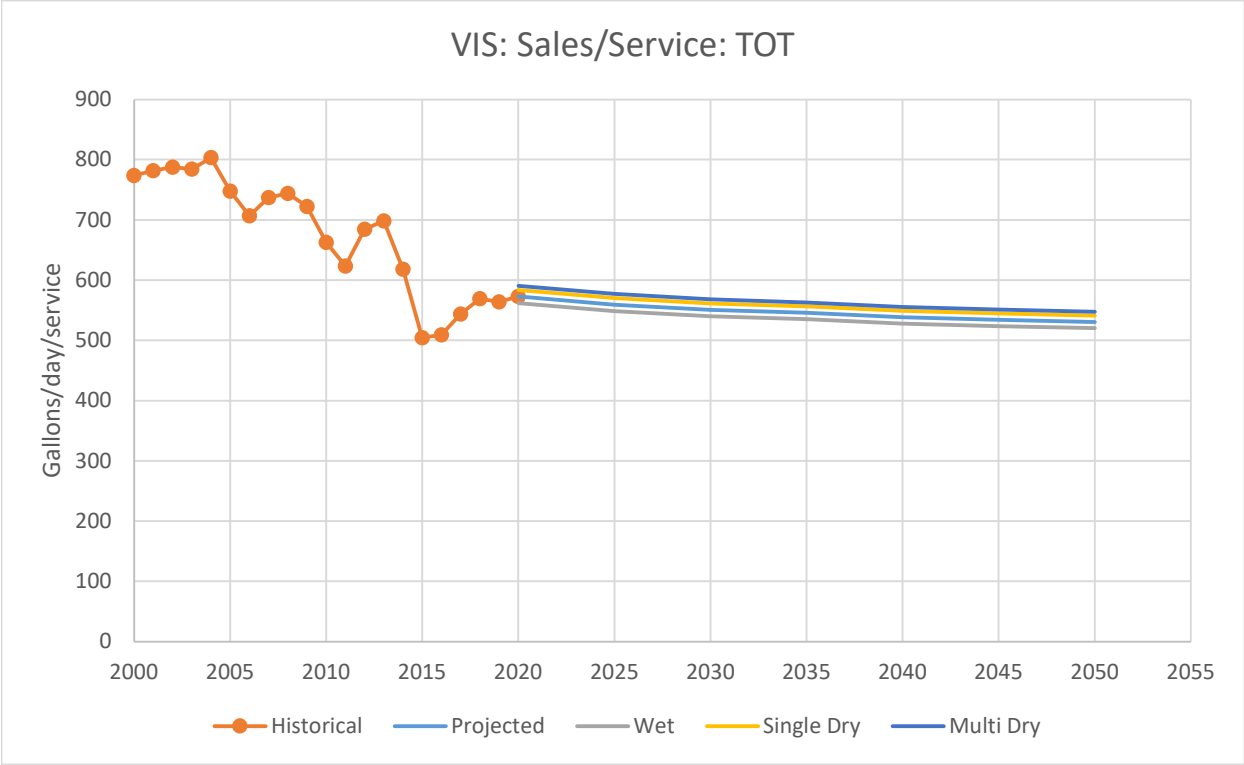
Charts

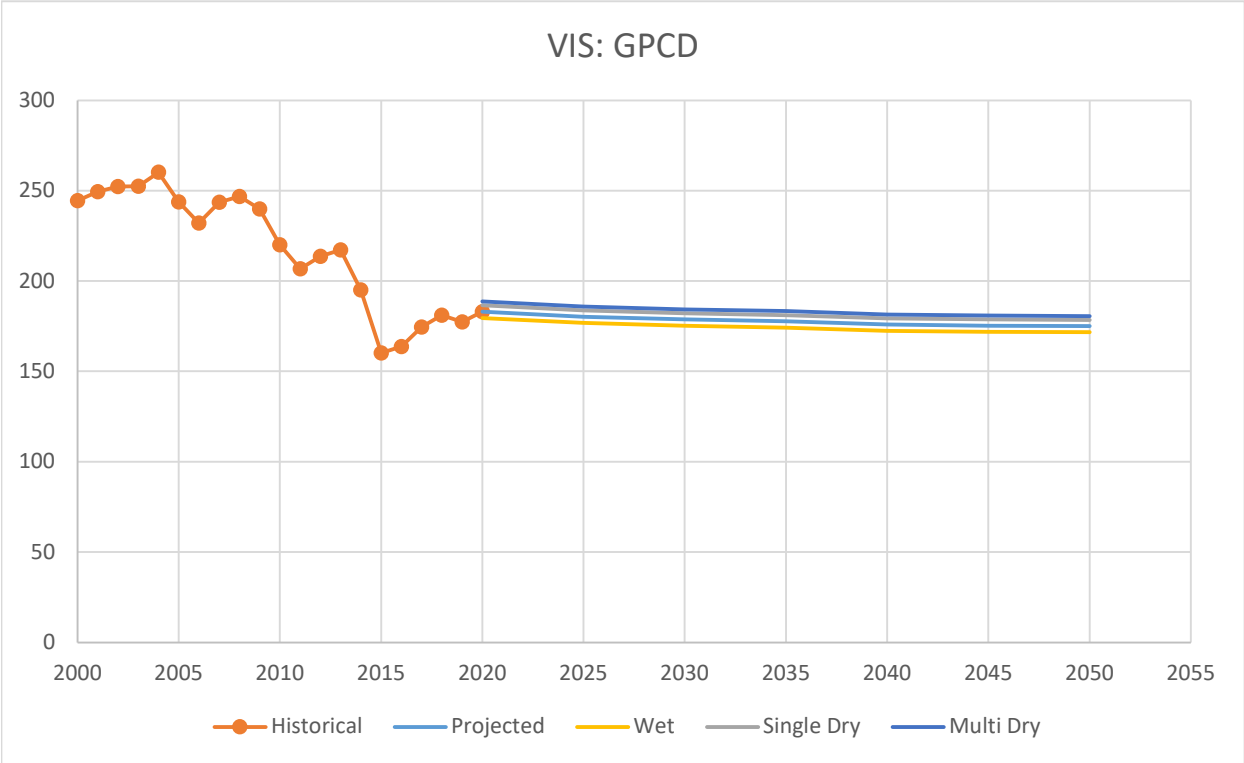

VIS: Population
300,000
250,000
200,000
150,000
100,000
50,000
0
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
Historical
Projected


VIS: Services: TOT
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
Historical
Projected


VIS: Production
AF
60,000
50,000
40,000
30,000
20,000
10,000
0
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
Historical
Projected
Wet
Single Dry
Multi Dry


VIS: Sales: TOT
AF
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
Historical
Projected
Wet
Single Dry
Multi Dry


VIS: Sales/Service: TOT
Gallons/day/service
900
800
700
600
500
400
300
200
100
0
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
Historical
Projected
Wet
Single Dry
Multi Dry


VIS: GPCD
300
250
200
150
100
50
0
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
Historical
Projected
Wet
Single Dry
Multi Dry

Appendix E: DWR SB X7-7 Verification Forms

Water Conservation Act of 2009
SB X7-7
Verification Forms

Visalia District

2020 Urban Water Management Plan
Appendix E

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	34,848	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1999	
	Year ending baseline period range[3]	2008	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2003	
	Year ending baseline period range[4]	2007	

[1] If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period. *[2] The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.*

[3] The ending year must be between December 31, 2004 and December 31, 2010.

[4] The ending year must be between December 31, 2007 and December 31, 2010.

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☑	**4. Other** DWR recommends pre-review

NOTES: Cal Water uses a population estimation methodology based on overlaying Census Block data from the 2000 and 2010 Censuses with the District's service area. LandView 5 and MARPLOT software are used with these data to estimate population per dwelling unit for 2000 and 2010. The per dwelling unit population estimates are then combined with Cal Water data on number of dwelling units served to estimate service area population for non-Census years. Cal Water also estimated service area population using DWR's Population Tool. The estimates prepared using Cal Water's methodology and DWR's Population Tool were within one percent. Cal Water is electing to use the population estimates produced by its methodology in order to maintain consistency with population projections it has prepared in other planning documents and reports.

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1999	95,989
Year 2	2000	98,325
Year 3	2001	103,510
Year 4	2002	106,382
Year 5	2003	108,946
Year 6	2004	112,207
Year 7	2005	115,674
Year 8	2006	120,590
Year 9	2007	124,972
Year 10	2008	126,088
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2003	108,946
Year 2	2004	112,207
Year 3	2005	115,674
Year 4	2006	120,590
Year 5	2007	124,972
2015 Compliance Year Population		
2015		138,404

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual Gross Water Use**
			Exported Water	**Change in Dist. System Storage** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use**	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1999	26,509			-		-	26,509
Year 2	2000	26,921			-		-	26,921
Year 3	2001	28,915			-		-	28,915
Year 4	2002	30,065			-		-	30,065
Year 5	2003	30,810			-		-	30,810
Year 6	2004	32,700			-		-	32,700
Year 7	2005	31,576			-		-	31,576
Year 8	2006	31,352			-		-	31,352
Year 9	2007	34,101			-		-	34,101
Year 10	2008	34,848			-		-	34,848
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**30,780**
5 Year Baseline - Gross Water Use								
Year 1	2003	30,810			-		-	30,810
Year 2	2004	32,700			-		-	32,700
Year 3	2005	31,576			-		-	31,576
Year 4	2006	31,352			-		-	31,352
Year 5	2007	34,101			-		-	34,101
5 year baseline average gross water use								**32,108**
2015 Compliance Year - Gross Water Use								
2015		24,847	-		-		-	**24,847**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)
Complete one table for each source.

Name of Source	Wells
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1999	26,509		26,509
Year 2	2000	26,921		26,921
Year 3	2001	28,915		28,915
Year 4	2002	30,065		30,065
Year 5	2003	30,810		30,810
Year 6	2004	32,700		32,700
Year 7	2005	31,576		31,576
Year 8	2006	31,352		31,352
Year 9	2007	34,101		34,101
Year 10	2008	34,848		34,848
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2003	30,810		30,810
Year 2	2004	32,700		32,700
Year 3	2005	31,576		31,576
Year 4	2006	31,352		31,352
Year 5	2007	34,101		34,101
2015 Compliance Year - Water into Distribution System				
2015		24,847		24,847

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1999	95,989	26,509	247
Year 2	2000	98,325	26,921	244
Year 3	2001	103,510	28,915	249
Year 4	2002	106,382	30,065	252
Year 5	2003	108,946	30,810	252
Year 6	2004	112,207	32,700	260
Year 7	2005	115,674	31,576	244
Year 8	2006	120,590	31,352	232
Year 9	2007	124,972	34,101	244
Year 10	2008	126,088	34,848	247
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**247**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2003	108,946	30,810	252
Year 2	2004	112,207	32,700	260
Year 3	2005	115,674	31,576	244
Year 4	2006	120,590	31,352	232
Year 5	2007	124,972	34,101	244
5 Year Average Baseline GPCD				**246**
2015 Compliance Year GPCD				
2015		138,404	24,847	**160**

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	247
5 Year Baseline GPCD	246
2015 Compliance Year GPCD	160

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
247	**198**

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
246	234	198	**198**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

Appendix F: Climate Change Studies – Executive Summaries

- Climate Change – Water Resource Monitoring and Adaptation Plan – Phase 1
- Potential Climate Change Impacts on the Water Supplies of California Water Service

Climate Change-Water Resource Monitoring and Adaptation Plan – Phase 1

December 17, 2020

California Water Service
1720 North First Street
San Jose, CA 95112

Submitted by:
ICF
555 W 5th St
Suite 3100
Los Angeles, CA 90013

Executive Summary

Shifts in the frequency and severity of natural hazards resulting from climate change, often referred to as climate hazards, increasingly threaten water resources in California. These relevant climate hazards include reductions to snowpack, greater concentrations of precipitation in both a shorter rain season and isolated atmospheric river events, and more volatility between wet and dry water years.

To identify and prepare for impacts from these hazards, California Water Service (Cal Water) is seeking to identify climate change vulnerabilities to water supplies, operations and facilities, and to develop adaptation strategies to address those vulnerabilities through a Climate Change Water Resources Monitoring and Adaptation Plan. This body of work is intended to provide Cal Water with information to inform decisions on water system/asset management and resource planning to better prepare for and respond to current and projected changes to climate. This work represents a forward-looking approach in addressing climate risks for California utilities, as the large majority of water wholesaler and utilities have not completed climate vulnerability and adaptation plans.

In the first phase of this effort, the ICF team collaborated with Cal Water to conduct a literature and tools review as the foundation for subsequent phases of work. In Phase 2 of this project, the ICF team and Cal Water will undertake a vulnerability assessment of Cal Water's facilities and operations by developing an assessment approach that evaluates climate impacts to Cal Water, identifies asset vulnerabilities, and prioritizes climate risks. Phase 3 will focus on an assessment of climate-driven impacts to water supply resources and demand. This first phase of research and assessment will provide Cal Water with a clear "lay of the land" in understanding available methodologies and lessons learned in conducting vulnerability assessments and developing adaptation plans in the water sector. This work can provide key insights for Cal Water, industry practitioners, and Cal Water customers on best practices and needs in climate vulnerability and adaptation efforts.

This first phase will also act as a foundation for Cal Water to build on in subsequent phases of work. ICF and Cal Water will build on research and findings developed in Phase 1 to define the scope of Phases 2 and 3.

In Phase 1, the ICF team undertook three areas of review:

1) Literature and tools related to adaptation planning by water suppliers and other relevant organizations
2) Methods and data in Cal Water's 2016 Vulnerability Study "Potential Climate Change Impacts on the Water Supplies of California Water Service"
3) Climate change impact assessments and adaptation plans beyond Cal Water (wholesalers, state agencies) that could affect Cal Water's vulnerability or adaptive capacity

In the first part of our assessment, the studies we reviewed conclude that there is high certainty of climate-driven reductions to snowpack, wetter winter months, and more volatility between wet and dry water years. While California water systems are designed to operate under a wide

range of hydrologic conditions, they are not designed to absorb and adapt to the projected levels of change, which could have impacts on historical supplies from reservoir systems and groundwater systems. These studies also revealed a suite of potential approaches to vulnerability assessment and risk assessment that are applicable to Phases 2 and 3.

Key studies that the ICF team referenced include Brown and Caldwell's "Impacts of Climate Change on Honolulu Water Supplies and Planning Strategies for Mitigation", the Water Research Foundation's (WRF)'s "Mapping Climate Exposure and Climate Information Needs to Water Utility Business Functions", the Metropolitan Water District's (MWD)'s "2015 Integrated Water Resources Plan" and "2015 Urban Water Management Plan", and the U.S. Environmental Protection Agency's (EPA's) Climate Resilience Evaluation and Awareness Toolkit (CREAT).

In the second part of our review, we found that Cal Water's 2016 Climate Change Vulnerability Study undertook a high-level investigation of impacts of climate change on water supply, including surface water, groundwater, and imported water throughout Cal Water service areas. However, the study did not use uniform metrics across water suppliers, was unable to apply the currently available downscaled climate projections, and did not consider the full suite of potential climate impacts to Cal Water's systems, including impacts of compounding climate hazards and impacts on Cal Water facilities and operations.

In the third part of this work, the ICF team researched and assessed existing climate vulnerability assessments and adaptation efforts that have an impact on Cal Water's ability to mitigate impacts from climate change. This included efforts by water supply wholesalers connected to Cal Water's system, and state agencies that regulate Cal Water's supplies, operations, and planning efforts. This will allow Cal Water to build on existing actions and avoid recreating adaptation efforts that are planned or have been implemented.

Cal Water has undertaken key steps toward adaptation planning since the 2016 Vulnerability Study, such as this work to provide additional vulnerability analysis, working locally to identify and prepare to meet Sustainable Groundwater Management Act (SGMA) requirements, and coordinating with wholesalers on their identified climate-driven vulnerabilities. Phases 2 and 3 of this work will further frame system vulnerabilities within an adaptation planning context for a flexible and anticipatory response.

The ICF team's literature review focused on identifying approaches for assessing water utility vulnerabilities of assets and water resources, and adaptation planning needs (summarized in Table 1). To identify these priority approaches, the team reviewed a list of publications with input from Cal Water on key sources. We reviewed and analyzed the relevant literature for applicability to Cal Water, the advantages and fit within a robust plan for assessment, and the potential disadvantages. We highlighted those approaches in the sections on key takeaways and the applicability of approaches to Cal Water. Table 1 provides important considerations raised by the ICF team during this process.

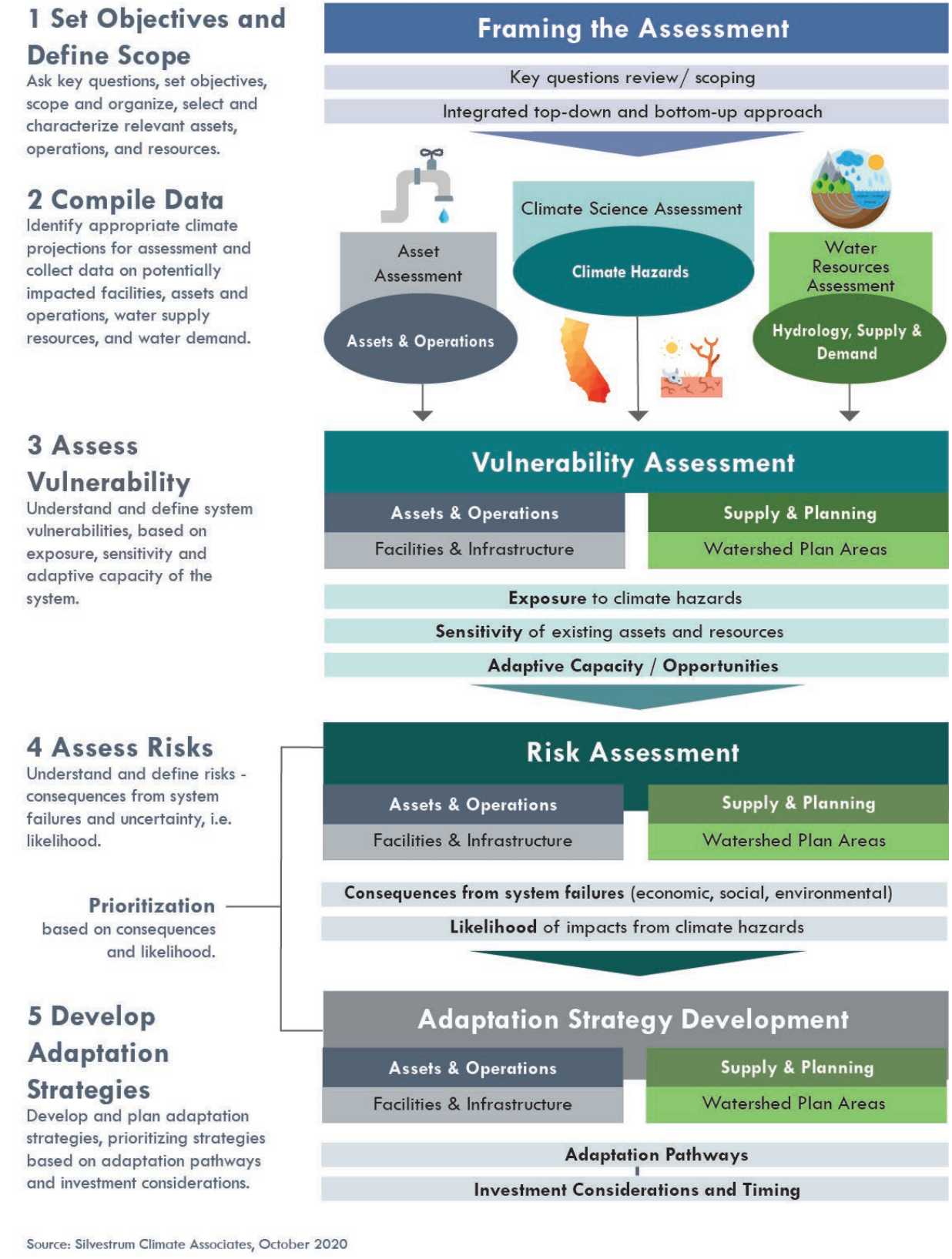
Table 1: Advantages and disadvantages of identified approaches

Identified Approach	Advantages	Disadvantages
Integrated resource-level (i.e., top-down) and asset-level (i.e., bottom-up) approaches to vulnerability assessment	• Allows for matching available information with appropriate methodologies • Supports evaluation of vulnerabilities in both water supply resources and physical systems: an integrated approach can help to address gaps in either area	• Bottom-up approaches can require extensive historical data and asset-level data • Integration of climate projections into hydrological models can be challenging. For example, data inputs for hydrological models and the outputs from climate projections may be incompatible or require additional data processing
Robust Decision-Making	• Supports identification of decisions for response under a range of potential climate futures • Supports alignment between climate impacts and operating units/business functions • Ensures the scope focuses on critical services, assets, and resources • Supports the development of adaptation pathways and measures • Provides a framework for information that can signal the need for critical decisions on adaptation	• Involves significant investment of time to identify performance metrics, business functions, and key variables • Even with significant time invested on the front end, scope can change and require rescoping later in the effort • Requires a strong understanding of utility decision-making
Applying climate projections to hydrologic modeling, future demand and planning scenarios	• Generates better understanding of impacts of extreme scenarios, snowpack loss, drought, increased temperatures, precipitation whiplash, and other hydrologic changes in water supply resources and downstream demands • Allows for modeling of a range of climate scenarios to better account for uncertainties in resource management and climate outcomes • Integrates climate projections with scaled historical time series data	• Can require substantial data, and may introduce bias (due to selected climate scenarios) • It is necessary to identify performance metrics and thresholds related to available climate variables; these can be difficult to identify and thresholds may not exist • Relies on necessary simplifying assumptions to model complex hydrologic systems
Stress testing and scenarios	• Supports management of uncertainty, especially in the absence of data • Allows for understanding of climate impacts on system performance within a risk framework	• Can require refined climate information (e.g. hydrological variables) and detailed asset information • Can require the integration of climate information into hydrological models, which may require

Identified Approach	Advantages	Disadvantages
	• Supports identification of major performance metrics and their potential for failure • Helps in understanding how the severity of impacts varies for facilities, operations, and water supplies under different climate change conditions.	significant data processing to be compatible with one another • Can result in qualitative or directional findings that don't provide straightforward adaptation responses
Engaging staff in climate change vulnerability assessments and adaptation plans	• Provides perspective for setting study parameters • Provides targeted input and data into assessment • Identifies existing data gaps and actions to address gaps • Supports development of institutional capacity for monitoring impacts, adaptation planning, and implementation	• Can be time-consuming for team members attending workshops and interviews; requires a targeted approach to ensure efficiency and that the right data is captured • Requires cross-team coordination that may be outside of "normal" communication pathways, e.g. between engineers and policy specialists
Evaluating costs of inaction	• Helps to prioritize adaptation planning needs • Creates a better understanding of the risks to Cal Water	• Requires scaling information on past costs without clear data on future impacts, creating uncertainties in estimates
Use of Flexible Adaptation Pathways	• Helps to select appropriate timing (including lead time from planning to implementation) and application of adaptation measures • Considers and compares multiple strategies in adaptation planning • Includes triggers that signal when decision-makers should decide on switching to another pathway • Allows for adaptive decisions under uncertainty by integrating points for re-assessing pathway and actions • Considers alternative external developments over time	• Does not provide a fixed timeline for actions • This approach is relatively new and may require coordination with budget cycles and external policy updates, since actions evolve over time • May push decision burden onto future decision-makers who did not develop original pathway

Our team synthesized these identified methodologies, findings, and insights into an overarching approach for characterizing climate vulnerabilities and planning for adaptation at both an asset level and water supply planning level to suit Cal Water's needs in addressing climate change impacts, shown in Figure 1.

Figure 1: Climate Assessment Framework



Source: Silvestrum Climate Associates, October 2020

Based on this review, the ICF team is making the following key recommendations for guiding Cal Water's efforts in identifying climate vulnerabilities and planning for adaptation:

- **Apply a standard conceptual framework to vulnerability assessment which integrates both top-down analysis and bottom-up analysis (see Figure 1).** The standard conceptual framework for assessing climate vulnerabilities and risks includes understanding exposure, sensitivity, and adaptive capacity, and potential impacts as components of vulnerability, and consequence and likelihood as components of risk. Top-down analysis would begin by applying downscaled Global Climate Model (GCM) projections to assess impacts on water supply resources and the bottom-up analysis would begin by identifying system sensitivities to climate hazards. These analyses are complementary.
- **Use a robust decision making (RDM) framework for vulnerability assessment and adaptation planning** by seeking to identify decisions for response under a range of potential climate futures, mapping impacts on operating units/business functions, and ensuring that the scope focuses on critical services, assets, and resources. A robust decision-making framing will support the development of adaptation pathways and measures by monitoring information that signals the need for critical decisions on adaptation.
- **Engage staff and key stakeholders in the planning process** to gain a holistic planning perspective for setting study parameters, providing targeted input into assessment and plan development, and supporting institutional capacity for adaptation.
- **Build off of the 2016 Cal Water Climate Change Impact study by applying updated climate models and projections for additional hydrologic variables** to hydrologic modeling, future demand and planning scenarios, and scaled historical time series data to better understand impacts of extremes, precipitation whiplash, and other hydrologic changes in water supply resources. We recommend presentation of this with uniform metrics for more actionable findings.
- **Assess climate impact consequence by stress-testing key water system performance metrics.** This includes developing a range of impact scenarios to understand how the severity of impacts varies for facilities, operations, and water supplies under different climate change conditions.
- **Evaluating the order of magnitude cost of inaction.** We recommend communicating consequences in terms of direct costs to Cal Water and customers without adaptation actions to prioritize adaptation response.
- **Follow a step-by-step, iterative process to adaptive management which fully aligns with potential exposure to climate hazards and vulnerabilities**, including:
    - Utilizing Flexible Adaptation Pathways in planning for selecting appropriate timing and application of adaptation measures
    - Planning for monitoring and evaluation
    - Evaluating adaptation investment decisions

During Phases 2 and 3 in which Cal Water and the ICF team will further assess vulnerability, we will frame the study outputs within a decision-making context for compatibility with adaptation planning concepts and eventual investment in adaptation measures.

Potential Climate Change Impacts on the Water Supplies of California Water Service

Prepared by

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Balance Hydrologics, Inc.

January 2016

Executive Summary

Introduction

California Water Service Company (Cal Water) provides water service to roughly 478,000 customers – about 1.7 million people – located in 83 state-wide communities in 24 service districts. Cal Water's districts rely on a variety of supply sources, including local groundwater, local surface water, and imported supplies. It is critical for Cal Water to gain a better understanding of the potential impacts of climate change on the availability of those supplies. Impacts are inherently uncertain, but Cal Water believes that the only responsible course is to carefully incorporate climate change into its ongoing water supply planning.

The present project and report represent a first step in that path. In order for Cal Water to determine how its long-term water supply planning should reflect climate change impacts, it must first have an understanding of what the impacts of climate change on its supply sources might be. That is the purpose of this study.

The work reported on here focuses on the sample of Cal Water districts highlighted in Figure ES-1. These districts account for 85% of Cal Water's total 2014 production and reflect the diversity of all Cal Water districts, including geographic, hydrologic, and climatic conditions and primary and secondary supply sources.

Changes in climate can affect the availability of local groundwater and surface water supplies, as well as purchased imported supplies. This study separately addresses the impacts on each of these for each sample district. It relies on the best available projections of changes in climate (temperature and precipitation) through the end of the century. It then uses the climate projections to examine how surface water flows and groundwater recharge rates may change.

For imported supplies, this study relies on studies already completed by wholesale providers where possible. Where no such studies have been done or where the data from such studies was unavailable, other approaches were developed to estimate climate change impacts on these supplies.

The results reported here provide an integrated view of how projected climate changes may affect water supply availability for Cal Water's service districts. The results also represent a first step in integrating potential future climate change impacts into Cal Water's ongoing supply planning. Because of the inherent uncertainties, a nuanced risk assessment may be needed to guide the incorporation of these results into long-range planning. Beyond the Company's supply/infrastructure planning, the results also can affect the Company's triennial General Rate Cases; they may also have potential operational implications.

Figure ES- 1. Cal Water Service Districts with Sample Districts Highlighted

Estimating Changes in Climate

Climate change is primarily driven by increased concentrations of greenhouse gases (GHGs) in the atmosphere. The trajectory of future climate change is a function of the rate at which those concentrations are projected to increase and the manner in which the atmosphere and oceans respond to increased concentrations. Both are difficult to model. Thus, while the scientific community overwhelmingly agrees that climate change will occur (and indeed may already have begun), the trajectory of those changes is very uncertain.

The projections of temperature and precipitation that underlie this study are based on 40 of the latest Global Circulation Models (GCMs) run as part of the Coupled Model Intercomparison Project Phase 5 (CMIP5). Generally speaking, this type of approach is termed an ensemble analysis, for which the downscaled climate projections for any particular Cal Water Service District were based on the median of the 40 downscaled GCM datasets. The GCMs used by the analysis are driven by two GHG emission pathways that bound the possible trajectories of GHG concentrations.

Impacts of Climate Change on Water Supplies

The supplies for each district consist of a mix of local surface water, local groundwater, and/or purchased imports. Climate change impacts were estimated for each of these components. The approaches used for each are described below. Based on the breakdown of district production among the supply sources, Table ES-1 shows the ranges of projected overall climate change impacts on available supply, relative to the historic average.[1] Table ES-2 groups this vulnerability into 4 categories of expected change, and Figure ES-2 maps the end-of-century vulnerability.

[1] The historical averages used here, and elsewhere in this report, are based on the entire range of historical data available for the district-specific analyses. These ranges vary across districts, and are specified within the district-specific technical memoranda.

Table ES- 1. Projected Changes in Available Supply due to Climate Change

District		Percentage Change in Supply		
		2020	2050	2100
BK	Minimum	-10%	-10%	-12%
	Maximum	-12%	-16%	-20%
VIS	Minimum	-7%	-8%	-8%
	Maximum	-9%	-10%	-14%
KRV	Minimum	-13%	-16%	-19%
	Maximum	-16%	-21%	-31%
MPS/SSF/BG	Minimum	0%	-2%	-6%
	Maximum	0%	-7%	-15%
LAS	Minimum	-3%	-3%	-10%
	Maximum	-4%	-18%	-28%
CH	Minimum	2%	2%	0%
	Maximum	3%	1%	-3%
ORO	Minimum	0%	8%	5%
	Maximum	0%	-8%	-7%
DOM/HR/PV	Minimum	0%	0%	-1%
	Maximum	0%	-2%	-3%
STK	Minimum	0%	0%	-8%
	Maximum	0%	-14%	-17%
SLN	Minimum	-6%	-6%	-6%
	Maximum	-7%	-7%	-7%

Table ES- 2. Categories of Projected Supply Vulnerability

District	Supply Vulnerability		
	2020	2050	2100
KRV	3	4	4
BK	3	3	4
LAS	1	3	4
VIS	2	2	3
STK	1	2	3
SLN	2	2	2
MPS/SSF/BG	1	1	3
DOM/HR/PV	1	1	1
ORO	1	1	1
CH	1	1	1

Districts in Category 1 expect <5% reduction in supply. Category 2 indicates a reduction of 5-10%. Category 3 indicates an expected reduction of 10-15%. Category 4 reductions exceed 15%.

Figure ES- 2. Cal Water 2100 Vulnerability to Climate Change

Vulnerability levels:
Green = Low
Yellow = Moderate
Light Red = High
Dark Red = Very High

Estimating Climate Change Impacts on Local Surface Supplies

For those Cal Water districts that obtain a portion of their water supplies from local surface water, projected average annual precipitation in each of three forecast years (2020, 2050, 2100) were compared to historical precipitation to estimate the projected average annual discharge for that forecast year. Table ES-3 shows the estimated percent changes in surface water availability compared to historical averages.

Table ES- 3. Estimated Impacts on Local Surface Supply Availability

District		Percent Change in Runoff		
		2020	2050	2100
BK	Minimum Impact	-17%	-18%	-19%
	Maximum Impact	-18%	-19%	-23%
KRV	Minimum Impact	-17%	-18%	-19%
	Maximum Impact	-18%	-19%	-23%
MPS/SSF/BG	Minimum Impact	+3%	+6%	+12%
	Maximum Impact	+3%	+5%	+6%

Of the three districts, the two in the southern San Joaquin Valley are projected to experience significant reductions in their local surface supplies. In contrast, the Bear Gulch district surface supply is forecast to increase.

Estimating Climate Change Impacts on Local Groundwater Supplies

Climate change impacts on Cal Water's local groundwater supplies result from changes in projected groundwater recharge. The three groundwater recharge components include:

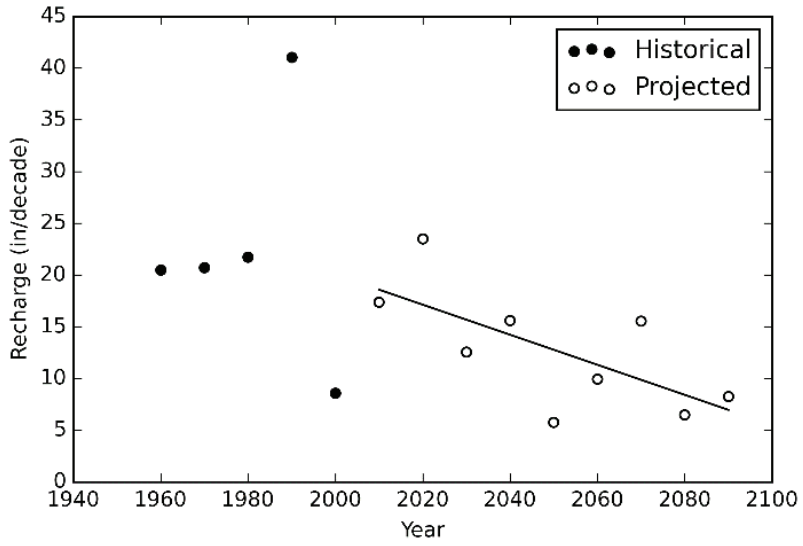
- Local river sources;
- Direct recharge from precipitation on the groundwater basin; and
- Recharge from agricultural and urban deep percolation.

The analysis first estimated the split of local recharge among these three components using geographic and geologic data, geochemical markers, and previously published reports and other supporting information. The climate change impacts on each component were then estimated, consolidated into overall projections of recharge impacts, and compared to estimated historical recharge rates.

Estimates of impacts on river recharge used the methodology for local surface supply described above. For the purposes of this phase of work, it was assumed that the change in recharge from the river is proportional to the change in total annual discharge. The estimated amount of water that will recharge directly into a groundwater basin from rain (or snow) is based on a balance of evapotranspiration (ET), precipitation rates, and soil

water capacity. Recharge is estimated using both historical and projected precipitation and temperature data. Decadal averages in projected recharge are then used to calculate long-term trends. This is illustrated in Figure ES-3 for Kern River Valley.

Figure ES- 3. Historic and Projected Decadal Direct-Precipitation Recharge for Kern River Valley



A quantitative projection of recharge from deep percolation beneath irrigated fields and urban areas is beyond the scope of this phase. Instead, districts for which a significant proportion of recharge is from agricultural and urban water are identified and expected trends under climate change of this water source for those districts are estimated. At-risk service areas with decreasing agricultural and urban water sources can be explored further in future work.

The estimated percentage impacts on each of the recharge components are multiplied by the expected fractions that each component is of total recharge to calculate the range of expected recharge reductions. Table ES-4 shows those results for each district, excluding the impacts of urban/agricultural applied water percolation.

Actual impacts on Cal Water's ability to pump groundwater may be less than these recharge reductions because the storage volumes in different basins have differing degrees of responsiveness to changes in recharge. The degree to which changes in recharge volumes translate into available groundwater supply is a function of the hydrogeologic attributes of the basin. A detailed understanding of those characteristics would require a level of modeling that is well beyond the scope of this phase of work. Instead, the estimates of basin responsiveness were based on the historical record of how the basin's water level has varied with recent climate variability. For some districts, the basin appears to be highly responsive, while for others changes in climate do not have much impact.

Table ES- 4. Projected Changes in Average Annual Groundwater Recharge

District		Percentage Change in Recharge		
		2020	2050	2100
BK	Minimum	-14%	-15%	-15%
	Maximum	-14%	-15%	-18%
VIS	Minimum	-9%	-10%	-11%
	Maximum	-9%	-10%	-14%
KRV	Minimum	-13.4%	-19%	-23%
	Maximum	-15%	-22%	-35%
MPS/SSF/BG	Minimum	-2%	-4%	-6%
	Maximum	-2%	-6%	-12%
LAS	Minimum	-7%	-8%	-13%
	Maximum	-8%	-18%	-25%
CH	Minimum	6%	4%	1%
	Maximum	6%	2%	-4%
ORO	Minimum	0%	0%	0%
	Maximum	0%	0%	0%
DOM/HR/PV	Minimum	0%	0%	0%
	Maximum	0%	0%	0%
STK	Minimum	-2%	-3%	-6%
	Maximum	-2%	-4%	-7%
SLN	Minimum	-7%	-7%	-7%
	Maximum	-7%	-7%	-7%

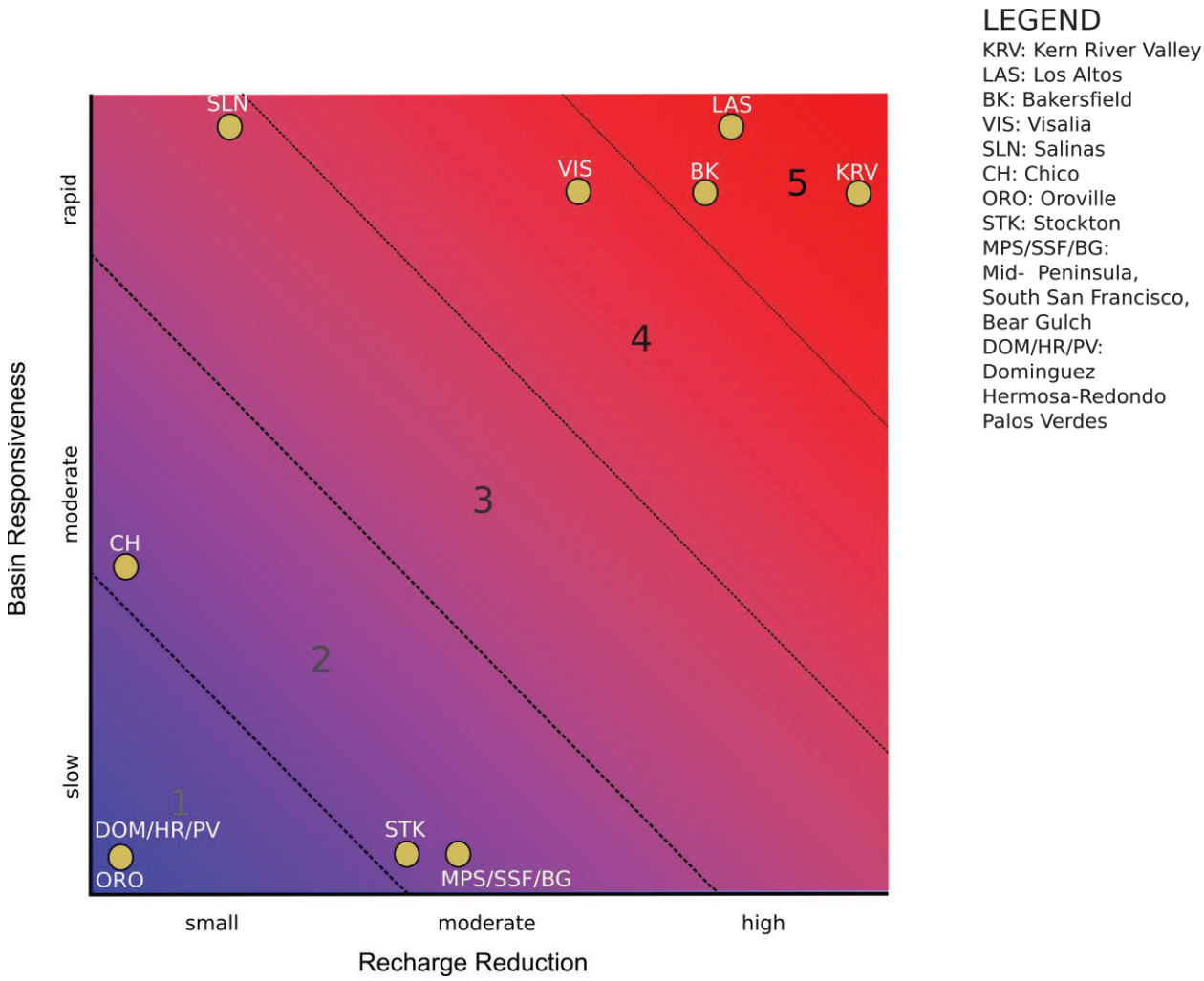
The overall risk to Cal Water's groundwater supplies for each district is based on the expected recharge reductions and the expected responsiveness of basin water level to those reductions. Table ES-5 rates each district's groundwater supply risk on a 1-5 scale, with 1 indicating little or no risk and 5 indicating high risk. Figure ES-4 is a visual depiction of these ratings.

Generally speaking, the groundwater supply impacts are large for the districts in the southern San Joaquin Valley. The Los Altos District also shows a high impact, largely because a significant portion of its recharge is from imported supplies, which are forecast to decrease significantly. Further north in the Central Valley, groundwater supplies are less affected. The Bay Area and Los Angeles Basin districts also show relatively smaller impacts.

Table ES- 5. District Groundwater Risk Ratings

District	Rating
BK	5
KRV	5
LAS	5
VIS	4
SLN	3
CH	2
MPS/SSF/BG	2
STK	2
ORO	1
DOM/HR/PV	1

Figure ES- 4. Groundwater Risk Ratings



Impacts of Climate Change on Imported Water Supplies

About half of Cal Water's supply is imported water that is purchased from wholesale suppliers. The supply and delivery systems of these suppliers are generally very complex and it is impossible within the confines of this project to independently model the impacts of climate change on those systems. The analysis therefore relied on available data, including the results of any climate change modeling that these suppliers themselves have done and other indicators of climate change impacts.

As a result, the climate change scenarios on which the estimates of impacts on different wholesale supplies are based will differ from one another and from the approach described above for the analysis of local supply impacts. The time frames of the results also differ. However, despite those limitations, important information about potential future climate change impacts on wholesale water supply availability was developed. Table ES-6 compares summary measures of central tendency for the potential district-specific climate change impacts on the availability of imported supplies.

Table ES- 6. Projected Climate Change Impacts on Imported Supplies

District	Source	Mid-Century	Late-Century
BK	SWP	-7%	-17%
LAS	SWP, CVP	-9%	-21%
ORO	SWP	-1%	-3%
MPS/SSF/BG	SFPUC	-10%	-20%
DOM/HR/PV	MWD	-1% to -2%	-2% to -5%
STK	USBR	-5%	-10%

Conclusions and Next Steps

The study results indicate significant risks for some districts. This points to the need for Cal Water to account for these risks in its future water supply planning if it is to minimize the adverse effects on its customers. The sole focus of this effort was to assess the potential climate change impacts on Cal Water's supplies. That is an important first step in integrating climate change into supply planning, but this study was not designed to:

- Analyze the impacts of these future supply limitations on Cal Water's ability to serve future customer demands. This is a function of such factors as water rights and contractual arrangements, how future demands are forecast to grow, how water conservation programming will affect those demands, and how Cal Water might modify the manner in which it operates its system.

- Develop mitigation plan to evaluate how potential supply and infrastructure investments and/or acquisition of new supplies might address any adverse impacts on water supply reliability.

- Formally assess alternative approaches to incorporating climate change in Cal Water's supply planning.

Possible next steps for Cal Water include:

- Methodological enhancements to reduce some of the uncertainties in the results reported herein;

- Development and acquisition of better and more complete data;

- Extending this study to other Cal Water districts;

- Developing a plan to mitigate anticipated climate change impacts on supply; and

- Integrating climate change into the Company's ongoing water supply planning.

Despite the study's limitations and uncertainties, three critical messages emerge:

- Cal Water supplies in the 21st century are likely to be adversely affected by climate change.

- These impacts will vary considerably across districts, depending on geography and source mix. For some districts, the impacts can be significant; for others, little or no impacts are projected.

- The impacts will generally increase over time. Anticipated late-century impacts are forecast to be significantly higher in some districts than impacts at mid-century. Moreover, during the period that climate change is forecast to increasingly constrain supplies, demands are also generally forecast to increase, further exacerbating the adverse impacts on water supply reliability.

Appendix G: Water Shortage Contingency Plan

Water Shortage Contingency Plan 2020 Update

Visalia District

June 2021

Chapter 1
Introduction

☑ ***CWC § 10640***

(a) Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

(b) Every urban water supplier required to prepare a water shortage contingency plan shall prepare a water shortage contingency plan pursuant to Section 10632. The supplier shall likewise periodically review the water shortage contingency plan as required by paragraph (10) of subdivision (a) of Section 10632 and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

☑ ***CWC § 10632.3***

It is the intent of the Legislature that, upon proclamation by the Governor of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions, the board defer to implementation of locally adopted water shortage contingency plans to the extent practicable.

This document describes the water shortage contingency plan (WSCP) for the Visalia District (also referred to herein as the "District"). The WSCP includes the stages of response to a water shortage caused by drought or by supply interruptions caused by infrastructure failure, regulatory mandate, or catastrophic human-caused or natural events. The primary objective of the WSCP is to ensure that the District has in place the necessary resources and management responses needed to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions.

Specifically, this Plan includes the following sections:

Chapter 1 - Introduction

Chapter 2 - Water Supply Reliability Analysis

Chapter 3 - Annual Water Supply and Demand Assessment Procedures

Chapter 4 - Water Shortage Levels

Chapter 5 - Shortage Response Actions

Chapter 6 - Communication Protocols

Chapter 7 - Compliance and Enforcement

Chapter 8 - Legal Authorities

Chapter 9 - Financial Consequences of WSCP

Chapter 10 - Monitoring and Reporting

Chapter 11 - WSCP Refinement Procedures

Chapter 12 - Plan Adoption, Submittal, and Availability

Chapter 2
Water Supply Reliability Analysis

☑ ***CWC § 10632 (a) (1)*** *The analysis of water supply reliability conducted pursuant to Section 10635.*

As described in Chapter 6 of the District Urban Water Management Plan (UWMP), the three Public Water Systems (PWSs) that comprise the Visalia District overlie the Kaweah Subbasin (California Department of Water Resources [DWR] Basin No. 5-022.11) and the Tule Subbasin (DWR Basin No. 5-022.13) of the San Joaquin Valley Basin. The Kaweah and Tule Subbasins are not adjudicated; however, in its recent evaluation of California's groundwater basins, DWR determined that both subbasins are in a condition of critical overdraft.[1]

Chapter 7 of the District UWMP that the groundwater supplies available to the District are considered highly reliable in extended drought conditions, and are expected to continue to be sufficient to meet projected District demands in all hydrologic conditions evaluated, including an extended five-year drought period. Although water shortage conditions are not expected to arise due to drought, this WSCP addresses potential water shortage conditions resulting from any cause (e.g., droughts, impacted distribution system infrastructure, regulatory-imposed shortage restrictions, catastrophic events, etc.).

Under SGMA, GSAs have the authority to implement projects and management actions that help basins reach their sustainability goal. As described in Chapter 6 of the District UWMP, the Visalia District falls within the jurisdiction of several Groundwater Sustainability Agencies (GSAs), the GSPs of which include various projects and management actions. These projects and management actions do not include any immediately planned groundwater pumping allocations, pumping fees, or other provisions which would be expected to impact the availability of groundwater supply to the District. If such actions are adopted in the future, Cal Water will consider them as a part of its future supply planning efforts.

[1] DWR, 2019. Sustainable Groundwater Management Act 2018 Basin Prioritization, State of California, dated January 2019.

Chapter 3
Annual Water Supply and Demand Assessment Procedures

☑ ***CWC § 10632 (a) (2)***

The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.

(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

(iii) Existing infrastructure capabilities and plausible constraints.

(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.

(v) A description and quantification of each source of water supply.

☑ ***CWC § 10632.1***

An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.

☑ ***CWC § 10632.2***

An urban water supplier shall follow, where feasible and appropriate, the prescribed procedures and implement determined shortage response actions in its water shortage contingency plan, as identified in subdivision (a) of Section 10632, or reasonable alternative actions, provided that descriptions of the alternative actions are submitted with the annual water shortage assessment report pursuant to Section 10632.1. Nothing in this section prohibits an urban water supplier from taking actions not specified in its water shortage contingency plan, if needed, without having to formally amend its urban water management plan or water shortage contingency plan.

On an annual basis, the District will conduct a Supply-Demand Assessment (SDA) to identify whether there is likely to be a water shortage condition in the coming year. This assessment will assume that the following year will experience a shortfall of 20%, corresponding to Water Shortage Level 3. Each element of the annual SDA is described below.

1. Evaluation Criteria

   The evaluation criteria that will be used to identify whether the District is likely to experience a water shortage in the coming year include:

   a. **Supply Well Operational Constraints -** A comparison of groundwater level elevations to well operational depths to identify the need to (1) lower pump depths, (2) deepen existing wells, or (3) site and drill additional supply wells.

   b. **Treatment and Distribution System Constraints -** An assessment of the probabilities of facility and infrastructure outages and the degree to which they could limit Cal Water's ability to access, convey, or treat adequate supplies, including any planned maintenance or capital improvements over the next year that could affect its ability to provide sufficient supply to meet demands.

   c. **Local Regulatory Conditions -** Evaluation of (1) any new GSA policies (e.g., pumping allocations) or sustainability criteria that could trigger a change in groundwater volume available for pumping, and (2) any new limitations on well permitting that could limit the ability to deepen existing supply wells or drill new supply wells.

   d. **State Regulatory Conditions -** Evaluation of any state-mandated drought or water use restrictions.

   These criteria will be assessed by Cal Water staff, including District staff with detailed knowledge of District operations, well conditions, and local GSA activities. The data used to support these assessments may include, but is not limited to, supply capacity, supply and pump capacity, firm capacities, tank storage capacity, groundwater level measurements, system demand, and zone demand.

2. Water Supply

   The District obtains its supplies from the Kaweah Subbasin (California Department of Water Resources [DWR] Basin No. 5-022.11) and the Tule Subbasin (DWR Basin No. 5-022.13) of the San Joaquin Valley Basin. Since these subbasins are not adjudicated and there are currently no GSA-mandated pumping limitations, the groundwater supply is assumed to be adequate to meet projected demands under all hydrologic conditions. The only identified potential constraints on water supply are the operational limitations and potential local regulatory conditions identified as evaluation criteria above.

3. Unconstrained Customer Demand

The demand forecast described in Chapter 4 of the District UWMP yields the anticipated unconstrained water demand, i.e. the expected water use in the absence of shortage-caused reductions in water use. During a drought cycle, unconstrained demand typically increases due to higher than normal air temperatures and lower than normal precipitation. The supply reliability analysis and Drought Risk Assessment presented in Chapter 7 of the District UWMP accounts for this anticipated shift in unconstrained water demand, and as discussed above, even with these increases in demand the available groundwater supply is expected to be sufficient to meet these demands.

The model underlying the demand forecast described in Chapter 4 of the District UWMP has an annual time step. Cal Water has begun developing a short-term demand model with a monthly time step that will be more appropriate for the annual supply-demand assessments.

4. Planned Water Use for Current Year Considering Dry Subsequent Year

Cal Water will evaluate the anticipated supplies for the current year, assuming that the following year will be dry, as defined above, using the Evaluation Criteria identified above. Barring changes in supply availability per the Evaluation Criteria, the assumed dry subsequent year is not expected to affect the manner in which Cal Water will draw water from the basin in the current year, and the planned water use for the current year will equal the unconstrained demand.

5. Infrastructure Considerations

As part of its triennial General Rate Case applications to the California Public Utilities Commission (CPUC), Cal Water prepares a Supply-Demand Analysis (CPUC SD Analysis) for each of its Districts. The CPUC SD Analysis is an inventory of water production and pump assets that provide direct and indirect sources of supply to meet customer demands in accordance with CPUC General Order 103-A and California Code of Regulations (CCR) Title 22 Waterworks Standards. This CPUC SD Analysis is based on a combination of regulatory requirements, professional consultant recommendations, and industry standard practices, including those from the American Water Works Association (AWWA) and American Society of Civil Engineers (ASCE). It identifies specific vulnerabilities in different pressure zones within the system and evaluates the system against performance criteria that meet regulatory requirements and ensure operationally adequate levels of service.

Cal Water plans to extend the District CPUC SD Analysis to perform this analysis on an annual basis. This analysis will guide Cal Water's annual evaluation of operational treatment/distribution constraints that could potentially limit the availability of supplies. This evaluation of supply well operational constraints and treatment and

distribution constraints will be completed by March 31 of each year and will assess potential impacts on supply availability. If such constraints are identified, Cal Water will develop a plan to address these constraints, mitigate potential effects, and implement the appropriate water shortage stage of action per Chapter 5, below.

6. Other Factors

   As identified under the Evaluation Criteria above, local regulatory conditions could potentially limit the availability of supplies. Therefore, Cal Water will evaluate the development of new regulatory constraints by March 31 of each year and assess their potential impacts on supply availability. If such constraints are identified, Cal Water will develop a plan to address these constraints and mitigate potential effects and implement the appropriate water shortage stage of action per Chapter 5 below.

Consistent with California Water Code (CWC) § 10632.1, Cal Water will perform and submit an SDA to DWR by July 1st of each year beginning in 2022.

Chapter 4
Water Shortage Levels

☑ ***CWC § 10632 (a) (3)***

(A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

Consistent with the requirements of CWC § 10632(a)(3), this WSCP is based on the six water shortage levels (also referred to as "stages") shown in Table 4-1 for the water year ending September 2020. These shortage stages are intended to address shortage caused by any condition, including the catastrophic interruption of water supplies.

Table 4-1. Water Shortage Contingency Plan Levels (DWR Table 8-1)

Shortage Level	Percent Shortage Range	Shortage Response Actions
1	Up to 10%	Demand reduction (See Table 5-1)
2	Up to 20%	Demand reduction (See Table 5-1)
3	Up to 30%	Demand reduction (See Table 5-1)
4	Up to 40%	Demand reduction (See Table 5-1)
5	Up to 50%	Demand reduction (See Table 5-1)
6	>50%	Demand reduction (See Table 5-1)
NOTES:		

Shortage response actions for each of these stages are identified and discussed in Chapter 5.

Chapter 5
Shortage Response Actions

☑ ***CWC § 10632 (a) (4)***

Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

(A) Locally appropriate supply augmentation actions.

(B) Locally appropriate demand reduction actions to adequately respond to shortages.

(C) Locally appropriate operational changes.

(D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.

(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

☑ ***CWC § 10632 (b)***

For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

This chapter describes the response actions Cal Water will take to deal with the shortages associated with each of the six stages enumerated in Chapter 4. As discussed above, the existing groundwater supply of the District is expected to be able to serve 100% of future demands under all conditions of precipitation and hydrology. However, inasmuch as Cal Water may have to implement shortage response actions to comply with state mandates, local regulatory changes, or respond to catastrophic events, it is important to carefully identify and describe the anticipated necessary actions.

5.1 Demand Reduction

The combinations of demand-reduction actions required to resolve the shortages associated with each of the six drought stages are based on Cal Water's experiences in dealing with past drought-related shortages and also include other actions deemed appropriate to achieve the required demand reductions. In order to evaluate and ensure that the right actions would be implemented with the proper level of intensity, Cal Water employed the Drought Response Tool (DRT), an Excel spreadsheet model developed by EKI Environment and Water, Inc.

The DRT provides a quantitative framework that allows Cal Water to systematically estimate the monthly and cumulative annual demand reductions expected to result from particular combinations of drought response actions and associated implementation rates. Data inputs to

the DRT include total production, class-specific water use, population, and assumptions regarding the split between indoor and outdoor water use for each customer class.

For each drought response action, the user specifies:

- The customer class(es) and end use(s) that are affected;
- The percent savings for those end use(s) for each account that implements the action. These are based on evaluations reported in the literature, or where such studies are not available, on best estimates based on Cal Water experience; and
- The percentage of accounts assumed to implement the action, which is presumed to be the result of the intensity level of Cal Water program implementation, including but not limited to marketing and enforcement activities.

Based on the foregoing inputs, the DRT model calculates the resulting monthly savings. Cal Water adjusted the combination of actions and implementation levels to achieve the targeted savings levels at each of the six shortage stages.

In order to evaluate the robustness of the DRT model, Cal Water modeled the actions implemented during the height of the last drought for a subset of its Districts, and found that the modeled water shortage reductions were generally consistent with the responses observed in its Districts. In short, the DRT is a robust, transparent tool to tie a particular set of shortage-response actions to an expected reduction in demand.

For each of the six water shortage stages, the modeling targeted the mid-range of the required demand reduction range, ergo:

- 5% for Stage 1,
- 15% for Stage 2,
- 25% for Stage 3,
- 35% for Stage 4,
- 45% for Stage 5, and
- 55% for Stage 6.

The key DRT inputs and outputs for each of the six water shortage stages are reproduced in Attachment A.

Table 5-1 shows the water shortage reduction actions, savings assumptions, and implementation rates that are required for the District to achieve the targeted annual demand reductions for each of the six shortage stages. At each stage, there are two types of demand-reduction actions identified:

- Restrictions on customer water usage; and
- Consumption reduction actions by Cal Water to encourage decreased water usage.

The total demand reductions are governed by is a set of user-specified constraints to ensure that usage levels do not endanger health and safety or result in unacceptable economic impacts. The DRT will not permit estimated usage reductions to violate these constraints,

regardless of the demand reduction actions selected. For most Cal Water districts, including Visalia, the following default constraints are used:

- A minimum residential indoor per capita daily usage of 25 gallons,
- A maximum residential outdoor usage reduction of 100%,
- A maximum Commercial, industrial, and institutional (CII) indoor usage reduction of 30%, and
- A maximum CII outdoor usage reduction of 100%.

Many actions are implemented across a number of stages, some at increasing implementation levels. Therefore the actions are listed as a row under the first stage at which they are implemented, and the implementation rate is shown under each stage column heading at the right. The unit savings represent a percentage savings of the end uses indicated in the table.

Because of the of the DRT logic described above, the format of Table 5-1 differs from that of the default DWR table.

Table 5-1. Demand Reduction Actions to Achieve Required Savings (DWR Table 8-2)

Water Shortage Response Action	End Use(s)	End Use Savings	IMPLEMENTATION RATES BY STAGE						Penalty, Charge, or Other Enforcement?
			1	2	3	4	5	6	
Stage 1: Minimal Shortage									
Restrictions									
Landscape - Limit landscape irrigation to specific times	Irrigation	**10%**	75%	75%	N/A	N/A	N/A	N/A	Yes
Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Leaks	**100%**	15%	20%	25%	50%	50%	75%	Yes
Landscape - Restrict or prohibit runoff from landscape irrigation	Irrigation	**3%**	15%	40%	50%	50%	50%	50%	Yes
Landscape - Prohibit application of potable water to outdoor landscapes within 48 hours of measurable rainfall	Irrigation	**20%**	15%	40%	50%	50%	100%	100%	Yes
Other - Prohibit use of potable water for washing hard surfaces	Misc. Outdoor	**17%**	15%	40%	50%	50%	50%	50%	Yes
CII - Lodging establishments must offer opt out of linen service	Fixtures & Appliances	**1%**	50%	50%	50%	50%	50%	50%	Yes
Consumption Reduction									
Expand Public Information/Media Campaign	All	**0.5%**	50%	50%	50%	50%	50%	75%	No
Water Bill Inserts	All	**1%**	100%	100%	100%	100%	100%	100%	No
Promote online water waste reporting	All	**10%**	0%	0%	0%	0%	1%	1%	No
Expand Rebates or Giveaways of Plumbing Fixtures and Devices	All	**10%**	1%	1%	2%	4%	5%	5%	No

Water Shortage Response Action	End Use(s)	End Use Savings	IMPLEMENTATION RATES BY STAGE						Penalty, Charge, or Other Enforcement?
			1	2	3	4	5	6	
Expand Rebates for Landscape Irrigation Efficiency	All	**10%**	1%	1%	2%	4%	5%	5%	No
Expand CII Water Use Surveys	All CII uses	**5%**	1%	1%	1%	2%	2%	3%	No
Expand Res Water Use Surveys	All Residential Uses	**5%**	1%	1%	1%	2%	2%	3%	No
Stage 2: Moderate Shortage									
Restrictions									
Prohibit the use of non-recirculating systems in all new conveyer car wash and commercial laundry systems	Fixtures & Appliances	**50%**		0%	0%	0%	0%	0%	Yes
Prohibit the use of single pass cooling systems in new connections	Cooling	**50%**		0%	0%	0%	20%	20%	Yes
CII - Restaurants may only serve water upon request	Fixtures & Appliances	**0.50%**		50%	50%	50%	50%	50%	Yes
No watering of landscape of newly constructed homes and buildings in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development	Irrigation	**50%**		1.83%	1.83%	1.83%	1.83%	1.83%	Yes
Prohibit Potable Water Use for Decorative Water Features that do not Recirculate Water	Misc. Outdoor	**50%**		50%	50%	50%	50%	50%	Yes
Consumption Reduction									
Water Efficiency Workshops, Public Events	All Residential Uses	**5.00%**		25%	25%	25%	25%	25%	No

Water Shortage Response Action	End Use(s)	End Use Savings	IMPLEMENTATION RATES BY STAGE						Penalty, Charge, or Other Enforcement?
			1	2	3	4	5	6	
Offer Water Use Surveys	All	**1%**		1%	1%	2%	2%	3%	No
Provide Rebates or Giveaways of Plumbing Fixtures and Devices	All	**10%**		1%	2%	4%	5%	5%	No
Provide Rebates for Landscape Irrigation Efficiency	All	**10%**		1%	2%	4%	5%	5%	No
Stage 3: Severe Shortage									
Restrictions									
Landscape - Limit landscape irrigation to 1-3 days/week	Irrigation	**15%-79%** [1]			25%	25%	25%	75%	Yes
Landscape - Prohibit irrigation of ornamental turf on public street medians with potable water	Irrigation	**100%**			20%	20%	25%	30%	Yes
Prohibit Filling Ornamental Lakes or Ponds	Irrigation	**100%**			1%	1%	1%	1%	Yes
Consumption Reduction									
Home or Mobile Water Use Reports	All	**5%**			15%	25%	25%	50%	No
Decrease Frequency and Length of Line Flushing	Non Revenue Water	**25%**			50%	50%	50%	50%	No
Reduce System Water Loss	Non Revenue Water	**100%**			10%	10%	10%	20%	No
Increase Water Waste Patrols/Enforcement	All	**10%**			1%	3%	5%	5%	No
Implement Drought Rate Structure and Customer Water Budgets (Res)	All Residential Uses	**30%-60%** [2]			40%	25%	25%	25%	No

Water Shortage Response Action	End Use(s)	End Use Savings	IMPLEMENTATION RATES BY STAGE						Penalty, Charge, or Other Enforcement?
			1	2	3	4	5	6	
Implement Drought Rate Structure and Customer Water Budgets (CII)	All CII uses	**10%-30%** [3]			40%	25%	25%	50%	No
Stage 4: Critical Shortage									
Water Use Restrictions									
Prohibit use of potable water for construction and dust control	Misc. Outdoor	**100%**				1%	1%	1%	Yes
Prohibit use of potable water for street washing	Misc. Outdoor	**100%**				1%	1%	1%	Yes
Prohibit vehicle washing except with recycled water	Misc. Outdoor	**10%**				50%	50%	50%	Yes
Consumption Reduction Actions									
Promote / Expand Use of Recycled Water	Irrigation	**100%**				0%	0%	0%	No
Stage 5: Emergency Shortage									
Water Use Restrictions									
Require net zero demand Increase on new water service connections	All	**100%**					1.83%	1.83%	Yes
Prohibit use of water for recreational purposes (Prohibit filling of pools)	Misc. Outdoor	**100%**					1%	1%	Yes
Prohibit single-pass cooling systems	Cooling	**50%**					20%	20%	Yes
Consumption Reduction Actions									

Water Shortage Response Action	End Use(s)	End Use Savings	IMPLEMENTATION RATES BY STAGE						Penalty, Charge, or Other Enforcement?
			1	2	3	4	5	6	
Require Pool Covers	Misc. Outdoor	**28%**					10%	10%	No
Stage 6: Extreme Shortage									
Water Use Restrictions									
Moratorium on new water service connections	All	**100%**						1.83%	Yes
Landscape - Prohibit all landscape irrigation	Irrigation	**100%**						50%	Yes
			8%	**15%**	**27%**	**34%**	**49%**	**55%**	

NOTES:
1. Watering restricted to 3 days/wk in Stage 3; 2 days/wl in Stage 4; 1 day/wk in Stage 5.
2. Residential water budgets of 30% for Stage 3, 40% for Stage 4; 50% for Stage 5, 60% for Stage 6.
3. CII water budgets of 10% for Stage 3, 20% for Stage 4, 30% for Stages 5 and 6.

5.2 Supply Augmentation

As indicated in Table 5-2, Cal Water has not identified any supply augmentation actions to assist in resolving future District water shortages. As identified in Chapter 3, Cal Water may consider deepening or drilling new wells if necessary due to declining groundwater levels. However, Cal Water considers these actions to be operational changes (described in Section 5.3), rather than accessing a new supply source.

Table 5-2. Supply Augmentation and Other Actions (DWR Table 8-3)

Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*
NOTES:			

5.3 Operational Changes

As discussed above in Chapter 3, the primary operational change that Cal Water will consider in the District is extracting groundwater from a lower elevation, utilizing the deeper wells that are drilled following identification of this need as part of the annual SDA. As identified in Table 5-1, the District will also decrease the frequency and length of line flushing under Stage 3 and beyond. The District will also evaluate the potential benefits of altering other maintenance cycles and expediting infrastructure repairs to improve system efficiency, to the extent feasible.

In addition, Cal Water is actively participating in the GSP development process, and will make whatever operational changes are necessary to conform to the results of that process.

5.4 Mandatory Restrictions

The water shortage response actions included in Table 5-1 include a variety of mandatory customer water use restrictions that will be necessary to achieve the targeted demand reductions for the different shortage stages. The types of restrictions and the manner and degree of enforcement for these restrictions vary by stage, and are discussed in Chapter 7.

5.5 Emergency Response Plan

Cal Water has an Emergency Response Plan (ERP) in place that coordinates the overall response to a disaster. The ERP addresses the Company's responsibilities in emergencies associated with natural disaster, human-caused emergencies, and technological incidents. It provides a

framework for coordination of response and recovery efforts within the Company in cooperation with local, State, and Federal agencies, as well as other public and private organizations. The ERP establishes an emergency organization to direct and control operations during a period of emergency by assigning responsibilities to specific personnel.

The ERP does the following:

- It conforms to the State mandated Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS), and it effectively structures emergency response at all levels in compliance with the Incident Command System (ICS).
- It establishes response policies and procedures, while provide the Company clear guidance related to emergency planning.
- It describes and details procedural steps necessary to protect lives and property.
- It outlines coordination requirements.
- It provides a basis for unified training and response exercises to ensure compliance.

The Visalia District has installed backup power generators at some of its well sites, booster sites, and pump storage sites that can be operated in the event of a system wide power outage. A complete loss of power has never been experienced, but the generators have been used in the past to overcome localized outages.

The Visalia District does not have any interties, emergency or otherwise, with any other agencies.

5.6 Seismic Risk Assessment and Mitigation Plan

☑ ***CWC § 10632.5***

(a) In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.

(b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.

(c) An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.

Cal Water's ERP includes information on various hazards and a related fault map overlying the District. The Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan, which includes additional discussion of area earthquake risk and mitigation, can be found at https://oes.tularecounty.ca.gov/oes/index.cfm/mitigation/.

5.7 Shortage Response Action Effectiveness

Table 5-1 above shows the effectiveness of the specific demand-reduction actions and implementation levels necessary for the District to achieve the targeted savings for each water shortage stage. The bottom row indicates the total annual cumulative savings expected to be reached at each water shortage stage level. Additional details, including anticipated savings on a month-by-month basis are provided in the DRT model inputs and outputs included in Attachment A.

Chapter 6
Communication Protocols

☑ ***CWC § 10632 (a) (5)***

Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following:

(A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1.

(B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1.

(C) Any other relevant communications.

Cal Water intends to escalate communication to customers and stakeholders, as needed, throughout any water shortage situation to help ensure they are aware of current conditions, any water use restrictions that are in effect, and the many ways Cal Water can help them reduce their water use. Cal Water's outreach efforts include multiple channels, including bill messages, bill inserts, direct mail, email, letters, social media, print, radio, music streaming services, TV, over-the-top media, movie theatre advertising, and group presentations.

These efforts will expand on current Cal Water outreach efforts and will be customized to the needs at the time of the shortage to ensure a proper channel mix so that the maximum audience is reached as efficiently as possible.

Chapter 7
Compliance and Enforcement

☑ ***CWC § 10632 (a) (6)*** *For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.*

7.1 Water Use Restrictions

In accordance with Rule 14.1, Cal Water is currently authorized to take the following actions to enforce the water use restrictions:

First Violation: Cal Water shall provide the customer with a written notice of violation.

Second Violation: If Cal Water verifies that the customer has used potable water for non- essential, wasteful uses after having been notified of the first violation, Cal Water shall provide the customer with a second written notice of violation and is authorized to install a flow-restricting device on the customer's service line.

Cal Water plans to submit to the California Public Utilities Commission (CPUC) an update to Rule 14.1 to align with the restrictions identified in this WSCP. Rule 14.1 and Schedule 14.1 are discussed in more detail in Chapter 8.

7.2 Non-Essential, Wasteful Uses

In the event that more stringent measures are needed, implementation of Schedule 14.1 would be requested from the CPUC. If implemented, Cal Water is currently authorized to take the following actions when its personnel verify a customer is using potable water for non-essential, wasteful uses.

First Violation: Cal Water shall provide the customer with a written notice of violation. In addition, Cal Water is authorized to take the following actions:

A. If the customer currently receives service through a metered connection, install a real- time water measurement device on the customer's service line and provide the customer with access to information from the device. The cost of the device, including installation and ongoing operating costs, may be billed to the customer, and nonpayment may result in discontinuance of service.

B. If the customer does not currently receive service through a metered connection, install a water meter on the customer's service line, charge the customer for water use pursuant to Cal Water's metered service tariffs and rules,

and install a real-time water measurement device on the customer's service line and provide the customer with access to information from the device. The cost of the device, including installation and ongoing operating costs, may be billed to the customer, and nonpayment may result in discontinuance of service.

Second Violation: If Cal Water verifies that the customer has used potable water for non- essential, wasteful uses after having been notified of the first violation, Cal Water shall provide the customer with a second written notice of violation. In addition to the actions prescribed under the first violation above, Cal Water is authorized to take the following actions:

A. Apply the following waste of water penalties, which are in addition to any other charges authorized by this Schedule or other Cal Water tariffs.
   i. If Stage 1 is in effect, $25
   ii. If Stage 2 is in effect, $50
   iii. If Stage 3 is in effect, $100
   iv. If Stage 4 is in effect, $200
B. At its sole discretion, waive the waste of water penalty if the customer participates in a water use evaluation provided by Cal Water and/or provides documentation to Cal Water proving that a drip irrigation system, micro spray irrigation system, high-efficiency sprinkler system, or properly programmed smart irrigation controller has been installed, after a notice of violation was delivered, and is in use at the customer's service address.

Third Violation: If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the second violation, Cal Water shall provide the first and second violations above, Cal Water is authorized to take the following actions:

A. A. Apply the following waste of water penalties, which are in addition to any other charges authorized by this Schedule or other Cal Water tariffs.
   i. If Stage 1 is in effect, $50
   ii. If Stage 2 is in effect, $100
   iii. If Stage 3 is in effect, $200
   iv. If Stage 4 is in effect, $400
B. At its sole discretion, waive the waste of water surcharge if the customer participates in a water use evaluation provided by Cal Water and/or provides

documentation to Cal Water proving that a drip irrigation system, micro spray irrigation system, high- efficiency sprinkler system, or properly programmed smart irrigation controller has been installed, after notice of violations have been delivered, and is in use at the customer's service address.

Fourth Violation: If Cal Water verifies that the customer has used potable water for non- essential, wasteful uses after having been notified of the third violation, Cal Water shall provide the customer with a fourth written notice of violation. In addition to actions set forth in previous violations prescribed above, Cal Water is authorized to install a flow- restricting device on the customer's service line.

Egregious Violations: Notwithstanding the foregoing framework for penalties, customers who Cal Water has verified are egregiously using potable water for non-essential, wasteful uses are subject to having a flow- restricting device installed on their service line. After providing the customer with one notice of egregious violation, either by direct mail or door hanger, which documents the egregious use of potable water for non-essential, wasteful uses and explains that failure to correct the violation may result in the installation of a flow-restricting device on the customer's service line, Cal Water is authorized to install a flow-restricting device on the customer's service line.

Cal Water plans to submit to the CPUC an update to Schedule 14.1 to align with this WSCP including, but not limited to, consistency with the new six stage shortage level structure.

7.3 Drought Surcharges

Water budgets and associated drought surcharges are included as actions in Table 5-1. Cal Water will implement such actions through the implementation of Schedule 14.1.

Chapter 8
Legal Authorities

☑ ***CWC § 10632 (a) (7)***

(A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions.

(B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1.

(C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

Cal Water is an investor-owned water utility that is regulated by the CPUC. As such, it does not have the authority to adopt resolutions or ordinances. Rule 14.1, as filed with the CPUC, serves as Cal Water's WSCP and includes Mandatory Staged Restrictions of Water Use. In the event that more stringent measures are required, Cal Water may request the addition of Schedule 14.1 which includes Staged Mandatory Water Use Reductions. Cal Water shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency as defined in Section 8558 of the Government Code and to ensure consistency with local resolutions and ordinances.

On April 1, 2016, Cal Water filed its current Schedule 14.1 with the CPUC.[2] The Schedule lays out the staged mandatory reductions and drought surcharges associated with Cal Water's WSCP. This filing is consistent with Resolution W-5034, adopted by the Commission on April 9, 2015, ordering compliance with requirements of the State Water Resources Control Board (SWRCB).

Schedule 14.1 is an extension of the WSCP provided in Rule 14.1. The compliance and enforcement information presented in Chapter 7 is based on the current versions of both Rule 14.1 and Schedule 14.1, which are based, in part, on the specific SWRCB requirements associated with the Governor's Executive Order B-29-15, which required statewide cutbacks to address the unprecedented 2011-2017 drought, as well as the additional information required pursuant to the CWC.

Cal Water plans to submit an update to Rule 14.1 and Schedule 14.1 to the CPUC to align with this WSCP.

[2] For reference, the current version of Rule 14.1 is included as Attachment B.

In the event of a determination of a water shortage Cal Water shall declare a water shortage emergency in accordance with the Water Code Chapter 3 (commencing with Section 350) of Division 1 and implement the Water Shortage Contingency Plan at the appropriate Stage.

Chapter 9
Financial Consequences of WSCP

☑ ***CWC § 10632 (a) (8)***

A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following:

(A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4).

(C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.

In 2008, the CPUC approved the creation of a Water Revenue Adjustment Mechanism (WRAM) and Modified Cost Balancing Accounts (MCBA). The goals of the WRAM and MCBA are to sever the relationship between sales and revenue to remove the disincentive to reduce water use. The WRAM and MCBA are designed to be revenue neutral in order to ensure that both the utility and ratepayers are neither harmed nor benefitted.

In 2020, the CPUC ordered that regulated water utilities may not include the continuation of the WRAM and MCBA in their next general rate case filing but may propose the use of a Monterey-Style Revenue Adjustment Mechanism and Incremental Cost Balancing Account. As such, the WRAM and MCBA will no longer be in place for Cal Water beginning in 2023.

During a water shortage, Cal Water will file for a Drought Memorandum Account, or similar, to track incremental shortage-related expenses to be reviewed by the CPUC for future recovery in rates. Cal Water will also file for a Drought Lost Revenue Memorandum Account, or similar, to track reduced sales to be reviewed by the CPUC for future recovery in rates.

Both the Drought Memorandum Account and Drought Lost Revenue Memorandum Account are mechanisms that have been approved by the CPUC in previous droughts.

Chapter 10
Monitoring and Reporting

☑ ***CWC § 10632 (a) (9)*** *For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.*

During the period 2014-16, in order to effectively respond to the drought, Cal Water realigned its organizational structure to ensure sufficient resources were available to implement its WSCP. The day-to-day implementation was overseen by the Director of Drought Management & Conservation, with the assistance of the Drought Response Project Manager. The Director of Drought Management & Conservation reported to a team of Cal Water's Officers (Steering Committee), including the President & CEO, the Vice President of Corporate Communications & Community Affairs, the Vice President of Customer Service & Information Technology, the Vice President of Operations, and the Vice President of Continuous Improvement.

Reporting to the Director of Drought Management & Conservation was a team of functional leads, each responsible for managing individual portions of Cal Water's Plan. This team included the Director of Customer Service, the Water Conservation Manager, the Manager of Corporate Communications, the Water Supply Manager, and the Government & Community Relations Manager.

Cal Water would implement a similar structure to effectively manage future water shortages.

This structure includes regular meetings with reporting on items such as:

- Aggregate customer demands,
- Customer compliance with water use restrictions,
- Current and projected water supply conditions,
- Customer outreach activities,
- Customer service inquiries, and
- Operations activities (e.g., water flushing activities, leak repairs, etc.).

Chapter 11
WSCP Refinement Procedures

☑ ***CWC § 10632 (a) (10)*** *Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.*

Cal Water's Drought Steering Committee utilizes an adaptive management process to regularly assess and determine adjustments and changes to the implementation of the WSCP. These refinements are implemented by the Director of Drought Management & Conservation (or equivalent) through the team of functional leads.

Chapter 12
Plan Adoption, Submittal, and Availability

☑ ***CWC § 10632 (c)*** *The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.*

The deadline for public comments on the WSCP was June 18, 2021. The final WSCP was formally adopted by Cal Water's Vice President of Customer Service & Chief Citizenship Officer on June 20, 2021. The District UWMP includes a copy of the signed Resolution of Plan Adoption and contains the following:

- Letters sent to and received from various agencies regarding the UWMP and WSCP, and
- Correspondence between Cal Water and participating agencies.

This UWMP and WSCP were submitted to DWR within 30 days of adoption and by the July 1, 2021 deadline. The submittal was done electronically through Water Use Efficiency Data Portal, an online submittal tool. The adopted WSCP was also sent to the California State Library and to the cities and counties listed in Table 10-1 of the District UWMP.

On or about May 3, 2021, electronic versions of the draft 2020 UWMP and WSCP were made available for review by visiting Cal Water's website: https://www.calwater.com/conservation/uwmp.[3]

[3] Restrictions related to the COVID-19 pandemic prevented the District from making a printed hard-copy available for public review as previously planned.

Attachment A
Key Drought Response Tool Tables and Charts

Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

Visalia

Enter Agency Information	
Agency Name	Visalia
Total Population Served	146,639
Conservation Goal (%)	5%
Drought Stage	Stage 1
Number of Residential Accounts	41,251
Number of Commercial, Industrial, and Institutional (CII) Accounts	4,124
Number of Dedicated Irrigation Accounts	0
Baseline Year(s)	2020
Percentage of Residential Indoor Use During Minimum Month (%)	76%
Percentage of Comm-Gov Indoor Use During Minimum Month (%)	77%
Comments	VIS

Drought Response Tool
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Drought Response Tool

1 - Home

Visalia

Navigation	
USER'S GUIDE	Download and read the guide before using this Tool
1 - HOME	Enter agency information
2 - INPUT BASELINE YEAR WATER USE	Enter Baseline Year production and use
3 - BASELINE YEAR WATER USE PROFILE	Review and confirm entered information
4 - DROUGHT RESPONSE ACTIONS	Select Drought Response Actions and input estimated water savings and implementation rates.
5 - ESTIMATED WATER SAVINGS	Review estimated water production and compare estimated savings to conservation target.
6 - DROUGHT RESPONSE TRACKING	Track production and water savings against the conservation target.

Drought Response Tool
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Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

Visalia

For questions about this tool or for additional information, contact:

Anona Dutton, P.G., C.Hg.
adutton@ekiconsult.com
(650) 292-9100

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2 - Input Baseline Year (2020) Water Use

Visalia

Input Baseline Year (2020) Production and Water Use

Units: (mg)

Select the units to input monthly production and use data. Enter the total monthly potable water production for the Baseline Year. Next, enter monthly water use data by sector for the Baseline Year. If you bill on a bi-monthly basis, divide your billing data between the months that the billing cycle includes. If your single-family and multi-family accounts are tracked separately, enter the combined water use for both sectors in the Residential Water Use column. If your commercial, industrial, and institutional (CII) accounts are tracked separately, enter the combined water use for each sector in the CII Water Use column. Your non-revenue water use is calculated by subtracting your monthly residential, CII, and dedicated irrigation water uses from your monthly production. Your monthly residential gallons per capita per day (R-GPCD) is calculated by dividing your monthly residential water use by your population entered in Worksheet 1 - Home.

Date	Total Production (mg)	Residential Water Use (mg)	COM-GOV Water Use (mg)	Industrial Water Use (mg)	Non-Revenue Water Use (mg)	Total R-GPCD	Comments
October	920	659	302	19	-60	145	
November	709	544	230	11	-77	124	
December	458	436	187	14	-179	96	
January	442	321	134	20	-33	71	
February	495	314	126	9	46	77	
March	576	364	148	9	54	80	
April	603	394	160	8	41	90	
May	950	499	164	8	279	110	
June	1,074	728	250	11	85	166	
July	1,216	865	297	19	34	190	
August	1,211	861	317	13	20	189	
September	1,044	752	270	17	4	171	

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Drought Response Tool

Home | Input Baseline Year Water Use | **Baseline Year Water Use Profile** | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

3 - Baseline Year (2020) Water Use Profile

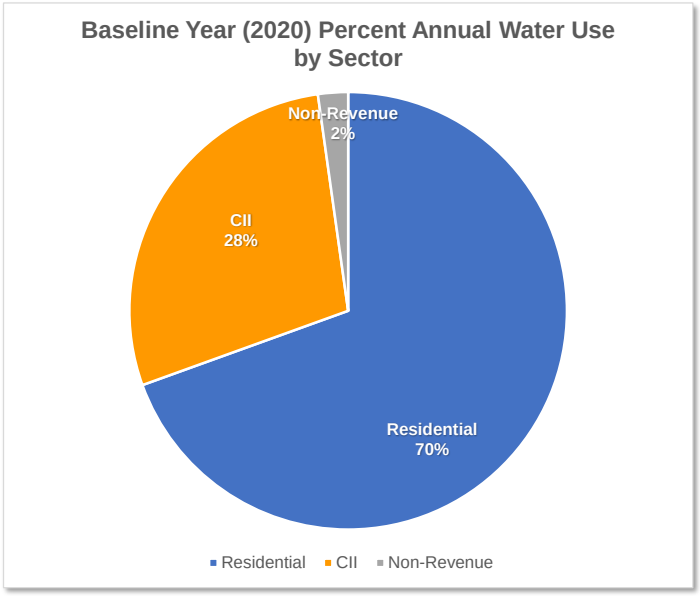
Visalia

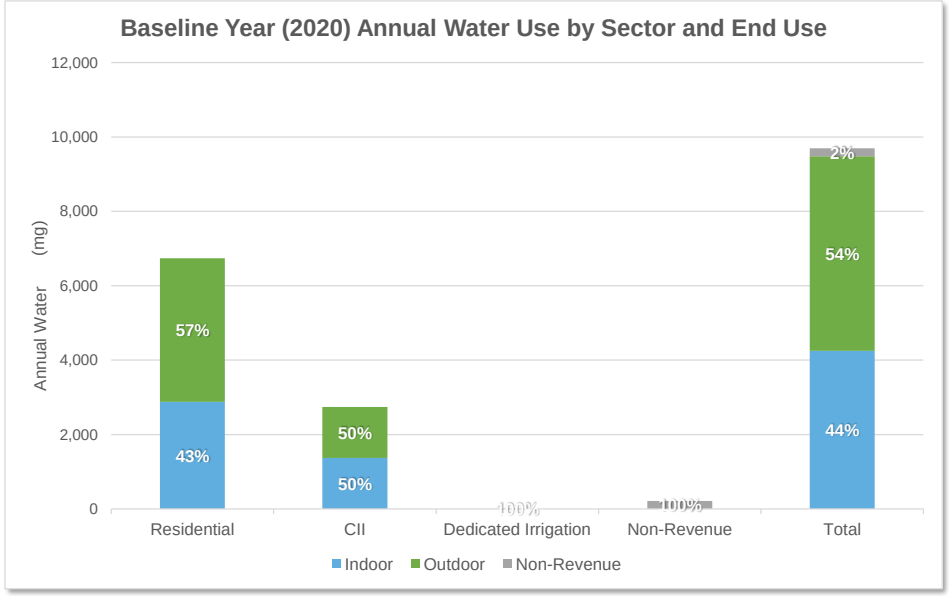
Baseline Year (2020) Annual Water Use Summary

Units: (mg)

A summary of your Baseline Year water use by sector and major end use category is shown below. Select the units in which your production and use data are displayed.

Water Use	Total Production (mg)	Water Use (mg)				Comments
		Residential	CII	Dedicated Irrigation	Non-Revenue	
Total	9,696	6,738	2,744	0	215	
Total Indoor	4,249	2,878	1,371	--	--	
Total Outdoor	5,232	3,860	1,372	0	--	
Total Non-Revenue	215	--	--	--	215	
Total Indoor %	44%	43%	50%	0%	--	
Total Outdoor %	54%	57%	50%	100%	--	
Total Non-Revenue %	2%	--	--	--	100%	





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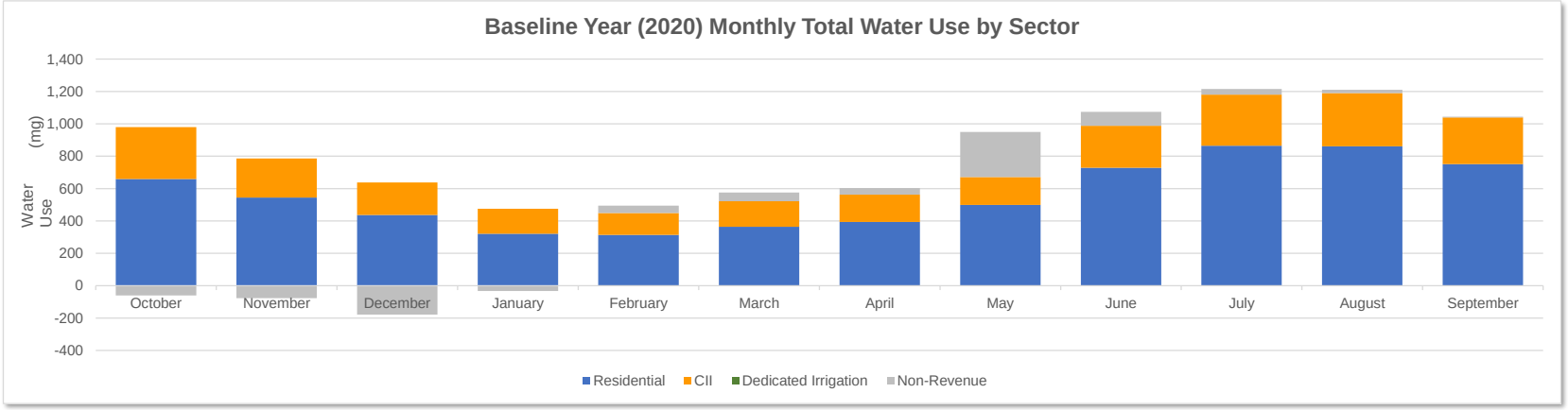
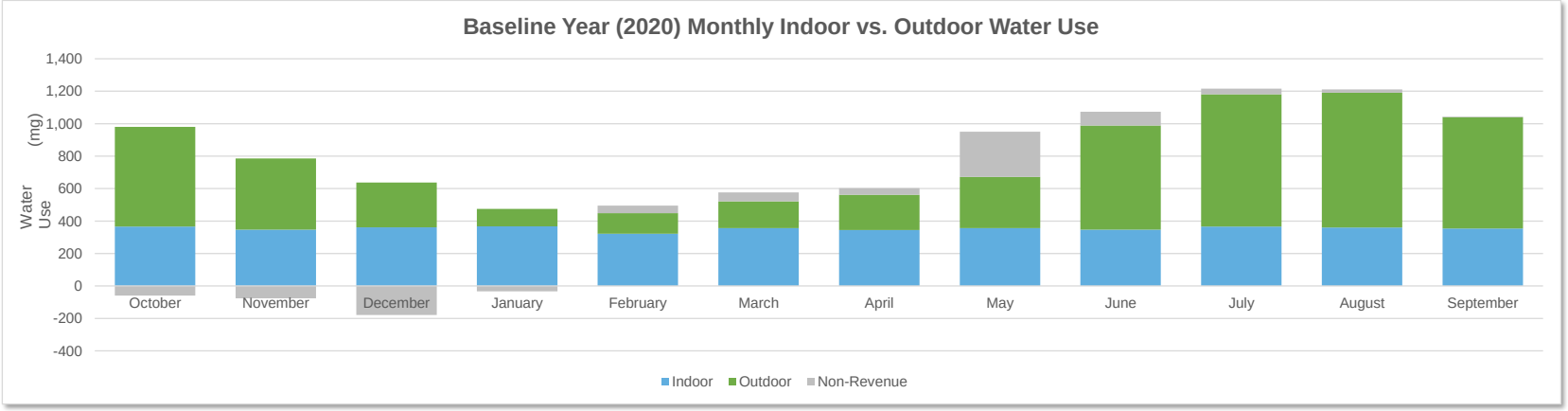
3 - Baseline Year (2020) Water Use Profile

Visalia





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5 - Estimated Water Savings - Stage 1

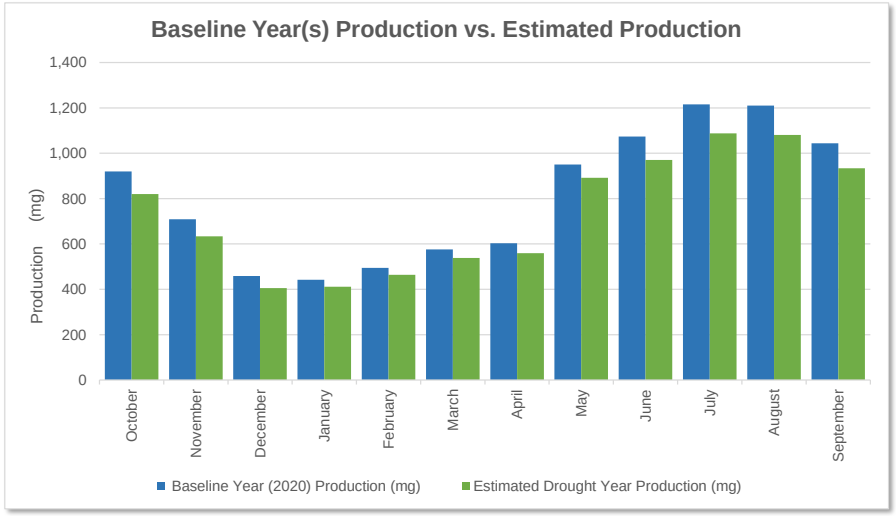
Visalia

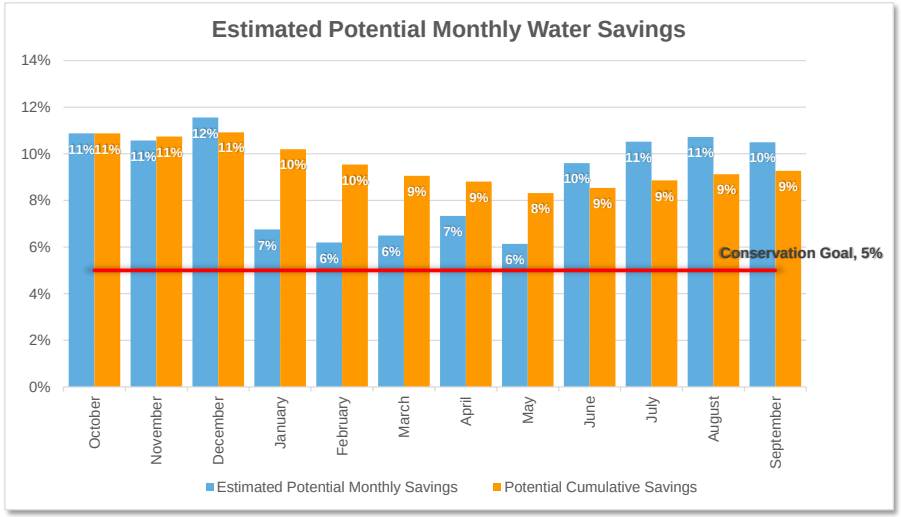
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2020) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
October	920	820	11%	11%	5%	
November	709	634	11%	11%	5%	
December	458	405	12%	11%	5%	
January	442	412	7%	10%	5%	
February	495	464	6%	10%	5%	
March	576	539	6%	9%	5%	
April	603	559	7%	9%	5%	
May	950	892	6%	8%	5%	
June	1,074	971	10%	9%	5%	
July	1,216	1,088	11%	9%	5%	
August	1,211	1,081	11%	9%	5%	
September	1,044	934	10%	9%	5%	





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Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

Visalia

Enter Agency Information	
Agency Name	Visalia
Total Population Served	146,639
Conservation Goal (%)	15%
Drought Stage	Stage 2
Number of Residential Accounts	41,251
Number of Commercial, Industrial, and Institutional (CII) Accounts	4,124
Number of Dedicated Irrigation Accounts	0
Baseline Year(s)	2020
Percentage of Residential Indoor Use During Minimum Month (%)	76%
Percentage of Comm-Gov Indoor Use During Minimum Month (%)	77%
Comments	VIS

Drought Response Tool
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5 - Estimated Water Savings - Stage 2

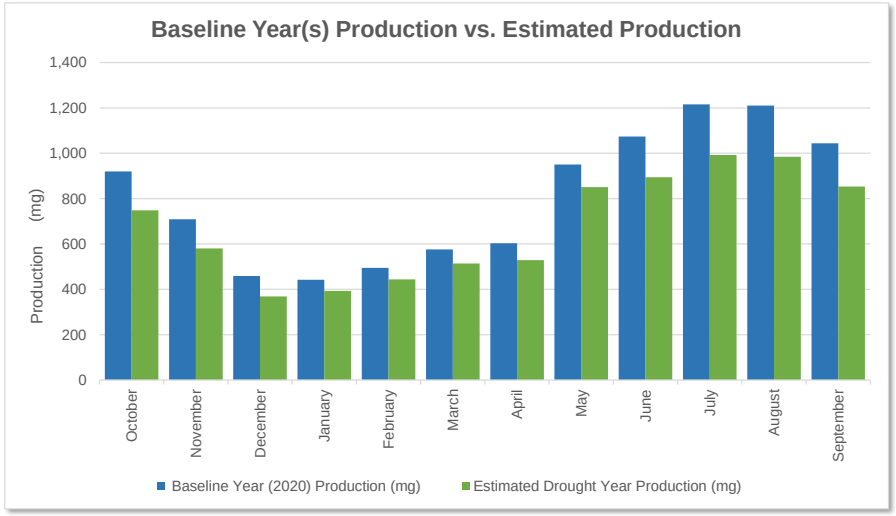
Visalia

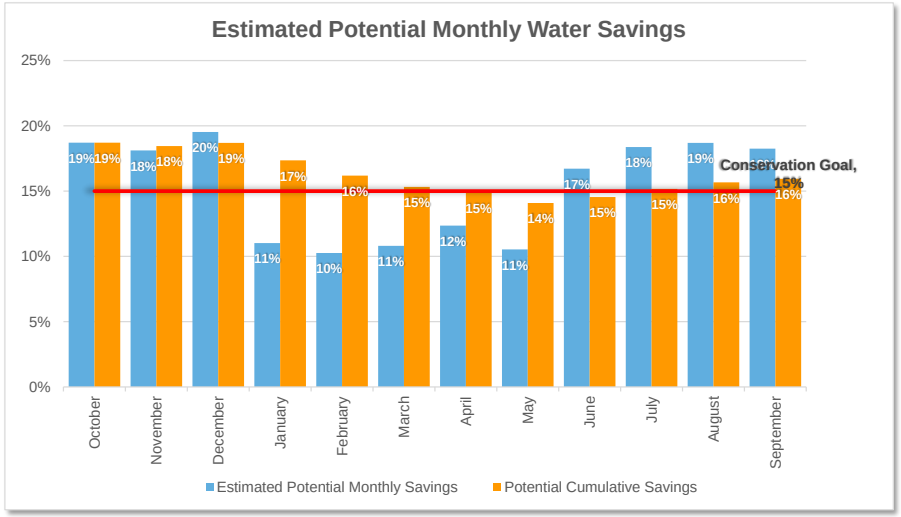
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2020) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
October	920	748	19%	19%	15%	
November	709	580	18%	18%	15%	
December	458	369	20%	19%	15%	
January	442	393	11%	17%	15%	
February	495	444	10%	16%	15%	
March	576	514	11%	15%	15%	
April	603	529	12%	15%	15%	
May	950	850	11%	14%	15%	
June	1,074	894	17%	15%	15%	
July	1,216	992	18%	15%	15%	
August	1,211	984	19%	16%	15%	
September	1,044	853	18%	16%	15%	





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Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

Visalia

Enter Agency Information	
Agency Name	Visalia
Total Population Served	146,639
Conservation Goal (%)	25%
Drought Stage	Stage 3
Number of Residential Accounts	41,251
Number of Commercial, Industrial, and Institutional (CII) Accounts	4,124
Number of Dedicated Irrigation Accounts	0
Baseline Year(s)	2020
Percentage of Residential Indoor Use During Minimum Month (%)	76%
Percentage of Comm-Gov Indoor Use During Minimum Month (%)	77%
Comments	VIS

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5 - Estimated Water Savings - Stage 3

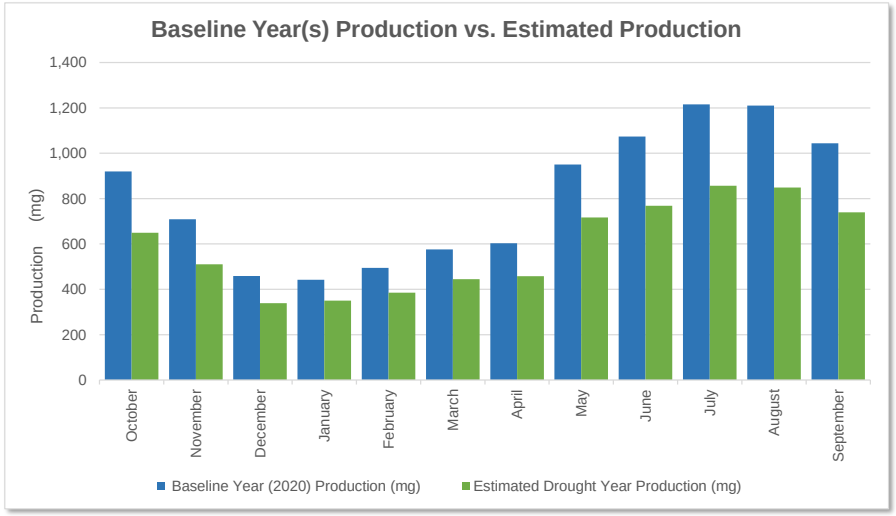
Visalia

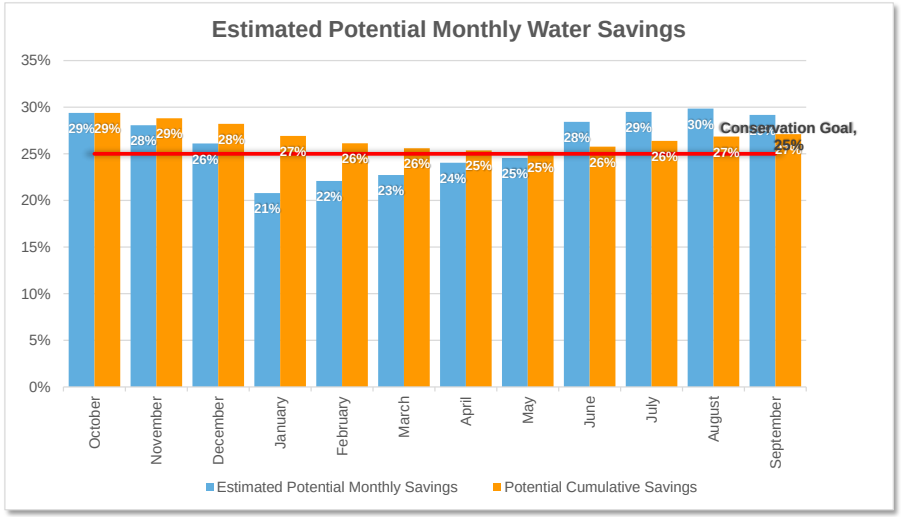
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2020) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
October	920	650	29%	29%	25%	
November	709	510	28%	29%	25%	
December	458	339	26%	28%	25%	
January	442	350	21%	27%	25%	
February	495	385	22%	26%	25%	
March	576	445	23%	26%	25%	
April	603	458	24%	25%	25%	
May	950	717	25%	25%	25%	
June	1,074	769	28%	26%	25%	
July	1,216	857	29%	26%	25%	
August	1,211	849	30%	27%	25%	
September	1,044	739	29%	27%	25%	





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Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

Visalia

Enter Agency Information	
Agency Name	Visalia
Total Population Served	146,639
Conservation Goal (%)	35%
Drought Stage	Stage 4
Number of Residential Accounts	41,251
Number of Commercial, Industrial, and Institutional (CII) Accounts	4,124
Number of Dedicated Irrigation Accounts	0
Baseline Year(s)	2020
Percentage of Residential Indoor Use During Minimum Month (%)	76%
Percentage of Comm-Gov Indoor Use During Minimum Month (%)	77%
Comments	VIS

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5 - Estimated Water Savings - Stage 4

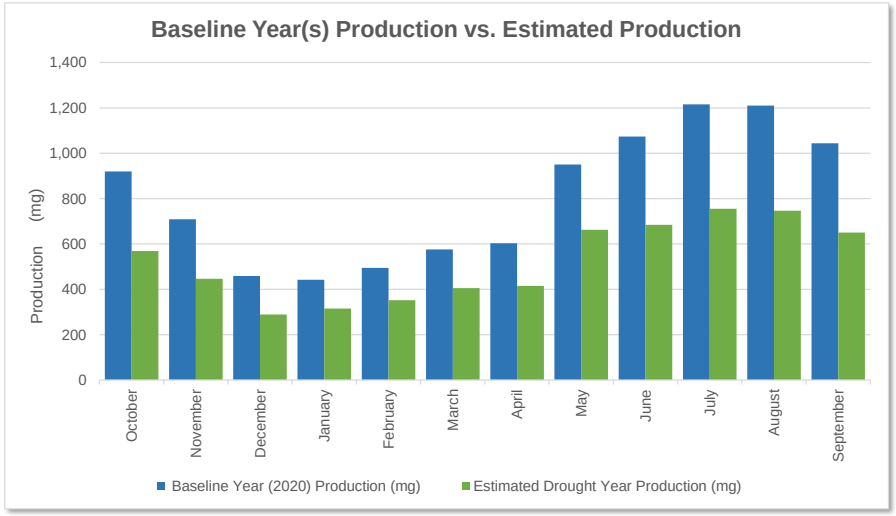
Visalia

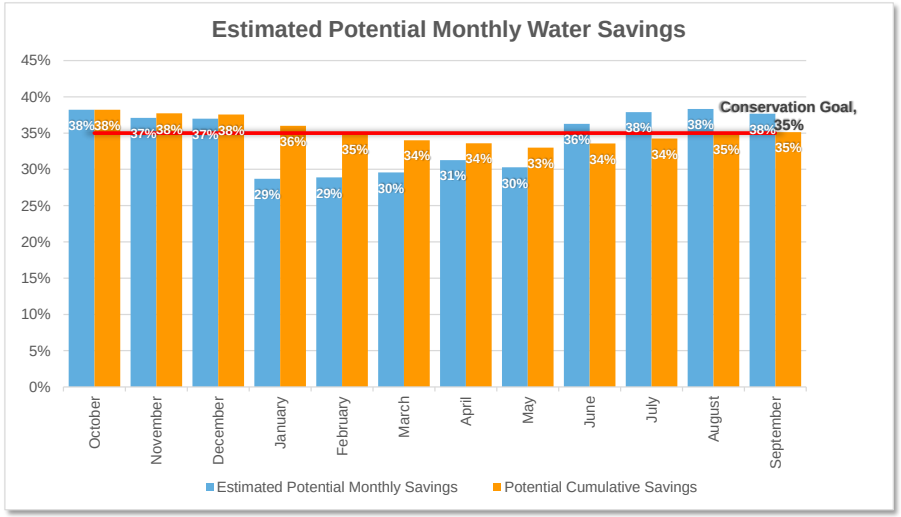
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2020) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
October	920	568	38%	38%	35%	
November	709	446	37%	38%	35%	
December	458	289	37%	38%	35%	
January	442	315	29%	36%	35%	
February	495	352	29%	35%	35%	
March	576	406	30%	34%	35%	
April	603	415	31%	34%	35%	
May	950	663	30%	33%	35%	
June	1,074	684	36%	34%	35%	
July	1,216	755	38%	34%	35%	
August	1,211	747	38%	35%	35%	
September	1,044	650	38%	35%	35%	





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Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

Visalia

Enter Agency Information	
Agency Name	Visalia
Total Population Served	146,639
Conservation Goal (%)	45%
Drought Stage	Stage 5
Number of Residential Accounts	41,251
Number of Commercial, Industrial, and Institutional (CII) Accounts	4,124
Number of Dedicated Irrigation Accounts	0
Baseline Year(s)	2020
Percentage of Residential Indoor Use During Minimum Month (%)	76%
Percentage of Comm-Gov Indoor Use During Minimum Month (%)	77%
Comments	VIS

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5 - Estimated Water Savings - Stage 5

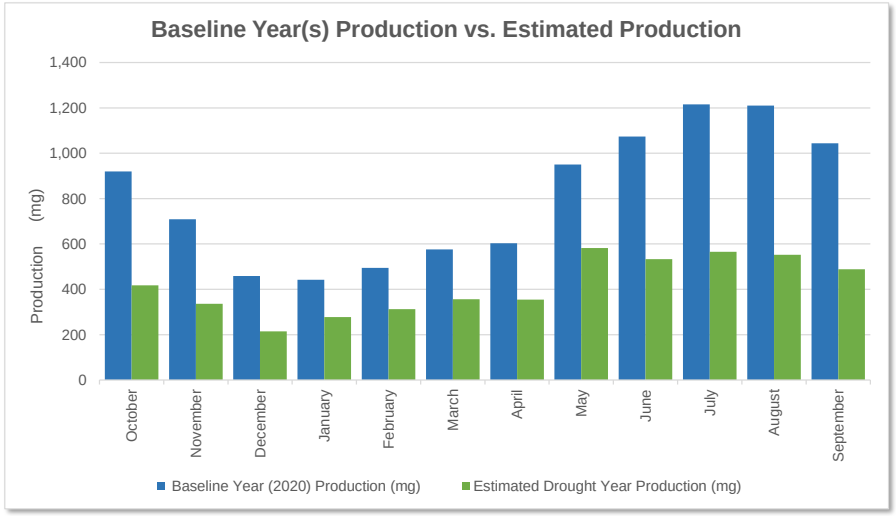
Visalia

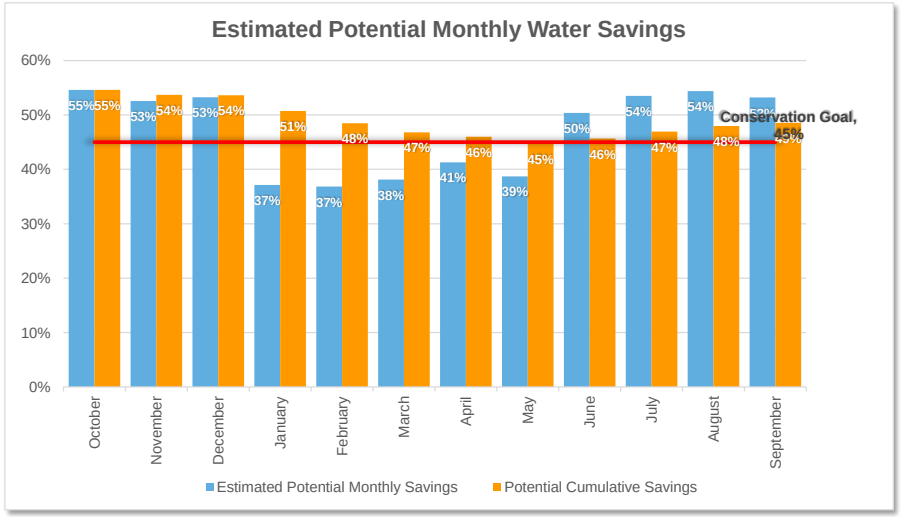
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2020) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
October	920	418	55%	55%	45%	
November	709	336	53%	54%	45%	
December	458	214	53%	54%	45%	
January	442	278	37%	51%	45%	
February	495	312	37%	48%	45%	
March	576	356	38%	47%	45%	
April	603	354	41%	46%	45%	
May	950	582	39%	45%	45%	
June	1,074	533	50%	46%	45%	
July	1,216	565	54%	47%	45%	
August	1,211	552	54%	48%	45%	
September	1,044	488	53%	49%	45%	





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Drought Response Tool

Home | Input Baseline Year Water Use | Baseline Year Water Use Profile | Drought Response Actions | Estimated Water Savings | Drought Response Tracking

1 - Home

Visalia

Enter Agency Information	
Agency Name	Visalia
Total Population Served	146,639
Conservation Goal (%)	55%
Drought Stage	Stage 6
Number of Residential Accounts	41,251
Number of Commercial, Industrial, and Institutional (CII) Accounts	4,124
Number of Dedicated Irrigation Accounts	0
Baseline Year(s)	2020
Percentage of Residential Indoor Use During Minimum Month (%)	76%
Percentage of Comm-Gov Indoor Use During Minimum Month (%)	77%
Comments	VIS

Drought Response Tool
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5 - Estimated Water Savings - Stage 6

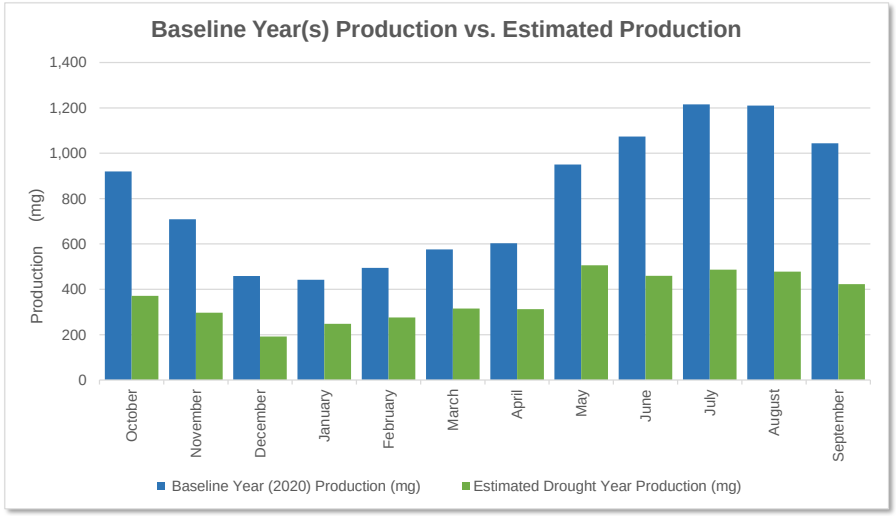
Visalia

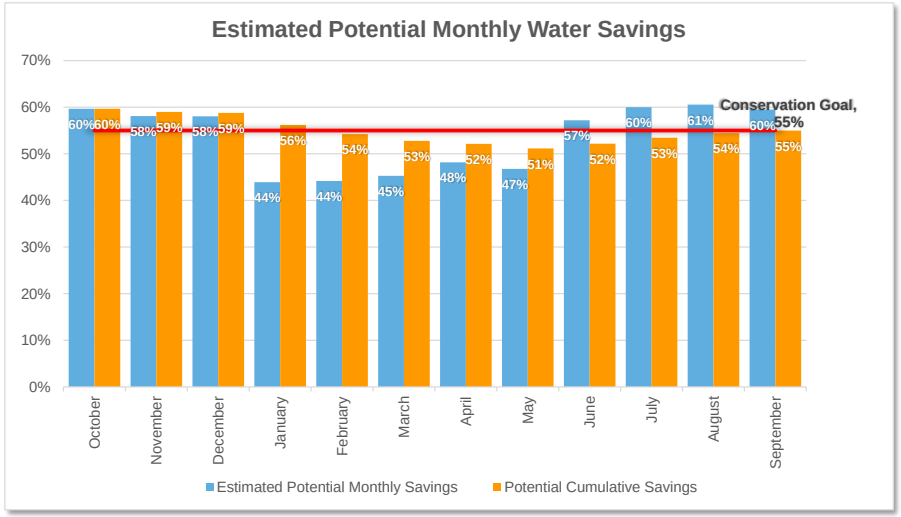
Estimated Monthly Water Use and Savings Summary

Units: (mg)

This provides a summary of the estimated production relative to Baseline Year production and potential water savings, assuming implementation of selected actions at the water savings and implementation rates indicated in the Drought Response Actions worksheet. Select the units that your production data are displayed in.

Month	Baseline Year (2020) Production (mg)	Estimated Drought Year Production (mg)	Estimated Potential Monthly Savings	Potential Cumulative Savings	Conservation Goal	Comments
October	920	371	60%	60%	55%	
November	709	297	58%	59%	55%	
December	458	192	58%	59%	55%	
January	442	248	44%	56%	55%	
February	495	276	44%	54%	55%	
March	576	315	45%	53%	55%	
April	603	313	48%	52%	55%	
May	950	506	47%	51%	55%	
June	1,074	460	57%	52%	55%	
July	1,216	486	60%	53%	55%	
August	1,211	478	61%	54%	55%	
September	1,044	422	60%	55%	55%	





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Attachment B
CPUC Rule and Schedule 14.1

Rule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 1) (T)

A. APPLICABILITY (N)

1. This schedule applies to all of California Water Service's regulated ratemaking areas in California, as well as Grand Oaks Water.

B. GENERAL INFORMATION

1. All expenses incurred by utility to implement Rule 14.1, and Schedule 14.1, and requirements of the California State Water Resources Control Board ("Water Board") that have not been considered in a General Rate Case or other proceeding shall be accumulated by Cal Water in a separate memorandum account, authorized in Resolution W-4976, for disposition as directed or authorized from time to time by the Commission.
2. To the extent that a Stage of Mandatory Water Use Restrictions in Schedule 14.1 has been activated, and a provision in this Rule is inconsistent with the activated Stage in Schedule 14.1, the provisions of Schedule 14.1 apply.

C. DEFINITIONS

For the purposes of this Rule, the following terms have the meanings set forth in this section.

1. "Commercial nursery" means the use of land, buildings or structures for the growing and/or storing of flowers, fruit trees, ornamental trees, vegetable plants, shrubs, trees and similar vegetation for the purpose of transplanting, for use as stock or grafting, and includes the retail sale or wholesale distribution of such items directly from the premises/lot.
2. "Drip irrigation system" means a non-spray, low-pressure, and low volume irrigation system utilizing emission devices with a precipitation or flow rate measured in gallons per hour (GPH), designed to slowly apply small volumes of water at or near the root zone of plants or other landscaping.
3. "Flow rate" means the rate at which water flows through pipes, valves, and emission devices, measured in gallons per minute (GPM), gallons per hour (GPH), inches per hour (IPH), hundred cubic feet (Ccf), or cubic feet per second (CFS).
4. "Flow-restricting device" means valves, orifices, or other devices that reduce the flow of potable water through a service line, which are capable of passing a minimum of 3 Ccf per person, per month, based upon the U.S. Census calculation of the average number of people in a household in the area.
5. "High-efficiency sprinkler systems" means an irrigation system with emission devices, such as sprinkler heads or nozzles, with a precipitation or flow rate no greater than one IPH.
6. "Irrigation" means the application of potable water by artificial means to landscape.
7. "Irrigation system" means the components of a system meant to apply water to an area for the purpose of irrigation, including, but not limited to, piping, fittings, sprinkler heads or nozzles, drip tubing, valves, and control wiring.
8. "Landscape" means all of the outdoor planting areas, turf areas, and water features at a particular location.
9. "Measureable rainfall" means any amount of precipitation of more than one-tenth of an inch (0.1").
10. "Micro spray irrigation system" means a low-pressure, low-volume irrigation system utilizing emission devices that spray, mist, sprinkle, or drip with a precipitation or flow rate measured in GPH, designed to slowly apply small volumes of water to a specific area. (N)

(continued)

Rule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN (continued)

(T)

C. DEFINITIONS (Continued) (N)

11. "Ornamental landscape" means shrubs, bushes, flowers, ground cover, turf, lawns, and grass planted for the purpose of improving the aesthetic appearance of property, but does not include crops or other agricultural products or special landscape areas.

12. "Ornamental turf" means a ground cover surface of grass that can be mowed and is planted for the purpose of improving the aesthetic appearance of the property, but does not include crops or other agricultural products or special landscape areas.

13. "Plumbing fixture" means a receptacle or device that is connected to a water supply system, including, but not limited to, pipes, toilets, urinals, showerheads, faucets, washing machines, water heaters, tubs, and dishwashers.

14. "Potable water" means water supplied by Cal Water which conforms to the federal and state standards for human consumption.

15. "Properly programmed" means a smart irrigation controller that has been programmed according to the manufacturer's instructions and site-specific conditions.

16. "Real-time water measurement device" means a device or system that provides regularly updated electronic information regarding the customer's water use.

17. "Runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape onto other areas.

18. "Smart irrigation controller" means an automatic device used to remotely control valves that operate an irrigation system that has been tested by an American National Standards Institute accredited third-party certifying body or laboratory in accordance with the Environmental Protection Agency's WaterSense program (or an analogous successor program), and certified by such body or laboratory as meeting the performance and efficiency requirements of such program, or the more stringent performance and efficiency requirements of another similar program.

19. "Special landscape area" means an area of the landscape dedicated solely to edible plants and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.

20. "Turf" means a ground cover surface of grass that can be mowed.

21. "Water feature" means a design element where open, artificially supplied water performs an aesthetic or recreation feature, including, but not limited to, ponds, lakes, waterfalls, fountains, and streams.

22. "Water use evaluation" means an evaluation of the efficiency of indoor water-using devices, including, but not limited to, measurement of flow rates for all existing showerheads, faucets, and toilets, inspection for leaks, and providing written recommendations to improve the efficiency of the indoor water-using fixtures and devices and/or an evaluation of the performance of an irrigation system, including, but not limited to, inspection for leaks, reporting of overspray or runoff, and providing written recommendations to improve the performance of the irrigation system. (N)

(continued)

Rule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 3) (T)

D. ENFORCEMENT (N)

Each Stage of this Rule establishes certain restrictions on the use of potable water. Violating the restrictions set forth in a particular Stage while it is in effect is declared a non-essential, wasteful use of potable water. Subject to the schedule and conditions outlined below, Cal Water is authorized to install a flow-restricting device on the service line of any customer when its personnel verify a customer is using potable water for non-essential, wasteful uses. No person shall have any right or claim in law or in equity, against Cal Water because of, or as a result of, any matter or thing done or threatened to be done pursuant to the restrictions on using potable water for non-essential, wasteful uses.

1. FIRST VIOLATION: Cal Water shall provide the customer with a written notice of violation.

2. SECOND VIOLATION: If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the first violation, Cal Water shall provide the customer with a second written notice of violation and is authorized to install a flow-restricting device on the customer's service line. Cal Water shall not be held liable for any injuries, damages, and/or consequences arising from the installation of a flow restricting device.

3. NOTICES OF VIOLATION:

   A. Written notices of violation provided to customers pursuant to this Rule shall document the verified violation and alert the customer to the fact that future violations of the restricted uses of potable water may result in the installation of a flow-restricting device on the customer's service line or the discontinuation of the customer's service.

   B. If Cal Water elects to install a flow-restricting device on a customer's service line, the written notice of violation shall explain that a flow-restricting device has or will be installed on the customer's service line, document the steps the customer must take in order for the flow-restricting device to be removed, and explain that after the flow-restricting device is removed, it may be reinstalled, without further notice, if the customer is again verified by Cal Water's personnel to be using potable water for non-essential, wasteful uses.

4. FLOW RESTRICTING DEVICE CONDITIONS: The installation of a flow-restricting devide on a customer's service line is subject to the following conditions:

   a. The device shall be capable of providing the premise with a minimum of 3 Ccf per person, per month, based upon the U.S. Census calculation of the average number of people in a household in the area.

   b. The device may only be removed by Cal Water, and only after a minimum three-day period has elapsed.

   c. Any tampering with the device may result in the discontinuation of the customer's water service and the customer being charged for any damage to Cal Water's equipment or facilities and any required service visits. (N)

(continued)

Rule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 4) (T)

D. ENFORCEMENT (Continued) (N)

d. After the removal of the device, if Cal Water verifies that the customer is using potable water for non-essential, wasteful uses, Cal Water may install another flow-restricting device without prior notice. This device may remain in place until water supply conditions warrant its removal. If, despite the installation of the device, Cal Water verifies that the customer is using potable water for non-essential and, unauthorized wasteful uses, then Cal Water may discontinue the customer's water service, as provided in its Rule No. 11.

5. FLOW-RESTRICTING DEVICE REMOVAL CHARGES: The charge to customers for removal of a flow-restricting device installed pursuant to this Rule is $100 during normal business hours, and $150 for the device to be removed outside of normal business hours.

E. WASTEFUL USES OF WATER

Except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency, customers are prohibited, at all times, from using potable water for the following actions, as each is declared a non-essential, wasteful use of water:

1. Use of potable water through a broken or defective plumbing fixture or irrigation system when Cal Water has notified the customer in writing to repair the broken or defective plumbing fixture or irrigation system, and the customer has failed to effect such repairs within seven (7) business days of receipt of such notice;
2. The application of potable water to landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;
3. The use of a hose that dispenses potable water to wash vehicles, including cars, trucks, buses, boats, aircraft, and trailers, whether motorized or not, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.

F. MANDATORY STAGED RESTRICTIONS OF WATER USE

1. ADOPTION OF STAGED MANDATORY RESTRICTIONS: Cal Water may implement the following staged mandatory restrictions of water use, after notifying the Director of the Commission's Division of Water and Audits (DWA), by a Tier 1 advice letter in both hard-copy and emailed formats, of Cal Water's intent to implement a particular stage, if:
   a. Water supplies are projected to be insufficient to meet normal customer demand by Cal Water; or
   b. A water supply shortage or threatened shortage exists; or
   c. Water supplies are curtailed by a wholesale water supplier; or
   d. Directed to do so under a duly adopted emergency regulation by the Commission or other authorized government agencies. (N)

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 5)

F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

2. PUBLIC NOTICE: Thirty (30) days prior to implementing a mandatory staged reduction in water use in this Rule, Cal Water shall notify its customer of the requirements of the particular stage implemented by Cal Water by bill insert, direct mailing, email, or bill message directing the customer to additional information on Cal Water's website.

3. STAGE 1 WATER SHORTAGE: A Stage 1 Water Shortage occurs when Cal Water, the Commission, a wholesale water supplier, or other authorized government agency determines that measures are needed to reduce water consumption by customers served by public water suppliers. In addition to the prohibitions outlined in **Section E**, the following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency:

   a. Outdoor Irrigation Restrictions (Stage 1)

      i. Irrigating ornamental landscapes with potable water is limited to no more than **three (3) days** per week, on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:

         1. Customers with even-numbered addresses may irrigate on Saturdays, Tuesdays, and Thursdays.
         2. Customers with odd-numbered addresses may irrigate on Sundays, Wednesdays, and Fridays.
         3. Customers without a street address may irrigate on Saturdays, Tuesdays, and Thursdays.
         4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or commercial nurseries may occur as needed, provided that the customer who wishes to irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.
         5. Notwithstanding the foregoing restrictions, when a city, county, or other local public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate which are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.

      ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m**.

      iii. The foregoing restrictions do **not** apply to:

         1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system; (N)

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 6)

F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 1 (cont.)]

2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, with a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixture(s) or irrigation system(s) must be repaired within **five (5) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.

c. **Prohibited** Uses of Water: Customers are prohibited from using potable water for the following actions:

i. The application of potable water to driveways and sidewalks;

ii. The use of potable water in a water feature, except where the water is part of a recirculating system;

iii. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall.

d. Other duly adopted restrictions on the use potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

4. STAGE 2 WATER SHORTAGE: A Stage 2 Water Shortage occurs when the Stage 1 Water Shortage restrictions are deemed insufficient to achieve identified water use goals established by Cal Water, the Commission, a wholesale water supplier, or other authorized government agency. In addition to the prohibited wasteful water use practices listed in Section D, the following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to the previous Stage are underlined.

a. Outdoor Irrigation Restrictions (Stage 2)

i. Irrigating ornamental landscapes with potable water is limited to no more than **three (3) days** per week, on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:

1. Customers with even-numbered addresses may irrigate on Saturdays, Tuesdays, and Thursdays.

2. Customers with odd-numbered addresses may irrigate on Sundays, Wednesdays, and Fridays. (N)

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 2 (cont.)]

3. Customers without a street address may irrigate on Saturdays, Tuesdays, and Thursdays.

4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or commercial nurseries may occur as needed, provided that the customer who wishes to irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.

5. Notwithstanding the foregoing restrictions, when a city, county, or other public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate which are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.

ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m**.

iii. The foregoing restrictions do **not** apply to:

1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system;

2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixture(s) or irrigation system(s) must be repaired within **three (3) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.

c. **Prohibited** Uses of Water: Customers are prohibited from using potable water for the following actions:

i. The application of potable water to driveways and sidewalks;

ii. The use of potable water in a water feature, except where the water is part of a recirculating system;

iii. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;

iv. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased; (N)

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 8)

F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 2 (cont.)]

v. Irrigation of ornamental landscape on public street medians;

vi. Irrigation outside of newly constructed homes and buildings with potable water in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

d. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.

e. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Rule.

f. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

5. STAGE 3 WATER SHORTAGE: A Stage 3 Water Shortage occurs when the Stage 2 Water Shortage restrictions are deemed insufficient to achieve identified water use goals established by Cal Water, the Commission, a wholesale water supplier, or other authorized government agency. In addition to the prohibited wasteful water use practices listed in Section D, the following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to the previous Stages are underlined.

a. Outdoor Irrigation Restrictions

i. Irrigating ornamental landscapes with potable water is limited to no more than **two (2) days** per week, on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:

1. Customers with even-numbered addresses may irrigate on Saturdays and Tuesdays (previous Stages allowed Thursdays as well).
2. Customers with odd-numbered addresses may irrigate on Sundays and Wednesdays (previous Stages allowed Fridays as well).
3. Customers without a street address may irrigate on Saturdays and Tuesdays (previous Stages allowed Thursdays as well). (N)

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

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F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 3 (cont.)]

4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or commercial nurseries may occur as needed, provided that the customer who wishes to irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.

5. Notwithstanding the foregoing restrictions, when a city, county, or other local public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate which are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.

ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m.**

iii. The foregoing restrictions do **not** apply to:

1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system;

2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within **two (2) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.

c. **Prohibited** Uses of Water: Customers are prohibited from using potable water for the following actions:

i. The application of potable water to driveways and sidewalks;

ii. The use of potable water in a water feature, except where the water is part of a recirculating system;

iii. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;

iv. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

v. Irrigation of ornamental turf on public street medians;

vi. Irrigation outside of newly constructed homes and buildings with potable water in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

vii. Use of potable water for street cleaning with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible); (N)

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 3 (cont.)]

viii. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.

d. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.

e. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Rule.

f. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

6. STAGE 4 WATER SHORTAGE: A Stage 4 Water Shortage occurs when the Stage 3 Water Shortage restrictions are deemed insufficient to achieve identified water use goals established by Cal Water, the Commission, a wholesale water supplier, or other authorized government agency. In addition to the prohibited wasteful water use practices listed in Section D, the following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to the previous Stage are underlined.

a. Irrigating ornamental landscape with potable water is prohibited, except when a hand-held bucket or a similar container, or a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored is used to maintain vegetation, including trees and shrubs.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixtures or irrigation system must be repaired within **one (1) business day** of written notification by Cal Water, unless other arrangements are made with Cal Water.

Prohibited Uses of Water: Customers are prohibited from using potable water for the following actions:

i. The application of potable water to driveways and sidewalks;

ii. The use of potable water in a water feature, except where the water is part of a recirculating system;

iii. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall; (N)

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

F. MANDATORY STAGED RESTRICTIONS OF WATER USE (Continued)

[Stage 4 (cont.)]

iv. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

[Note that items previously identified as (v) and (vi) in Stage 3 have been eliminated.]

v. Use of potable water for street cleaning with trucks (the previous Stage allowed certain exceptions);

vi. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses (the previous Stage allowed certain exceptions).

c. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.

d. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Rule.

f. Other duly adopted restrictions on the use of utility-supplied potable water as prescribed from time to time by the Commission or other authorized government agencies, commissions, or officials are incorporated herein by reference.

G. ADOPTION OF STAGED MANDATORY WATER USE REDUCTIONS (for Schedule 14.1)

1. ADDITION OF SCHEDULE 14.1: If, in the opinion of Cal Water, more stringent water conservation measures are required due to supply conditions or government directive, Cal Water may request the addition of a Schedule No. 14.1 – Staged Mandatory Water Use Reductions, via a Tier 2 advice letter.

   A. Cal Water may not activate Schedule No. 14.1 until it has been authorized to do so by the California Public Utilities Commission, as delegated to its Division of Water and Audits.

   B. A Schedule No. 14.1 that has been authorized by the California Public Utilities Commission shall remain dormant until triggered by specific conditions detailed in the Schedule 14.1 tariff and Cal Water has requested and received authorization for activating a stage by the California Public Utilities Commission. (N)

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 12)

G. ADOPTION OF STAGED MANDATORY WATER USE REDUCTIONS (for Schedule 14.1) (continued)

c. Notice of the Tier 2 advice letter and associated public participation hearing, if required, shall be provided to customers through a bill insert or a direct mailing, as set forth in Subsection 5 (Public Notice) below.

d. Cal Water shall comply with all requirements of Sections 350-358 of the California Water Code.

e. The Tier 2 advice letter requesting the addition of a Schedule No. 14.1 shall include, but not be limited to:

i. A proposed Schedule No. 14.1 tariff, which shall include but not be limited to:

1. Applicability,
2. Territory applicable to,
3. A detailed description of each stage of water budgets (the number of stages requested for a ratemaking area may vary depending on the specifics of the water shortage event),
4. A detailed description of the trigger(s) that activates each stage of water budgets,
5. A detailed description of each water use restriction for each stage of water budgets,
6. Water use violation levels, written warning levels, associated fines, if applicable, and exception procedures,
7. Conditions for installation of a flow restrictor,
8. Charges for removal of flow restrictors, and
9. Special conditions

ii. Justification for, and documentation and calculations in support of the water budgets.

2. Conditions for Activating Schedule No. 14.1: Cal Water may file a Tier 1 advice letter to request activation of a particular stage of its Schedule No. 14.1 tariff if:

a. Cal Water, the California Public Utilities Commission, wholesale water supplier, or other government agency declares an emergency requiring mandatory water budgets, mandatory water rationing, or mandatory water allocations; or

b. A government agency declares a state of emergency in response to severe drought conditions, earthquake or other catastrophic event that severely reduces Cal Water's water supply; or

c. Cal Water is unable to achieve water conservation targets set by itself; or

d. Water conservation targets set by itself or a governing agency are insufficient; or

e. Cal Water chooses to subsequently activate a different stage of its Schedule No. 14.1 tariff.

(continued)

Rule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN (continued)

(Page 13)

G. ADOPTION OF STAGED MANDATORY WATER USE REDUCTIONS (for Schedule 14.1) (continued)

a. Include, but not be limited to, a justification for activating the particular stage of mandatory water use reductions, as well as the period during which the particular stage will be in effect.

b. Be accompanied by the customer notification measures detailed in sub-section 5 (Public Notice) below.

4. De-Activating Schedule No. 14.1: When Schedule No. 14.1 is activated and Cal Water determines that water supplies are again sufficient to meet normal demands, and mandatory water use reductions are no longer necessary, Cal Water shall seek the approval of the California Public Utilities Commission, via a Tier 1 advice letter, to de-activate the particular stage of mandatory water use reductions that had been authorized.

5. Public Notice

a. When Cal Water requests the addition of a Schedule 14.1 – Staged Mandatory Water Use Reductions Tariff, via a Tier 2 advice letter, it shall provide notice of the Tier 2 advice letter and associated public hearing provided to customers through bill inserts or direct mailing, and it shall comply with all requirements of Sections 350-358 of the California Water Code (CWC), including but not limited to the following:

i. In order to be in compliance with both the General Order 96-B and CWC, notice shall be provided via both newspaper and bill insert/direct mailing.

ii. One notice shall be provided for each advice letter filed, that includes both notice of the filing of the Tier 2 advice letter as well as the details of the public hearing (date, time, place, etc.).

iii. The public meeting shall be held after the Tier 2 advice letter is filed, and before the Commission authorizes the addition of Schedule 14.1 to the tariff except in cases of emergency water shortages approved by DWA.

iv. Cal Water shall consult with Division of Water and Audits staff prior to filing advice letter, in order to determine details of public meeting.

b. In the event that Schedule No. 14.1- Staged Mandatory Water Use Reductions Tariff is triggered, and Cal Water requests activation through the filing of a Tier 1 advice letter, Cal Water shall notify its customers and provide each customer with a summary of Schedule No. 14.1 by means of bill insert or direct mailing. Notification shall take place prior to imposing any penalties associated with this plan. If activation of Schedule No. 14.1 occurs one year or more since the public hearing associated with adding Schedule 14.1 to its tariffs, then Cal Water shall conduct a public hearing pursuant to California Water Code Section 351 prior to activating a stage of its Mandatory Water Use Reduction Tariff.

c. During the period that a stage of Schedule No. 14.1 is activated, Cal Water shall provide customers with updates in at least every other bill, regarding its water supply status and the results of customers' conservation efforts. (N)

[end]

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES

A. APPLICABILITY

1. This schedule applies to all of California Water Service's regulated ratemaking areas in California, as well as Grand Oaks Water.

B. GENERAL INFORMATION

1. All expenses incurred by California Water Service to implement Rule 14.1, and Schedule 14.1, and requirements of the California State Water Resources Control Board ("Water Board") that have not been considered in a General Rate Case or other proceeding shall be accumulated by Cal Water in a separate memorandum account, authorized in Resolution W-4976, for disposition as directed or authorized from time to time by the Commission.
2. All monies collected by Cal Water through waste of water penalties established in this schedule shall be recorded in the appropriate memorandum account and used to offset the expenses described in Section 1 above.
3. Except in the case of Grand Oaks, all monies collected by Cal Water through drought surcharges, as established by the Mandatory Water Budgets found in Schedule 14.1, shall be recorded in the appropriate Water Revenue Adjustment Mechanism ("WRAM") account and used to offset under-collected revenues.
4. To the extent that any provision in this Schedule is inconsistent with Rule 14.1, the provisions of this Schedule apply. (D)
5. On April 1, 2015, the Governor of the State of California issued Executive Order B-29-15 due to severe drought conditions. The Executive Order, among other requirements, directs the State Water Resources Control Board ("Water Board") to impose restrictions on urban water suppliers like Cal Water to achieve a statewide 25% reduction in potable urban usage, as compared with the amount used in 2013, through February 2016. (L) (D)

   Urban water suppliers must develop rate structures and other pricing mechanisms, such as surcharges and penalties, to achieve 25% water conservation. (L)
6. On May 5, 2015, the Water Board issued an Emergency Regulation by Resolution No. 2015-0032 due to continuing drought conditions with specific water use reductions, by service area, and prohibitions on how end-use customers can use potable water. On May 7, 2015, the California Public Utilities Commission ("Commission") issued Resolution W-5041 ordering compliance with the mandates of the Governor and the Water Board. (L)
7. On November 13, 2015, the Governor of the State of California issued Executive Order B-36-15 that directed the Water Board to, if drought conditions persist through January 2016, extend until October 31, 2016 restrictions to achieve a statewide reduction in potable usage. (N)
8. On February 2, 2016, the Water Board adopted an extended and revised Emergency Regulation due to continuing drought conditions. On February 11, 2016, the Commission issued Resolution W-5082 ordering compliance with the mandates of the Governor and the Water Board. (N)

C. DEFINITIONS

For the purposes of this Schedule, the following terms have the meanings set forth in this section. (These are the same as in Rule 14.1, unless otherwise specified.)

1. "Commercial nursery" means the use of land, buildings or structures for the growing and/or storing of flowers, fruit trees, ornamental trees, vegetable plants, shrubs, trees and similar vegetation for the purpose of transplanting, for use as stock or grafting, and includes the retail sale or wholesale distribution of such items directly from the premises/lot.

(continued)

Schedule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES

C. DEFINITIONS (Continued)

2. "Drip irrigation system" means a non-spray, low-pressure, and low volume irrigation system utilizing emission devices with a precipitation or flow rate measured in gallons per hour (GPH), designed to slowly apply small volumes of water at or near the root zone of plants or other landscaping.
3. "Flow rate" means the rate at which water flows through pipes, valves, and emission devices, measured in gallons per minute (GPM), gallons per hour (GPH), inches per hour (IPH), hundred cubic feet (Ccf), or cubic feet per second (CFS).
4. "Flow-restricting device" means valves, orifices, or other devices that reduce the flow of potable water through a service line, which are capable of passing a minimum of 3 Ccf per person, per month, based upon the U.S. Census calculation of the average number of people in a household in the area.
5. "High-efficiency sprinkler systems" means an irrigation system with emission devices, such as sprinkler heads or nozzles, with a precipitation or flow rate no greater than one IPH.
6. "Irrigation" means the application of potable water by artificial means to landscape.
7. "Irrigation system" means the components of a system meant to apply water to an area for the purpose of irrigation, including, but not limited to, piping, fittings, sprinkler heads or nozzles, drip tubing, valves, and control wiring.
8. "Landscape" means all of the outdoor planting areas, turf areas, and water features at a particular location.
9. "Measureable rainfall" means any amount of precipitation of more than one-tenth of an inch (0.1").
10. "Micro spray irrigation system" means a low-pressure, low-volume irrigation system utilizing emission devices that spray, mist, sprinkle, or drip with a precipitation or flow rate measured in GPH, designed to slowly apply small volumes of water to a specific area.
11. "Ornamental landscape" means shrubs, bushes, flowers, ground cover, turf, lawns, and grass planted for the purpose of improving the aesthetic appearance of property, but does not include crops or other agricultural products or special landscape areas.
12. "Ornamental turf" means a ground cover surface of grass that can be mowed and is planted for the purpose of improving the aesthetic appearance of the property, but does not include crops or other agricultural products or special landscape areas.
13. "Plumbing fixture" means a receptacle or device that is connected to a water supply system, including, but not limited to, pipes, toilets, urinals, showerheads, faucets, washing machines, water heaters, tubs, and dishwashers.
14. "Potable water" means water supplied by Cal Water which conforms to the federal and state standards for human consumption.
15. "Properly programmed" means a smart irrigation controller that has been programmed according to the manufacturer's instructions and site-specific conditions.
16. "Real-time water measurement device" means a device or system that provides regularly updated electronic information regarding the customer's water use.
17. "Runoff" means water which is not absorbed by the soil or landscape to which it is applied and flows from the landscape onto other areas.
18. "Smart irrigation controller" means an automatic device used to remotely control valves that operate an irrigation system that has been tested by an American National Standards Institute accredited third-party certifying body or (N)

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

C. DEFINITIONS (Continued)

laboratory in accordance with the Environmental Protection Agency's WaterSense program (or an analogous successor program), and certified by such body or laboratory as meeting the performance and efficiency requirements of such program, or the more stringent performance and efficiency requirements of another similar program.

19. "Special landscape area" means an area of the landscape dedicated solely to edible plants and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.
20. "Turf" means a ground cover surface of grass that can be mowed.
21. "Water feature" means a design element where open, artificially supplied water performs an aesthetic or recreation feature, including, but not limited to, ponds, lakes, waterfalls, fountains, and streams.
22. "Water use evaluation" means an evaluation of the efficiency of indoor water-using devices, including, but not limited to, measurement of flow rates for all existing showerheads, faucets, and toilets, inspection for leaks, and providing written recommendations to improve the efficiency of the indoor water-using fixtures and devices and/or an evaluation of the performance of an irrigation system, including, but not limited to, inspection for leaks, reporting of overspray or runoff, and providing written recommendations to improve the performance of the irrigation system.

D. WASTE OF WATER PENALTIES

Each Stage of this Schedule establishes certain restrictions on the use of potable water. Violating the restrictions set forth in a particular Stage while it is in effect is declared a non-essential, wasteful use of potable water. Cal Water is authorized to take the following actions when its personnel verify a customer is using potable water for non-essential, wasteful uses. No person shall have any right or claim in law or in equity, against Cal Water because of, or as a result of, any matter or thing done or threatened to be done pursuant to the restrictions on using potable water for non-essential, wasteful uses.

Note: When a Stage in this Schedule has been activated, Section D in this Schedule supersedes Section D (Enforcement) in Rule 14.1.

1. **FIRST VIOLATION:** Cal Water shall provide the customer with a written notice of violation. In addition, Cal Water is authorized to take the following actions:
   a. If the customer currently receives service through a metered connection, install a real-time water measurement device on the customer's service line and provide the customer with access to information from the device. The cost of the device, including installation and ongoing operating costs, may be billed to the customer, and nonpayment may result in discontinuance of service. (C)
   b. If the customer does not currently receive service through a metered connection, install a water meter on the customer's service line, charge the customer for water use pursuant to Cal Water's metered service tariffs and rules, and install a real-time water measurement device on the customer's service line and provide the customer with access to information from the device. The cost of the device, including installation and ongoing operating costs, may be billed to the customer, and nonpayment may result in discontinuance of service. (C)
2. **SECOND VIOLATION:** If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the first violation, Cal Water shall provide the customer with a second written notice of violation. In addition to the actions prescribed under the first violation above, Cal Water is authorized to take the following actions:
   a. Apply the following waste of water penalties, which are in addition to any other charges authorized by this Schedule or other Cal Water tariffs.
      i. If Stage 1 is in effect, $25 (Stage 1 is detailed below in Section E).
      ii. If Stage 2 is in effect, $50 (Stage 2 is detailed below in Section F).

(continued)

Schedule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

D. WASTE OF WATER PENALTIES (Continued)

iii. If Stage 3 is in effect, $100 (Stage 3 is detailed below in Section G).
iv. If Stage 4 is in effect, $200 (Stage 4 is detailed below in Section H).

b. At its sole discretion, waive the waste of water penalty if the customer participates in a water use evaluation provided by Cal Water and/or provides documentation to Cal Water proving that a drip irrigation system, micro spray irrigation system, high-efficiency sprinkler system, or properly programmed smart irrigation controller has been installed, after a notice of violation was delivered, and is in use at the customer's service address.

3. THIRD VIOLATION: If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the second violation, Cal Water shall provide the customer with a third written notice of violation. In addition to the actions prescribed under the first and second violation above, Cal Water is authorized to take the following actions:

a. Apply the following waste of water penalties, which are in addition to any other charges authorized by this Schedule or other Cal Water tariffs.
i. If Stage 1 is in effect, $50 (Stage 1 is detailed below in Section E).
ii. If Stage 2 is in effect, $100 (Stage 2 is detailed below in Section F).
iii. If Stage 3 is in effect, $200 (Stage 3 is detailed below in Section G).
iv. If Stage 4 is in effect, $400 (Stage 4 is detailed below in Section H).

b. At its sole discretion, waive the waste of water surcharge if the customer participates in a water use evaluation provided by Cal Water and/or provides documentation to Cal Water proving that a drip irrigation system, micro spray irrigation system, high-efficiency sprinkler system, or properly programmed smart irrigation controller has been installed, after notice of violations have been delivered, and is in use at the customer's service address.

4. FOURTH VIOLATION: If Cal Water verifies that the customer has used potable water for non-essential, wasteful uses after having been notified of the third violation, Cal Water shall provide the customer with a fourth written notice of violation. In addition to actions set forth in previous violations prescribed above, Cal Water is authorized to install a flow-restricting device on the customer's service line. Cal Water shall not be held liable for any injuries, damages, and/or consequences arising from the installation of a flow restricting device.

5. EGREGIOUS VIOLATIONS: Notwithstanding the foregoing framework for penalties, customers who Cal Water has verified are egregiously using potable water for non-essential, wasteful uses are subject to having a flow-restricting device installed on their service line. After providing the customer with one notice of egregious violation, either by direct mail or door hanger, which documents the egregious use of potable water for non-essential, wasteful uses and explains that failure to correct the violation may result in the installation of a flow-restricting device on the customer's service line, Cal Water is authorized to install a flow-restricting device on the customer's service line. Cal Water shall not be held liable for any injuries, damages, and/or consequences arising from the installation of a flow restricting device.

6. NOTICES OF VIOLATION:

a. Unless otherwise specified, written notices of violation provided to customers pursuant to this Schedule shall document the verified violation and alert the customer to the fact that future violations of the restricted uses of potable water may result in a real-time water measurement device being installed on the customer's service line at the customers expense, waste of water surcharges being applied to the customer's bill, the installation of a flow-restricting device on the customer's service line, or the discontinuation of the customer's service. (N)

(continued)

Schedule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

D. WASTE OF WATER PENALTIES (Continued)

b. If Cal Water elects to install a flow-restricting device on a customer's service line, the written notice shall document the steps the customer must take in order for the flow-restricting device to be removed, and shall explain that after the flow-restricting device is removed, it may be reinstalled, without further notice, if the customer is again verified by Cal Water to be using potable water for non-essential, wasteful uses.

7. FLOW RESTRICTING DEVICE CONDITIONS: The installation of a flow-restricting device on a customer's service line is subject to the following conditions:

a. The device shall be capable of providing the premise with a minimum of 3 Ccf per person, per month, based upon the U.S. Census calculation of the average number of people in a household in the area.

b. The device may only be removed by Cal Water, and only after a minimum three-day period has elapsed.

c. Any tampering with the device may result in the discontinuation of the customer's water service and the customer being charged for any damage to Cal Water's equipment or facilities and any required service visits.

d. After the removal of the device, if Cal Water's personnel verify that the customer is using potable water for non-essential, wasteful uses, Cal Water may install another flow-restricting device without prior notice. This device shall remain in place until water supply conditions warrant its removal. If, despite the installation of the device, Cal Water's personnel verifies that the customer is using potable water for non-essential, wasteful uses, then Cal Water may discontinue the customer's water service, as provided in its Rule No. 11.

8. FLOW-RESTRICTING DEVICE REMOVAL CHARGES: The charge to customers for removal of a flow-restricting device installed pursuant to this Schedule is $100 during normal business hours, and $150 for the device to be removed outside of normal business hours.

E. STAGE ONE WATER USE RESTRICTIONS

1. WASTEFUL USES OF WATER (STAGE 1)

The following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need, or to comply with a term or condition in a permit issued by a state or federal agency:

a. Outdoor Irrigation Restrictions (Stage 1)

i. Irrigating ornamental landscapes with potable water is limited to no more than **three (3) days per week,** on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:

1. Customers with even-numbered addresses may irrigate on Saturdays, Tuesdays, and Thursdays.
2. Customers with odd-numbered addresses may irrigate on Sundays, Wednesdays, and Fridays.
3. Customers without a street address may irrigate on Saturdays, Tuesdays, and Thursdays. (N)

(continued)

Schedule No. 14.1 (N)

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

E. STAGE ONE WATER USE RESTRICTIONS (Continued)

4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or commercial nurseries may occur as needed, provided that the customer who wishes to irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.
5. Notwithstanding the foregoing restrictions, when a city, county, or other local public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate that are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.

ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m.**

iii. The foregoing restrictions do **not** apply to:
1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system;
2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, with a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within **five (5) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.

c. Prohibited Uses of Water: Customers are prohibited from using potable water for the following actions:
i. The application of potable water to landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;
ii. The use of a hose that dispenses potable water to wash vehicles, including cars, trucks, buses, boats, aircraft, and trailers, whether motorized or not, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.
iii. The application of potable water to driveways and sidewalks;
iv. The use of potable water in a water feature, except where the water is part of a recirculating system;
v. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall (see Definitions);
vi. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;
vii. Irrigation of ornamental turf on public street medians with potable water;
viii. Irrigation outside of newly constructed homes and buildings with potable water in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

d. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language. (N)

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

E. STAGE ONE WATER USE RESTRICTIONS (Continued)

[Stage 1 (cont.)]

e. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Schedule.

f. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

F. STAGE TWO WATER USE RESTRICTIONS

1. MANDATORY WATER BUDGETS AND BANKING (STAGE 2)

As described in greater detail below, the Water Board has mandated reductions in potable urban usage, as compared with the amount used in 2013, in each of Cal Water's service areas. Water suppliers must develop rate structures and other pricing mechanisms, such as surcharges and penalties, to achieve these mandated reductions (T)

a. **Mandatory Reduction Percentages**: The Water Board has established increasing levels of required water reduction for each service areas based upon the residential per capita per day use (R-GPCD) in that service area for the three summer months of July through September 2014. The Water Board's approach considers the relative per capita water usage in each service area and requires that those areas with high per-capita use achieve proportionally greater reductions than those with low use. The Water Board has also allowed for adjustments to these required water reductions based on specific criteria.

Each month, the Water Board determines whether a service area has met its mandatory reduction percentage by calculating cumulative savings in the service area since June 2015, and comparing those with the amount of water used during the same months in 2013. (T)

b. **Customer Water Budgets:** Each customer with metered potable water service (residential and non-residential customers) will receive an individualized "Water Budget" for each billing period. (T)

i. The Water Budget will be based on the units of water (CCF) that customer used in the same billing period in 2013, minus the Mandatory Reduction Percentage established by the Water Board for that customer's service area. (T) A customer's Water Budget will vary according to their monthly water usage in 2013. Cal Water shall notify its customers of any changes to the Mandatory Reduction Percentage by the Water Board through bill inserts or direct mailings prior to applying the changed percentage in the requirements in this Schedule, consistent with the "Update" process described in Section F.1.d.(iv) of this Schedule. Cal Water shall also include the current Mandatory Reduction Percentage in effect for each service area on its website. (C) (C)

ii. If a customer was not in his or her current location in 2013, the average monthly consumption will be used as a starting budget. If customers have a unique situation and the average budget is not appropriate, they can file an appeal to have their Water Budget increased. Cal Water may also modify the starting budget to reflect suitable use. (T)

iii. The Water Budget for the following billing period will appear on each customer's water bill. Customers will also be able to find their Water Budgets, and their individual water use history dating back to 2013, by going to usage.calwater.com (do not include "www"), and entering their account number, street (or house) number, and ZIP code. (T) (T)

(D)

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

F. STAGE TWO WATER USE RESTRICTIONS (continued) (T)

1. MANDATORY WATER BUDGETS AND BANKING (STAGE 2) (continued) (T)

c. **Minimum Water Budgets**: A minimum monthly amount of water that protects the health and safety of customers will be established for each service area as a Minimum Water Budget for single-family residential customers.

i. No single-family residential customer will have a water budget that is below the threshold of the monthly Minimum Water Budget, even if applying the Mandatory Reduction Percentage to that customer's 2013 usage would result in a lower amount.

ii. The Minimum Water Budget for each service area is identified in **Appendix A**. (For areas with bi-monthly billing and bi-monthly water budgets, the Minimum Water Budget in Appendix A should be doubled for the billing period.)

d. **Drought Surcharges**: If a customer uses more units of potable water (CCF) than their Water Budget in a billing period, that customer's water bill may reflect an additional "Drought Surcharge" for each unit of water over the Water Budget, depending on the amount of excess usage (according to usage tiers described below). (T) (C)

i. **Tier A and Tier B Excess Water Usage:** Excess water usage above a customer's Water Budget may fall into one or both of two tiers – Tier A and Tier B. The amount of usage in Tiers A and B varies by service area, and depends upon whether an area has met its Mandatory Reduction Percentage on a cumulative basis.

For the purposes of Drought Surcharges, each service area will fall into one of two categories – those in compliance with the Mandatory Reduction Percentage, and those not in compliance. There are two sample tables in the last section of this Schedule (**Section I**). The first sample table identifies the Tier A and B usage amounts for those service areas that are in compliance with their Mandatory Reduction Percentage, as of the date specified in **Appendix A**. The second sample table identifies the Tier A and B usage amounts for those service areas that are not in compliance with their Mandatory Reduction Percentage, as of the date specified in **Appendix A**. (C)

ii. **Current Surcharges and Tiers: Appendix A** to this schedule provides the Drought Surcharge rate per unit of water and the excess water usage in Tiers A and B that are currently in effect for each service area. (T) (C)

At this time, Drought Surcharges only apply to excess water usage that falls within "Tier B." Excess water usage in Tier A constitutes a "courtesy" tier to which Drought Surcharges are not applied. As stated below under Water Banking, however, all excess water usage will be applied against a customer's "banked" water amounts, regardless of whether the usage falls within Tier A or Tier B. (C)

Customers will continue to pay the normal tariffed rates for potable water, in addition to any applicable Drought Surcharges. Cal Water retains the right to increase the surcharges if there are changes to the rates in the future. (T)

iii. **Current Compliance Status of Service Area**: **Appendix B** to this schedule provides the Mandatory Reduction Percentage adopted by the Water Board for each area, and the actual cumulative savings for each area, **as of the date specified in Appendix A.** ***Drought Surcharges will be applied based on Tier A and B excess water usage beginning with the first day of each billing period that starts on or after March 31, 2016.*** (C)

iv. **Updates**: An increase in the excess usage designated in Tier A, an increase in Customer Water Budgets, or a decrease in Drought Surcharge rates, are "less restrictive" tariff changes that may be implemented via a Tier 1 advice letter.

A decrease in the excess usage designated in Tier A, a decrease in Customer Water Budgets, or an increase in Drought Surcharge rates are "more restrictive" tariff changes that shall be implemented by filing a Tier 2 advice letter. Cal Water shall notify its customers, and provide each customer with a summary of the changes by means of a bill insert or direct mailing, prior to the effective date of a more restrictive tariff change.

A service area's compliance status, which determines the amount of excess usage designated for Tiers A and B, shall be updated no more than once every 90 days, or to implement different requirements of the Water Board as needed. (C)

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

 (T)

F. STAGE TWO WATER USE RESTRICTIONS (continued)

1. MANDATORY WATER BUDGETS AND BANKING (STAGE 2) (continued) (T)

e. **Water Banking**: Customers will be able to "bank" unused units of water from their water budget for use in future billing periods. (L)

i. Should a customer exceed his or her monthly budget, any banked units of water will be applied to the overage before drought surcharges are imposed.

ii. Banked water units can only offset future usage that exceeds a water budget.

f. **Water Budget Appeals:** If specified criteria are met, a customer can file an appeal to have his or her water budget increased.

i. The reasons appeals may be considered include: water use necessary for health and safety; business or economic needs, including process-water requirements; significant long-term savings achieved since 2011; average monthly water use in 2014 that is at least 50% lower than district average; and large animal care (e.g. horse).

ii. All appeals must be submitted online at **www.calwater.com/appeal** or via a written application form (available at **www.calwater.com/appeal** or from our local Customer Center).

iii. Surcharges incurred during the appeal review period may be waived if the review takes an extended period of time.

2. WASTEFUL USES OF WATER (STAGE 2)

Cal Water may continue to impose the restrictions on the wasteful use of water as outlined in Stage One, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency.

G. STAGE THREE WATER USE RESTRICTIONS

1. MANDATORY WATER BUDGETS AND BANKING (STAGE 3)

Water budgets will be based on a customer's consumption during a historical base period and will include a percentage reduction designed to meet necessary water-use reductions. Cal Water may include provisions such as minimum water budgets to protect the health and safety of customers, and water banking allowing customers additional flexibility with regard to their required reductions.

In addition to the normal rate paid for the unit of water, a drought surcharge will be charged to a customer for each unit of water used over the established water budget for the billing period. Cal Water may implement surcharges up to three (3) times those charged in Stage 2. Cal Water will establish an appeals process for customers that will allow for requests for increased water budgets. (L)

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

(T)

G. STAGE THREE WATER USE RESTRICTIONS (Continued)

[Stage 3 (cont.)]

2. WASTEFUL USES OF WATER (STAGE 3)

The following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to previous Stages are underlined. (The following restrictions are the same as those provided in Stage 3 of Rule 14.1.)

a. Outdoor Irrigation Restrictions (Stage 3)

i. Irrigating ornamental landscapes with potable water is limited to no more than **two (2) days per week,** on a schedule established and posted by Cal Water on its website or otherwise provided to customers by bill message, bill insert, direct mail, or email, or as follows:

1. Customers with even-numbered addresses may irrigate on Saturdays and Tuesdays (previous Stages allowed Thursdays as well).
2. Customers with odd-numbered addresses may irrigate on Sundays and Wednesdays (previous Stages allowed Fridays as well).
3. Customers without a street address may irrigate on Saturdays and Tuesdays (previous Stages allowed Thursdays as well).
4. Notwithstanding the foregoing restrictions, irrigation of special landscape areas or commercial nurseries may occur as needed, provided that the customer who wishes to irrigate a special landscape area or commercial nursery presents Cal Water with a plan to achieve water use reductions commensurate with those that would be achieved by complying with foregoing restrictions.
5. Notwithstanding the foregoing restrictions, when a city, county, or other local public agency in one of Cal Water's service areas duly adopts restrictions on the number of days or hours of the day that customers may irrigate which are different than those adopted by Cal Water, Cal Water may enforce the city, county, or other local public agency's restrictions.

ii. Irrigating ornamental landscape with potable water is prohibited during the hours between **8:00 a.m. and 6:00 p.m.**

iii. The foregoing restrictions do **not** apply to:

1. Landscape irrigation zones that exclusively use drip irrigation systems and/or micro spray irrigation system;
2. Irrigating ornamental landscapes with the use of a hand-held bucket or similar container, a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored, or for the express purpose of adjusting or repairing an irrigation system.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixtures and/or irrigation system must be repaired within **two (2) business days** of written notification by Cal Water, unless other arrangements are made with Cal Water.

c. **Prohibited** Uses of Water: Customers are prohibited from using potable water for the following actions:

i. The application of potable water to landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures (note: this provision appears under Section E in Rule 14.1);

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

(T)

G. STAGE THREE WATER USE RESTRICTIONS (Continued)

[Stage 3 (cont.)]

ii. The use of a hose that dispenses potable water to wash vehicles, including cars, trucks, buses, boats, aircraft, and trailers, whether motorized or not, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use (note: this provision appears under Section E in Rule 14.1).

iii. The application of potable water to driveways and sidewalks;

iv. The use of potable water in a water feature, except where the water is part of a recirculating system;

v. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;

vi. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

vii. Irrigation of ornamental turf on public street medians with potable water;

viii. Irrigation outside of newly constructed homes and buildings with potable water in a manner inconsistent with regulations or other requirements established by the California Building Standards Commission and the Department of Housing and Community Development.

ix. Use of potable water for street cleaning with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible);

x. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used.

d. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.

e. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Schedule.

f. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

H. STAGE FOUR WATER USE RESTRICTIONS

1. MANDATORY WATER BUDGETS AND BANKING (STAGE 4)

Water budgets will be based on a customer's consumption during a historical base period and will include a percentage reduction designed to meet necessary water-use reductions. Cal Water may include provisions such as minimum water budgets to protect the health and safety of customers, and water banking allowing customers additional flexibility with regard to their required reductions.

In addition to the normal rate paid for the unit of water, a drought surcharge will be charged to a customer for each unit of water used over the established water budget for the billing period. For Stage 4, Cal Water may implement surcharges up to three (3) times those charged in Stage 2. Cal Water may require customer consumption reductions of up to 50%.

Cal Water will establish an appeals process for customers that will allow for requests for increased water budgets.

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

(T)

H. STAGE FOUR WATER USE RESTRICTIONS (Continued)

[Stage 4 (cont.)]

2. WASTEFUL USES OF WATER (STAGE 4)

The following restrictions may be imposed by Cal Water, except where necessary to address an immediate health or safety need or to comply with a term or condition in a permit issued by a state or federal agency. Differences from or additions to previous Stages are underlined. (The following restrictions are the same as those provided in Stage 4 of Rule 14.1.)

a. Irrigating ornamental landscape with potable water is prohibited, except when a hand-held bucket or a similar container, or a continuously monitored hose which is fitted with an automatic shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use or monitored is used to maintain vegetation, including trees and shrubs.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the customer's plumbing fixtures or irrigation system must be repaired within **one (1) business day** of written notification by Cal Water, unless other arrangements are made with Cal Water.

c. Prohibited Uses of Water: Customers are prohibited from using potable water for the following actions:

i. The application of potable water to landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;

ii. The use of a hose that dispenses potable water to wash vehicles, including cars, trucks, buses, boats, aircraft, and trailers, whether motorized or not, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use.

iii. The application of potable water to driveways and sidewalks;

iv. The use of potable water in a water feature, except where the water is part of a recirculating system;

v. The application of potable water to outdoor landscapes during and within forty-eight (48) hours after measurable rainfall;

vi. The serving of drinking water other than upon request in eating or drinking establishments, including but not limited to restaurants, hotels, cafes, cafeterias, bars, or other public places where food or drink are served and/or purchased;

[Note that items previously identified as (ix) and (x) in Stage 3 have been eliminated.]

vii. Use of potable water for street cleaning with trucks (previous Stage allowed certain exceptions);

viii. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses (previous Stages allowed certain exceptions).

d. Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily. The hotel or motel shall prominently display notice of this option in each guest room using clear and easily understood language.

e. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds with potable water is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the implementation of any staged mandatory restrictions of water use as described in this Schedule.

f. Other duly adopted restrictions on the use of potable water as prescribed from time to time by the Commission or other authorized government agencies are incorporated herein by reference.

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

(T)

I. SAMPLE TABLES WITH TIER A AND TIER B EXCESS USAGE AMOUNTS

(N)

1. FOR DISTRICTS IN COMPLIANCE WITH MANDATORY REDUCTIONS

For the purposes of applying Drought Surcharges, the sample table below identifies the number of units over a customer's Water Budget (the excess usage) that falls within Tiers A and B in a district whose cumulative savings meet the Water Board's Mandatory Reduction Percentage as of the date identified in **Appendix A**.

For Districts in Compliance with Mandatory Water Reduction Targets

District	Service Area	Tier A - No Surcharges	Tier B - Drought Surcharges Applied			Minimum Water Budget	Rate Support Fund Area
		Units Over Water Budget	Units Over Water Budget	Surcharge per unit (Non-LIRA Customers)	Surcharge per unit (LIRA Customers)	(Ccf per month)	(RSF)
Antelope Valley	Fremont Valley & Lake Hughes	1-6	7+	$4.5200	$2.2600	5	RSF Area
	Lancaster	1-5	6+	$7.1180	$3.5590	5	
	Leona Valley	1-4	5+	$4.5200	$2.2600	5	RSF Area
Bakersfield		1-6	7+	$4.1868	$2.0934	7	
Bayshore	Mid-Peninsula	1-3	4+	$10.0000	$5.0000	6	
	South San Francisco	1-3	4+	$5.6492	$2.8246	6	
Bear Gulch		1-5	6+	$10.0000	$5.0000	6	
Chico		1-6	7+	$3.1314	$1.5657	6	
Dixon		1-3	4+	$7.9402	$3.9701	7	
Dominguez		1-3	4+	$6.9934	$3.4967	7	
East Los Angeles		1-4	5+	$3.7605	$1.8803	9	
Grand Oaks		1-6	7+	$2.1236	$1.0618	5	
Hermosa Redondo		1-3	4+	$9.1586	$4.5793	5	
Kern River Valley		1-3	4+	$4.5200	$2.2600	4	RSF Area
King City		1-4	5+	$6.7536	$3.3768	9	
Livermore		1-4	5+	$7.6194	$3.8097	6	
Los Altos		1-5	6+	$8.1608	$4.0804	6	
Marysville		1-4	5+	$5.1470	$2.5735	6	
Oroville		1-5	6+	$6.1840	$3.0920	6	
Palos Verdes		1-6	7+	$9.5358	$4.7679	6	
Redwood Valley		1-4	5+	$4.5200	$2.2600	4	RSF Area
Salinas		1-3	4+	$5.7776	$2.8888	7	
Selma		1-5	6+	$3.0122	$1.5061	8	
Stockton		1-4	5+	$5.5506	$2.7753	7	
Visalia		1-5	6+	$2.9796	$1.4898	7	
Westlake		1-6	7+	$9.2378	$4.6189	6	
Willows		1-5	6+	$4.1356	$2.0678	6	

(N)

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

(T)

I. SAMPLE TABLES WITH TIER A AND TIER B EXCESS USAGE AMOUNTS

(N)

2. FOR DISTRICTS NOT IN COMPLIANCE WITH MANDATORY REDUCTIONS

For the purposes of applying Drought Surcharges, the sample table below identifies the number of units over a customer's Water Budget (the excess usage) that falls within Tiers A and B in a district whose cumulative savings do NOT meet the Water Board's Mandatory Reduction Percentage as of the date identified in **Appendix A**.

For Districts not in Compliance with Mandatory Water Reduction Targets

District	Service Area	Tier A - No Surcharges	Tier B - Drought Surcharges Applied			Minimum Water Budget	Rate Support Fund Area
		Units Over Water Budget	Units Over Water Budget	Surcharge per unit (Non-LIRA Customers)	Surcharge per unit (LIRA Customers)	(CCF per month)	(RSF)
Antelope Valley	Fremont Valley & Lake Hughes	1	2+	$4.5200	$2.2600	5	RSF Area
	Lancaster	1	2+	$7.1180	$3.5590	5	
	Leona Valley	1	2+	$4.5200	$2.2600	5	RSF Area
Bakersfield		1	2+	$4.1868	$2.0934	7	
Bayshore	Mid-Peninsula	1	2+	$10.0000	$5.0000	6	
	South San Francisco	1	2+	$5.6492	$2.8246	6	
Bear Gulch		1	2+	$10.0000	$5.0000	6	
Chico		1	2+	$3.1314	$1.5657	6	
Dixon		1	2+	$7.9402	$3.9701	7	
Dominguez		1	2+	$6.9934	$3.4967	7	
East Los Angeles		1	2+	$3.7605	$1.8803	9	
Grand Oaks		1	2+	$2.1236	$1.0618	5	
Hermosa Redondo		1	2+	$9.1586	$4.5793	5	
Kern River Valley		1	2+	$4.5200	$2.2600	4	RSF Area
King City		1	2+	$6.7536	$3.3768	9	
Livermore		1	2+	$7.6194	$3.8097	6	
Los Altos		1	2+	$8.1608	$4.0804	6	
Marysville		1	2+	$5.1470	$2.5735	6	
Oroville		1	2+	$6.1840	$3.0920	6	
Palos Verdes		1	2+	$9.5358	$4.7679	6	
Redwood Valley		1	2+	$4.5200	$2.2600	4	RSF Area
Salinas		1	2+	$5.7776	$2.8888	7	
Selma		1	2+	$3.0122	$1.5061	8	
Stockton		1	2+	$5.5506	$2.7753	7	
Visalia		1	2+	$2.9796	$1.4898	7	
Westlake		1	2+	$9.2378	$4.6189	6	
Willows		1	2+	$4.1356	$2.0678	6	

(N)

(continued)

Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

APPENDIX A to Schedule 14.1 - *NOT IN EFFECT* (C)

Drought Surcharge Tiers (applies to all metered customers of potable water) (C)

District	Service Area	In Compliance with Mandatory Reduction? As of 2/1/16	Tier A - No Surcharges	Tier B - Drought Surcharges Applied			Minimum Water Budget	Rate Support Fund Area
			Units Over Water Budget	Units Over Water Budget	Surcharge per unit (Non-LIRA Customers)	Surcharge per unit (LIRA Customers)	(CCF per month)	(RSF)
Antelope Valley	Fremont Val. /Lake Hughes		1-6	7+	$4.5200	$2.2600	5	RSF Area
	Lancaster		1-5	6+	$7.1180	$3.5590	5	
	Leona Valley		1-4	5+	$4.5200	$2.2600	5	RSF Area
Bakersfield			1-6	7+	$4.1868	$2.0934	7	
Bayshore	Mid-Peninsula		1-3	4+	$10.0000	$5.0000	6	
	South San Francisco		1-3	4+	$5.6492	$2.8246	6	
Bear Gulch			1-5	6+	$10.0000	$5.0000	6	
Chico			1-6	7+	$3.1314	$1.5657	6	
Dixon			1-3	4+	$7.9402	$3.9701	7	
Dominguez			1-3	4+	$6.9934	$3.4967	7	
East Los Angeles			1-4	5+	$3.7605	$1.8803	9	
Grand Oaks			1-6	7+	$2.1236	$1.0618	5	
Hermosa Redondo		**No**	1	2+	$9.1586	$4.5793	5	
Kern River Valley		**No**	1	2+	$4.5200	$2.2600	4	RSF Area
King City			1-4	5+	$6.7536	$3.3768	9	
Livermore			1-4	5+	$7.6194	$3.8097	6	
Los Altos			1-5	6+	$8.1608	$4.0804	6	
Marysville			1-4	5+	$5.1470	$2.5735	6	
Oroville			1-5	6+	$6.1840	$3.0920	6	
Palos Verdes		**No**	1	2+	$9.5358	$4.7679	6	
Redwood Valley (all)			1-4	5+	$4.5200	$2.2600	4	RSF Area
Salinas			1-3	4+	$5.7776	$2.8888	7	
Selma			1-5	6+	$3.0122	$1.5061	8	
Stockton			1-4	5+	$5.5506	$2.7753	7	
Visalia		**No**	1	2+	$2.9796	$1.4898	7	
Westlake		**No**	1	2+	$9.2378	$4.6189	6	
Willows			1-5	6+	$4.1356	$2.0678	6	

(a) The Drought Surcharge is equal to two (2) times the highest residential tier rate with a $10.00 maximum EXCEPT:
The Drought Surcharge in Rate Support Fund (RSF) areas is equal to $4.52.
The Drought Surcharge for districts with a 10% or less water reduction requirement is equal to the highest residential tier rate.

(b) The Drought Surcharge for LIRA customers is 50% of the Drought Surcharge for Non-LIRA customers.

(c) The Minimum Water Budget is set at 55 gpcd (gallons per capita per day) multiplied by the number of people per household for the area according to the U.S. Census.

(d) A district is determined to be in compliance if it has met or is within one percent of its Mandatory Reduction requirement.

(continued)

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Schedule No. 14.1

WATER SHORTAGE CONTINGENCY PLAN
WITH STAGED MANDATORY REDUCTIONS AND DROUGHT SURCHARGES (continued)

 (T)

APPENDIX B to Schedule 14.1 (T)

CUMULATIVE WATER SAVED COMPARED TO MANDATORY REDUCTIONS (C)

Urban Water Supplier	Cumulative Percentage Saved	Water Board's Target Percentage	In Compliance?
	Jun. 2015 to Jan. 2016 (as compared to 2013) *	Mandatory Reduction *	As of Feb. 1, 2016 **
California Water Service Company Antelope Valley	47.8%	36%	
California Water Service Company Bakersfield	31.1%	32%	
California Water Service Company Bear Gulch	35.0%	36%	
California Water Service Company Chico District	38.3%	32%	
California Water Service Company Dixon, City of	30.2%	28%	
California Water Service Company Dominguez	16.8%	16%	
California Water Service Company East Los Angeles	15.5%	8%	
California Water Service Company Hermosa Redondo	18.3%	20%	No
California Water Service Company Kern River Valley	20.1%	28%	No
California Water Service Company King City	21.8%	12%	
California Water Service Company Livermore	39.9%	24%	
California Water Service Company Los Altos/Suburban	38.1%	32%	
California Water Service Company Marysville	26.2%	24%	
California Water Service Company Mid Penninsula	26.6%	16%	
California Water Service Company Oroville	28.5%	28%	
California Water Service Company Palos Verdes	28.9%	36%	No
California Water Service Company Redwood Valley	31.7%	16%	
California Water Service Company Salinas District	24.9%	16%	
California Water Service Company Selma	39.0%	32%	
California Water Service Company South San Francisco	20.8%	8%	
California Water Service Company Stockton	22.6%	20%	
California Water Service Company Visalia	25.6%	32%	No
California Water Service Company Westlake	33.5%	36%	No
California Water Service Company Willows	30.1%	28%	

(C)

* The figures in Appendix B are from the State Water Resources Control Board's website at:
http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/docs/2016feb/suppliercompliance_022516.pdf (C)

(D)

** A district is determined to be in compliance if it has met or is within one percent of its Mandatory Reduction requirement. (N)

[end]

Appendix H: Conservation Master Plan

CONSERVATION MASTER PLAN 2021 – 2025

April 2021

Visalia District

California Water Service

Prepared by M.Cubed

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List of Acronyms

AB	Assembly Bill
AF	Acre-feet (one AF equals 325,851 gallons)
AMI	Advanced metering infrastructure
AMR	Automatic meter reading
AWE	Alliance for Water Efficiency
BCR	Benefit Cost Ratio
BMP	Best Management Practice
CalWEP	California Water Efficiency Partnership
CII	Commercial, industrial, and institutional
CPUC	California Public Utilities Commission
CUWCC	California Urban Water Conservation Council
EO	Executive Order
GPCD	Gallons per capita per day
GPF	Gallons per flush
GPM	Gallons per minute
GRC	General Rate Case
HET	High efficiency toilet
HEU	High efficiency urinal
HEW	High efficiency clothes washer
IOU	Investor-owned utility
MaP	Maximum performance toilet testing program
MGD	Million gallons per day
MOU	Memorandum of Understanding Regarding Urban Water Conservation in California
SB	Senate Bill
SB X7-7	Senate Bill X7-7 Water Conservation Act of 2009
ULFT	Ultra low flow toilet
UWMP	Urban Water Management Plan
WF	Water Factor
WSCP	Water Shortage Contingency Plan

1 Introduction

1.1 Master Plan Scope and Objectives

Cal Water is committed to helping its customers use water efficiently and has developed a range of water conservation programs to support this goal. To ensure that it is providing the right mix of programs in a cost-effective manner, Cal Water routinely conducts comprehensive conservation program analysis and planning. This is done on a five-year cycle in tandem with the Urban Water Management Plan (UWMP). The results of this planning for the Visalia District are summarized in this report, which covers the period 2021 to 2025.

The main purposes of this Conservation Master Plan are to:

- Serve as a broad guidance document that helps inform annual conservation activities, such as program levels, staffing, and budget needs both internally and for stakeholders.
- Summarize the mix of conservation measures that Cal Water plans to implement going forward, including the estimated water savings, costs, and effects on water demand.
- Explain the evaluation process and factors considered in selecting conservation measures.
- Provide an update to the 2016-20 Conservation Master Plan as part of a five-year review cycle to assess program performance and identify the need for any adjustments; and
- Ensure Cal Water districts are positioned to comply with the state's Making Water Conservation a California Way of Life regulations.

1.2 Relationship to GRC and UWMP

Cal Water's operations are regulated by the California Public Utilities Commission (CPUC), which approves the budgets and rates for each Cal Water district every three years in a General Rate Case (GRC) proceeding. The district's conservation programs and expenditures are part of the GRC proceeding. The last GRC covered the three-year period 2020-22 and a new GRC covering the period 2023-25 is presently underway. The conservation programs and budgets for 2021 in this plan reflect those authorized in the last GRC while those recommended for 2023-25 reflect programs and budgets being proposed by Cal Water in the current GRC.

This plan is an update to the Conservation Master Plan Cal Water completed in 2016 covering the period 2016-20. It constitutes the primary source of information on historical and proposed implementation of conservation programs reported in the Visalia District's 2020 UWMP. A copy of this plan is provided as an appendix to the UWMP.

1.3 Relationship to Water Shortage Contingency Plan

The Water Conservation Master Plan is distinct from Cal Water's Water Shortage Contingency Plan (WSCP), which is also part of each district's UWMP. While the main purpose of the WSCP is to provide a blue-print for responding to water shortage emergencies caused by drought or other events resulting in temporary disruption to water supplies, the goal of the Water Conservation Master Plan is to provide a blue-print for providing education, assistance, and incentives to help customers use water efficiently all the time. Regardless of drought, water in California is an increasingly scarce resource. Investing in water use efficiency has repeatedly been shown to be a cost-effective way to ensure adequate supply of water for the future. While the conservation programs Cal Water implements are critically important during periods of water shortage, their primary purpose is to help make sure Cal Water can reliably serve customer water needs far into the future.

1.4 Report Organization

The remainder of this report is organized as follows:

- Section 2 provides a brief overview of the District, including the communities it serves, its sources of water supply, and its customer water demands.
- Section 3 discusses Cal Water's conservation goals and accomplishments, in particular with respect to the Water Conservation Act of 2009, CPUC conservation requirements, and the state's pending Making Water Conservation a California Way of Life regulations.
- Section 4 describes the conservation programs Cal Water currently offers to its customers and discusses new programs Cal Water intends to offer.
- Section 5 presents the water savings, costs, and benefits expected from the recommended conservation programs.
- Section 6 discusses metrics used to assess program performance.
- Section 7 addresses program monitoring and future updates to the Conservation Master Plan.

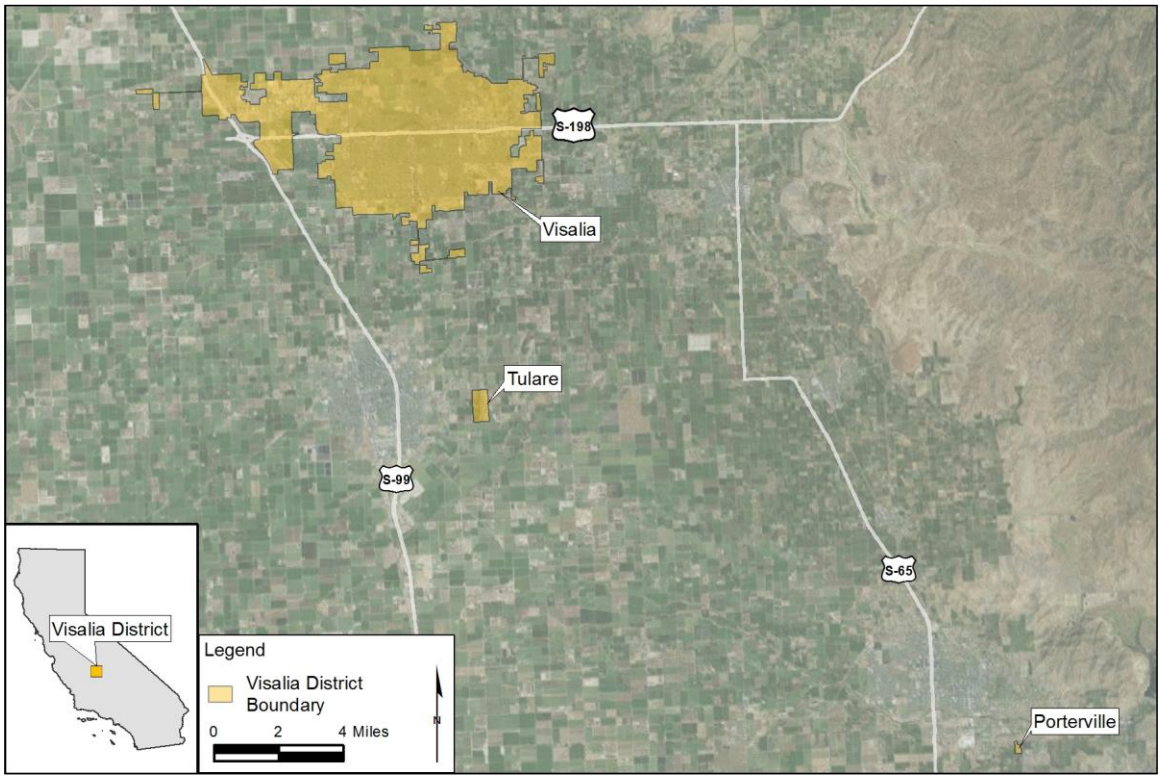
2 District Overview

District Quick Facts:

- Communities Served: City of Visalia and segments of unincorporated Tulare County including the communities of Goshen, Mullen, and Tulco
- Population served in 2020: 147,032
- Residential Customers: 91% of total services and 70% of total use
- Sources of Supply: 100% local groundwater
- Average Annual Water Deliveries Last Five Years: 28,400 AF
- Average Per Capita Water Use Last Five Years: 176 GPCD

The Visalia District was formed in 1926 with the purchase of the Visalia Water Company. It is in Tulare County, serving the City of Visalia and segments of unincorporated Tulare County including the communities of Goshen, Mullen, and Tulco. The District delivers local groundwater and operates 72 wells across four service areas. It delivers up to 51 million gallons of water per day to more than 45,000 service connections. A map of the service area boundaries is shown in Figure 1.

Figure 1. Visalia District Service Area Boundaries

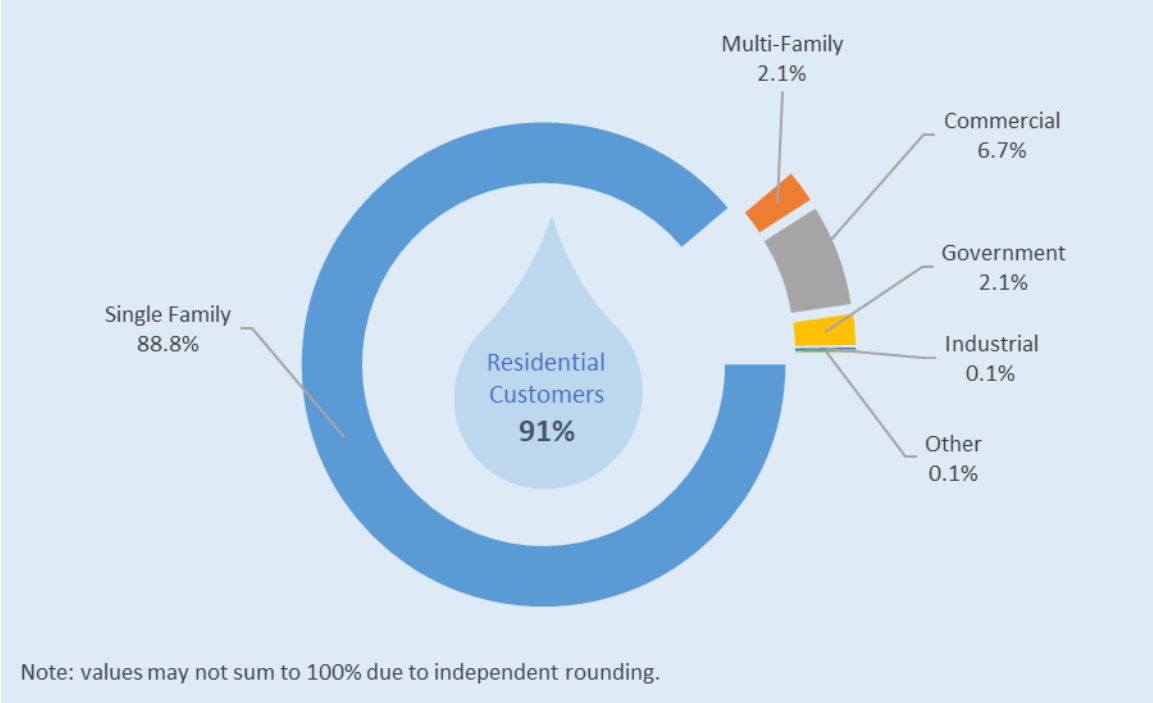


Cal Water estimates the service area population was 147,032 in 2020. Service area population has been growing at an annual rate of more than one percent for the past 15 years. Between 2016 and 2020, the District's population grew at an average rate of 1.2 percent per year.

Groundwater is the District's sole source of water supply. The District delivers water to residential, commercial, industrial, and governmental customers. Residential customers account for 91 percent of water services in the District. The share of services in 2020 by customer category is shown in Figure 2. The share of total water sales by customer category over the period 2016-2020 is shown in Figure 3. Residential customers accounted for 70 percent of water use over this period.

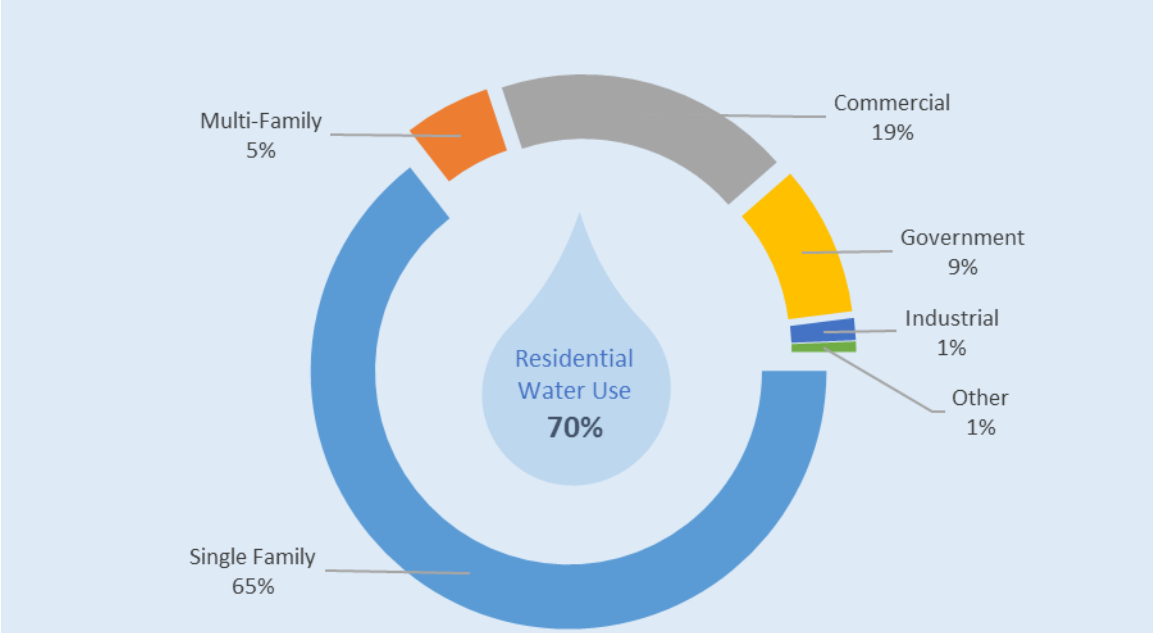
Annual demand has averaged 28,400 acre-feet (AF) over the five-year period 2016-2020. Total annual demands since 1980 are shown in Figure 4.

Figure 2. Share of Services in 2020 by Customer Category



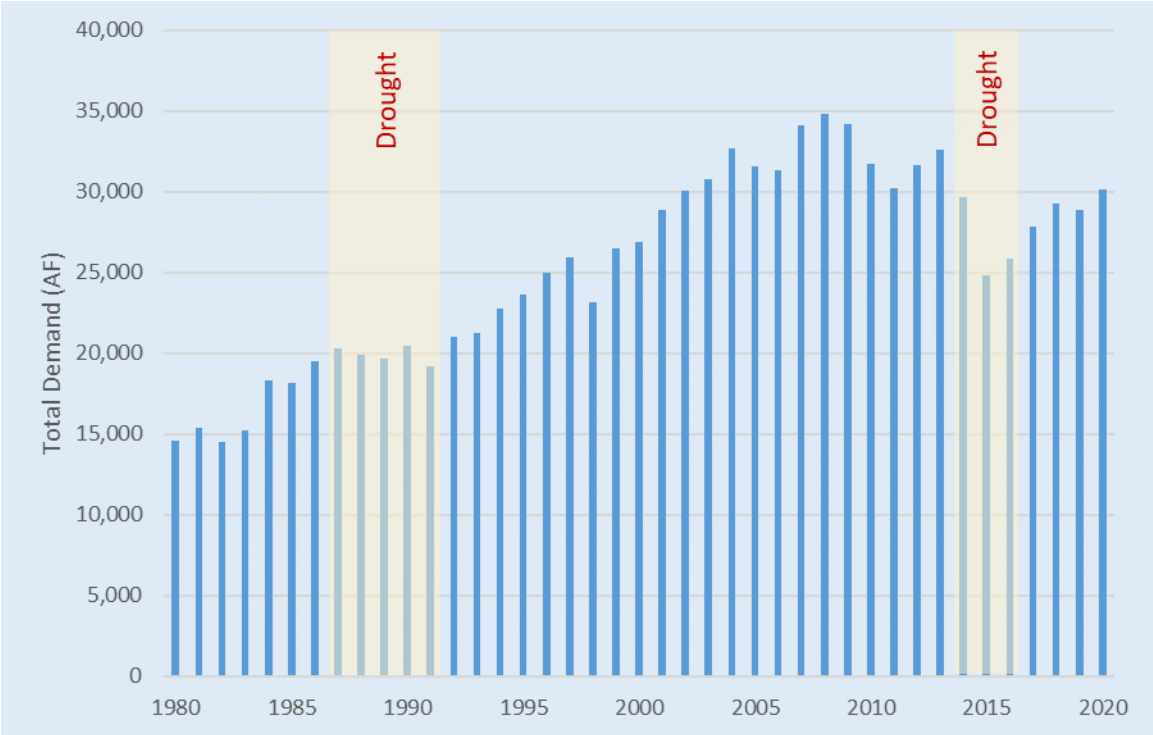
Note: values may not sum to 100% due to independent rounding.

Figure 3. Share of Water Sales by Customer Category: 2016-2020



Note: values may not sum to 100% due to independent rounding.

Figure 4. Total Demand and Sources of Supply: 1980 - 2020



3 Conservation Goals and Progress

In this section, conservation goals and progress for the Visalia District are presented.

3.1 Conservation Program Activity and Water Savings

Cal Water uses the Alliance for Water Efficiency's Water Conservation Tracking Tool to track program activity and estimate water savings. Conservation program activity for 2016-20 is shown in Table 1. This activity is expected to generate water savings of 142 AF/year and cumulative lifetime savings of 2,130 AF.

Table 1. Conservation Program Activity and Water Savings: 2016-20

1. Plumbing Fixture Replacement	2016 – 2020 Total Activity
Toilets & Urinals (number distributed)	1,521
Clothes Washers (number distributed)	333
Consv. Kits (number distributed)	412
2. Irrigation Equip./Landscape Upgrades	
Smart Controllers (number distributed)	553
Nozzles & Spray Bodies (number distributed)	3,014
Turf Replacement (sq ft removed)	167,436
3. Residential Customer Assistance	
Surveys/Audits (homes receiving)	25
4. Non-Residential Customer Assistance	
Surveys/Audits (sites receiving)	12
Large Landscape Reports (sites receiving)	111
Average Annual Water Savings (AF)	**142**
Cumulative Lifetime Water Savings (AF)	**2,130**

3.2 Plumbing Codes and Water Use Efficiency Standards

Cal Water's conservation programs are operated within the context of existing plumbing codes and water use efficiency standards that are designed to improve the future water use efficiency of major water using appliances and fixtures, such as toilets and clothes washers, as well as water used outdoor for landscaping. Cal Water estimates that plumbing codes and water use efficiency standards will cumulatively save more than 22,200 AF in the District over the next 25 years. The primary drivers for the expected water savings are as follows:

- AB 715, enacted in 2007, requires that any toilet or urinal sold or installed in California on or after January 1, 2014 cannot have a flush rating exceeding 1.28 and 0.5 gallons per flush, respectively. AB 715 superseded the state's previous standards for toilet and urinal water use set in 1991 of 1.6 and 1.0 gallons per flush, respectively. On April 8, 2015, in response to the Governor's Emergency Drought Response Executive Order (EO B-29-15), the California Energy Commission approved new standards for urinals requiring that they not use more than 0.125 gallons per flush, 75% less than the standard set by AB 715.

- Water use standards for residential and commercial clothes washers and dishwashers are established by the U.S. Department of Energy through its authority under the federal Energy Policy and Conservation Act. Water use efficiency is summarized by the water factor for the appliance which measures the gallons of water used per cycle per cubic foot of capacity. A typical top-loading residential clothes washer manufactured in the 1990s had a water factor of around 12. In 2015, the allowable water factor for top- and front-loading residential clothes was reduced to 8.4 and 4.7, respectively. In 2018, the water factor standard for top-loading residential clothes washers was reduced to 6.5. In 2010 the allowable water factor for top- and front-loading commercial clothes washers was reduced to 8.5 and 5.5, respectively. The maximum water factor for Energy Star compliant top- and front-loading washers is 3.7 and 4.3, respectively. An Energy Star compliant washer uses about two-thirds less water per cycle than washers manufactured in the 1990s. There also are federal dishwasher efficiency standards. The maximum water use for standard and compact sized dishwashers is 5.0 and 3.5 gallons per cycle, respectively.

- New construction and renovations in California are subject to CalGreen Code requirements. CalGreen includes prescriptive indoor provisions for maximum water consumption of plumbing fixtures and fittings in new and renovated properties. CalGreen also allows for an optional performance path to compliance, which requires an overall aggregate 20% reduction in indoor water use from a calculated baseline using a set of worksheets provided with the CalGreen guidelines.

- SB 407, enacted in 2009, mandates that existing buildings in California come up to current state plumbing fixture standards. This law establishes requirements that residential and commercial property built and available for use on or before January 1, 1994 replace plumbing fixtures that are not water conserving, defined as "noncompliant plumbing fixtures" as follows:

    - any toilet manufactured to use more than 1.6 gallons of water per flush;

    - any urinal manufactured to use more than one gallon of water per flush;

  - any showerhead manufactured to have a flow capacity of more than 2.5 gallons of water per minute; and

  - any interior faucet that emits more than 2.2 gallons of water per minute.

- For single-family residential property, the SB 407 compliance date was January 1, 2017. For multi-family and commercial property, it was January 1, 2019.

- The law does not include enforcement mechanisms ensuring conversion by these dates. However, it does require retrofit upon resale of property. SB 837, passed in 2011, reinforced this requirement by requiring the transfer disclosure statement include disclosure of compliance with SB 407.

California also has adopted regulations governing future use of water for landscape.

- The California Water Commission approved the State's updated Model Water Efficient Landscape Ordinance (MWELO) in 2015. MWELO or a locally adopted equivalent ordinance limits how much water new and rehabilitated residential and commercial landscapes can use. For residential landscapes, the maximum allowed water allowance (MAWA) is 55% of the amount of water that healthy cool season turf grass would require given the local climate. For commercial landscapes, it is 45%. Variances are allowed for special landscaping, such as play fields and parks, or landscaping irrigated with recycled water.

- CalGreen requires that automatic irrigation controllers for new landscaping installed by a builder be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plant water needs as weather or soil conditions change.

- Starting October 1, 2020, spray sprinkler bodies sold or offered for sale in California are required to use the WaterSense test procedure (Version 1.0, September 21, 2017) and must meet state standards (California Code of Regulations, Title 20, section 1605.3(x)(1)(A)). The new standards establish limits on maximum and average flow rate and minimum outlet pressure. Statewide, the new standards are estimated to save 15 billion gallons of water in the first year the standard is in effect and 152 billion gallons per year at full stock turnover. Consumers are expected to save about $22 per spray sprinkler body over the life of the device through reduced water use.

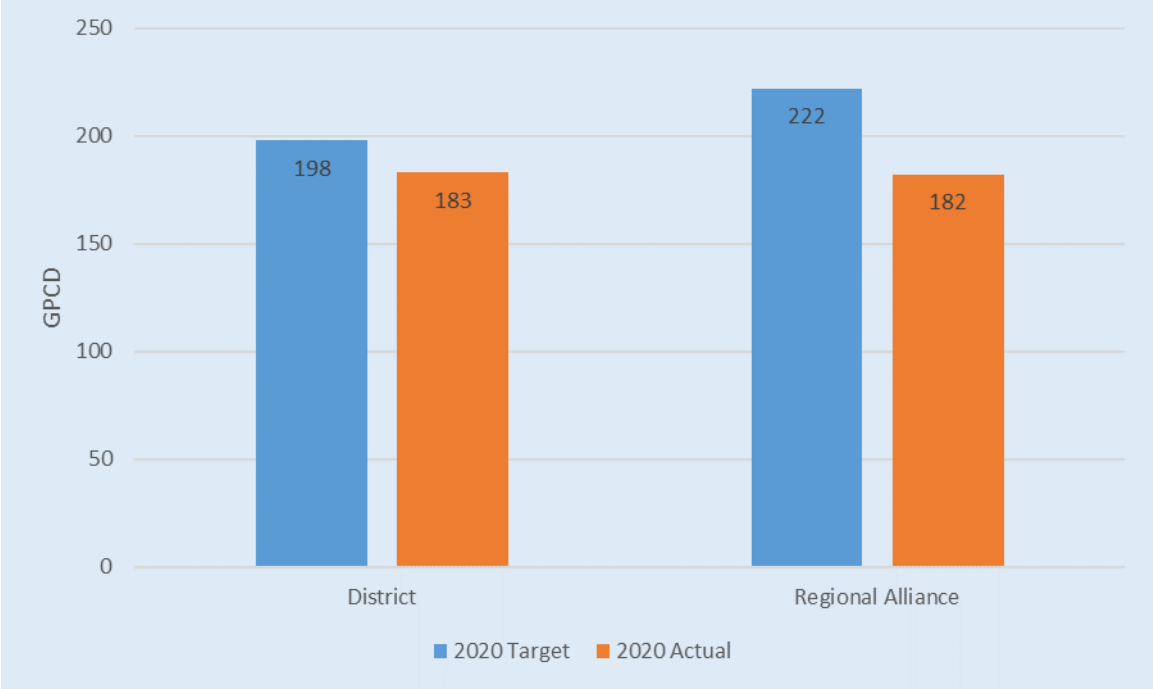
3.3 Compliance with State Urban Water Use Target

The Water Conservation Act of 2009, also known as SB X7-7, mandated a 20% reduction in per capita water use by 2020. Every urban retail water supplier was

required to establish a 2020 per capita water use target based on their historical water use. Water suppliers could also form a Regional Alliance with other retail water suppliers and meet the requirement jointly. The District formed a Regional Alliance with other Cal Water districts in the Tulare Lake Hydrologic Region. As long as either the District's or the Regional Alliance's 2020 per capita water use is below target, the District will have met the act's requirements.

Figure 5 demonstrates the District's compliance with the Water Conservation Act of 2009. Both the District's and the Regional Alliance's 2020 water use were below their respective targets. Through the concerted efforts of Cal Water and its customers, District per capita water use is now 30% below its peak reached in the mid-2000s (see Figure 6).

Figure 5. 2020 Target and Actual Per Capita Water Use

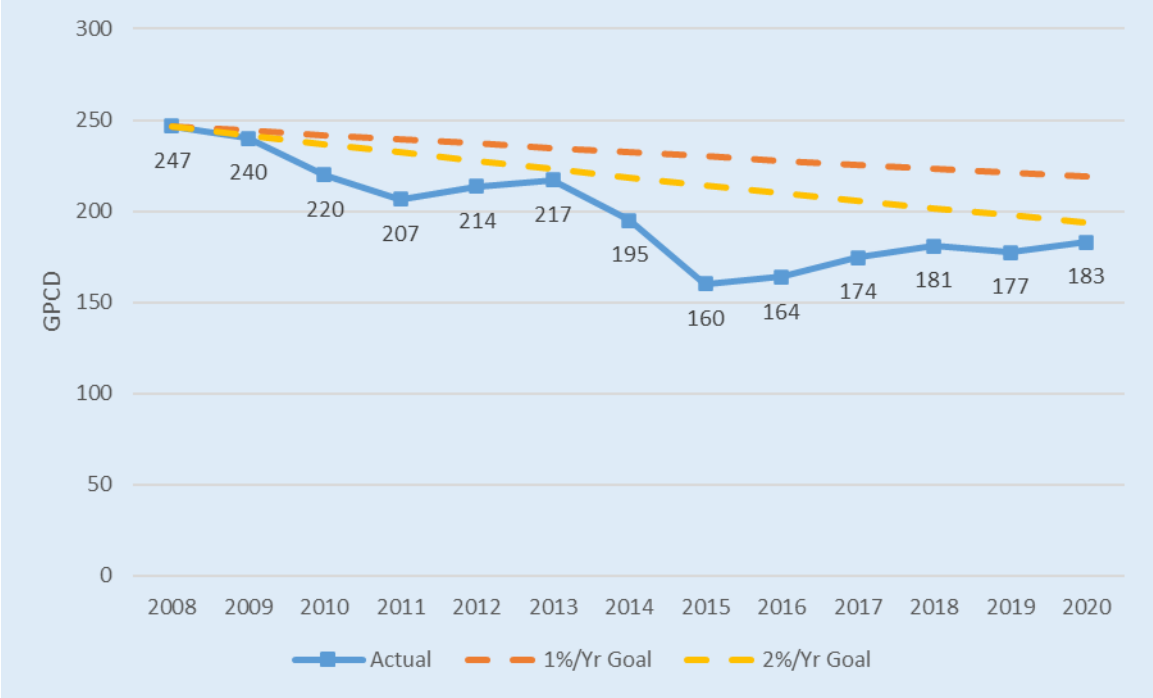


3.4 Compliance with CPUC Conservation Goals

In 2008, the California Public Utilities Commission (CPUC) established water conservation goals of 1-2% per year for Class A utilities, which includes California Water Service Company.[1] As shown in Figure 6, the District has consistently met or exceeded these goals since their adoption.

[1] CPUC Decision 08-02-036, dated February 29, 2008.

Figure 6. District Per Capita Water Use Relative to CPUC Conservation Goals



3.5 Making Water Conservation a California Way of Life

The state adopted legislation in 2018 establishing a new framework for setting urban water conservation standards and objectives.[2] This legislation built upon the April 2017 report entitled *Making Water Conservation a California Way of Life, Implementing Executive Order B-37-16*, prepared by state agencies, including the CPUC. The legislation directs the state to establish water use efficiency standards for:

- Residential Indoor Water Use
- Residential Outdoor Water Use
- Dedicated Landscape Meter Water Use
- Utility Distribution System Water Losses

Once adopted, these standards will provide the basis for a new urban water use target, or in the vernacular of the legislation, an aggregate urban water use objective. In one way, the Making Water Conservation a California Way of Life legislation carries on where the Water Conservation Act of 2009 left off – it will establish a new set of water use objectives for retail urban water suppliers. However, there are important

[2] Senate Bill 606 (Hertzberg) and Assembly Bill 1668 (Friedman).

differences. First, whereas the 2009 legislation established a long-term reduction target, under the new regulations, urban water suppliers will report water use relative to the new target annually starting in 2023 and will need to achieve the new target by January 1, 2027. Second, while the 2009 legislation applied to all urban water uses, the new legislation excludes non-residential uses other than water served by dedicated landscape meters from the target setting process. Instead, it requires DWR and the State Water Board to propose best management practices, including water audits and water management plans for non-residential customers above a certain size or volume of use, by October 1, 2021. Third, whereas the 2009 legislation set the same objective for all urban water suppliers (reduce water use by 20%), the new legislation varies the objective based on local conditions and existing levels of water use.[3]

Figure 7 shows the components of an urban water supplier's water use objective. The first four components will be based on the efficiency standards the state sets for indoor and outdoor residential water use, dedicated landscape meter water use, and utility distribution system losses. The fifth component allows for special circumstances, such as a large seasonal population or significant water use for fire protection, while the sixth component provides credit for water recycling. Added together, the six components establish the water suppliers water use objective.

For water suppliers failing to meet their water use objective, the legislation specifies progressive enforcement, as follows:

- Starting November 1, 2023, the State Water Board may issue information orders to obtain information to determine technical assistance needs for compliance (CWC 10609.26(a))

- Starting November 1, 2024, the State Water Board may issue written notices to warn suppliers of violation and request corrective actions by the next annual reporting (CWC 10609.26(b))

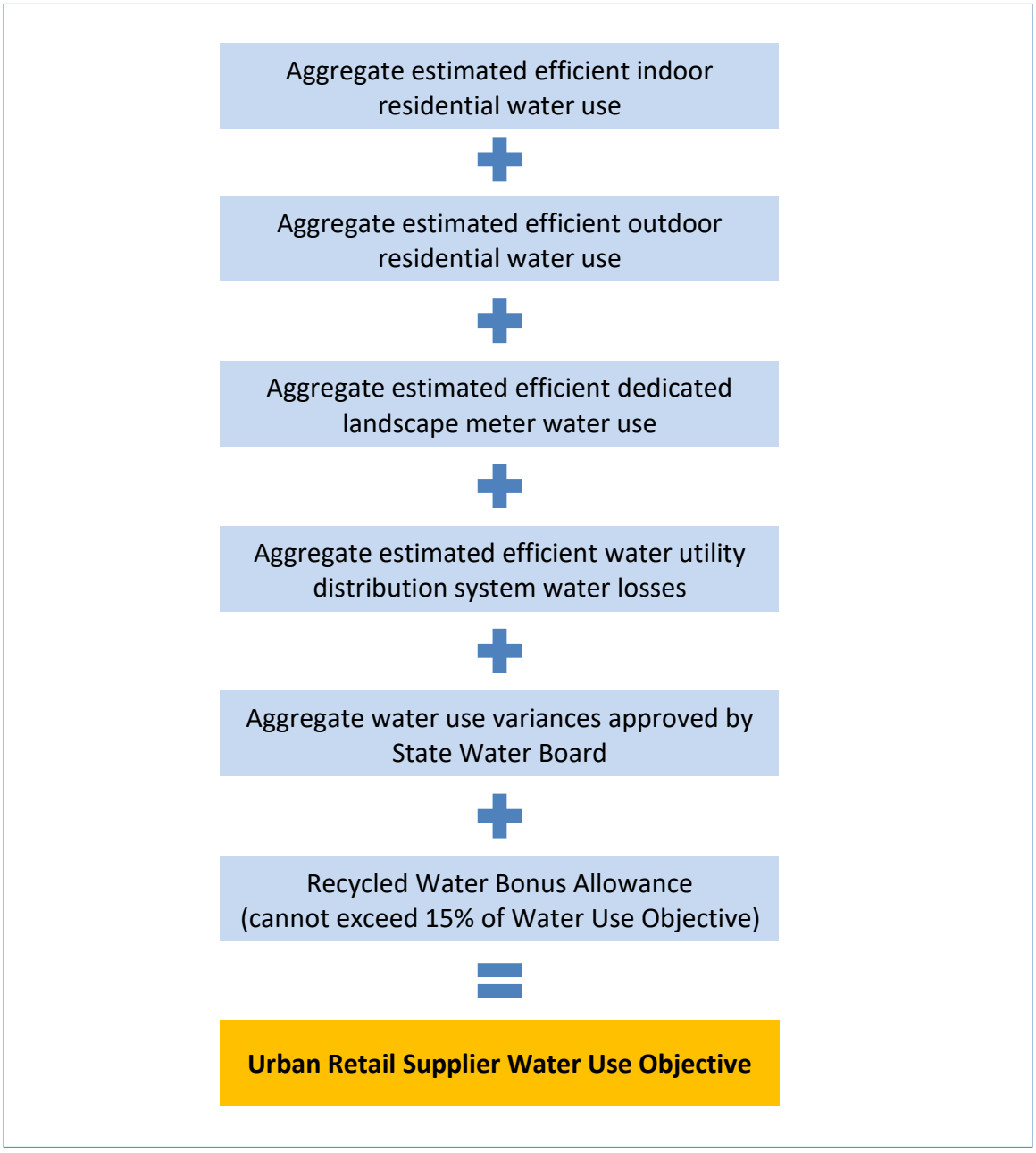
- Starting November 1, 2025, the State Water Board may issue conservation orders that may include referral to DWR for technical assistance and other local enforcement actions, including imposition of civil liability (CWC 10609.26(c)

Cal Water conducted a risk assessment to determine which of its districts may require additional resources to meet the new conservation regulations. The risk assessment considered current and projected level of overall water use, level of indoor residential water use, extent of residential and non-residential landscape area and water use, and

[3] For additional information, see Making Water Conservation a California Way of Life: Primer of 2018 Legislation on Water Conservation and Drought Planning Senate Bill 606 (Hertzberg) and Assembly Bill 1668 (Friedman).

condition of distribution system and level of water loss. Using a scoring system, the assessment ranked each district in terms of its risk of non-compliance with the individual components of the water use objective as well as the aggregate objective. The results of this assessment provided the basis for the conservation program budgets put forward in Cal Water's 2018 and 2021 general rate cases.

Figure 7. Making Water Conservation a California Way of Life Water Use Objective



4 Water Conservation Program

Cal Water centrally administers the conservation programs for its service districts. This creates both constraints and opportunities in terms of program design and implementation. The key constraint is the need to have consistent program offerings across districts. Except under unique circumstances, it is generally not logistically feasible or cost-effective to customize programs for individual districts. Also, if Cal Water offers a program in one district, customers in other districts generally expect it to also be available in their district. This puts a premium on offering a relatively small set of programs that can benefit all Cal Water customers. The advantage of central administration, however, is that it gives Cal Water scale economies and purchasing power that helps it keep program costs down, thereby improving cost-effectiveness.

4.1 Conservation Program Drivers

While Cal Water strives to develop programs that can be deployed in any of its districts, it tailors marketing, customer targeting, and implementation focus based on the needs of each district. In the Visalia District, the main drivers shaping the conservation program are summarized in Table 2.

Table 2. Main Conservation Program Drivers in Visalia District

Driver	Explanation
Groundwater Management	Groundwater is the sole source of water supply for the District. The groundwater basins from which the District pumps are designated as critically overdrafted by the state and subject to the requirements of the Ground Water Sustainability Act of 2014.
Residential Water Use	The state's Making Conservation a California Way of Life water use regulations are focused on reducing indoor and outdoor residential water use.
Landscape Water Use	The state's Making Conservation a California Way of Life water use efficiency regulations may require the District to start serving some non-residential landscapes through dedicated landscape meters and annually report water use relative to new landscape water use efficiency standards.

4.2 Customer Conservation Programs

Cal Water's conservation programs are grouped into four categories:

- Plumbing Fixture Replacement
- Irrigation Equipment/Landscape Upgrades
- Residential Customer Assistance
- Non-Residential Customer Assistance

A description of current programs in each of these categories follows. Where rebate amounts are listed, these are current rebate levels. Readers should note that rebate amounts may be adjusted in the future in response to CPUC requirements or changes to program design.

4.2.1 Plumbing Fixture Replacement

High-Efficiency Toilet Replacement – This program replaces old toilets with MaP certified high-efficiency toilets via financial rebates, direct installation, or direct distribution.[4] Current rebate amounts are up to $50/toilet for residential toilet replacement and up to $100/toilet for commercial toilet replacement.

High-Efficiency Urinal Replacement – This program replaces old urinals with high-efficiency urinals meeting the state's 0.125 gallon per flush water use standard via financial rebates and direct installation. While available to all non-residential customers, the program targets sites with higher-than-average bathroom utilization, such as restaurants and office buildings. The current rebate amount is up to $150/urinal.

Clothes Washer Replacement – This program provides a financial rebate to replace an old inefficient clothes washer with a new high-efficiency washer. The program is available to all residential and multi-family customers. The current rebate amount is up to $150/washer.

Residential Conservation Kit Distribution – This program offers residential customers conservation kits featuring a range of water-saving plumbing retrofit devices. The kits are available at no charge and include two high-efficiency showerheads (1.5 gpm), two bathroom faucet aerators (1.0 gpm), one kitchen faucet aerator (1.5 gpd), toilet leak tablets, and an outside multi-function, full-stop hose nozzle.

4.2.2 Irrigation Equipment/Landscape Upgrades

Smart Irrigation Controller Installation – This program provides a financial rebate for the installation of a smart irrigation controller that automatically adjusts watering

[4] For information on MaP certified toilets, see: https://www.map-testing.com/

schedule in response to changing weather conditions. The current rebate amount is $125/controller for residential customers and $25/station for commercial customers.

High-Efficiency Sprinkler Nozzle Rebate – This program provides a financial rebate for the installation of high-efficiency sprinkler nozzles. This program is available to all Cal Water customers. The current rebate amount is $5/nozzle.

Large Rotary Nozzle Rebate – This program provides a financial rebate for the installation of high-efficiency large rotary nozzles. This program is available to all Cal Water customers. The current rebate amount is up to $30/nozzle toward the nozzle purchase cost and up to $8/spray body toward installation cost, if installed by a C-27 licensed landscape contractor.

Spray Body with Integrated Pressure Regulation and Check Valve Rebate – This program provides a financial rebate for the installation of high-efficiency spray bodies with integrated pressure regulation. This program is available to all Cal Water customers. The current rebate amount is up to $10/body toward the spray body purchase cost and up to $8/spray body toward installation cost, if installed by a C-27 licensed landscape contractor.

Turf Replacement Rebate – This program provides a financial rebate for replacement of turf with approved drought-tolerant landscaping. Cal Water operated this program in 2015/16 as a drought response measure. The program will be re-started as part of Cal Water's irrigation equipment/landscape upgrade program offerings.

4.2.3 Customer Assistance

Smart Landscape Tune-Up Program – This program provides customers with an irrigation system evaluation and installation of approved efficient irrigation system equipment, such as a smart irrigation controller and high-efficiency sprinkler nozzles. The program also includes irrigation system adjustments and detection and repair of irrigation system leaks. This program is available to all Cal Water customers at no charge.

Residential Customer Portal – Through its residential customer portal, Cal Water provides tailored assistance to each residential customer via customized water-efficiency targets, water savings calculators, and customer-specific recommendations for programs and water-saving tips.

Non-Residential Customer Assistance – Cal Water provides tailored assistance to commercial customers through customized incentives, commercial water surveys, and large landscape water use surveys. The non-residential assistance program helps commercial customers efficiently use water for sanitation/cleaning, heating/cooling, process, and landscape purposes.

4.2.4 Summary of Customer Programs

The customer conservation programs offered to customers in Visalia District are summarized in Table 3 by customer class.

Table 3. Cal Water Conservation Programs Available to Visalia District Customers

Programs (Rebate, Direct Install, and Free Distribution Programs)	Customer Eligibility		
	Single-Family	Multi-Family	Commercial
Plumbing Fixture Replacement			
High-Efficiency Toilet Replacement	✓	✓	✓
High-Efficiency Urinal Replacement			✓
High-Efficiency Clothes Washer Rebate	✓	✓	
Conservation Kits	✓	✓	
Irrigation Equipment/Landscape Upgrades			
Smart Irrigation Controller Rebate	✓	✓	✓
High-Efficiency Sprinkler Nozzle Rebate	✓	✓	✓
Large Rotary Nozzle Rebate		✓	✓
Spray Body Rebate		✓	✓
Turf Replacement Rebate	✓	✓	✓
Customer Assistance			
Smart Landscape Tune-Up Program	✓	✓	✓
Residential Customer Portal	✓		
Non-Residential Customer Assistance		✓	✓

4.3 School Education and Public Information Programs

Public Information Program – Cal Water operates an extensive public information program to provide information to customers on ways to use water efficiently and to market its conservation programs through multiple media outlets, including the Cal Water website, direct mail and bills, digital media, social media, and email.

School Education Program - Cal Water's school education program includes the Cal Water H2O Challenge, a project-based learning competition for grades 4-6, individual student competitions for grades K-12 and general information and learning materials for students and teachers. Cal Water deploys its school education program in all its districts. Cal Water H2O Challenge is a project-based competition for classrooms, grades 4-6. The program is offered in partnership with DoGoodery, the California Association of Science Educators (CASE), and the WestEd K-12 Alliance. The program aligns with the Common Core State Standards and the Next Generation Science

Standards. The Cal Water H2O Challenge offers a unique opportunity for upper elementary teachers to facilitate their students' learning of standards-based content, while developing the core understanding of environmental principles necessary to becoming science-literate citizens.

4.4 Water System Efficiency

4.4.1 System Water Loss Management

As discussed above, reducing distribution system losses is one of the main focuses of the new Making Water Conservation a California Way of Life regulations. In preparation for these new requirements, Cal Water took part in the California Water Loss Technical Assistance Program (TAP) in both 2016 and 2017. Cal Water annually conducts distribution system audits using the American Water Works Association (AWWA) Free Water Audit Software. It has also developed a Water Loss Control Plan and Water Loss Control Policy to guide future water loss management with respect to:

- Meeting CPUC and state water loss standards and regulations
- Improving audit data and validity scores
- Implementing cost-effective water loss control actions

To coordinate and oversee water loss management actions across its multiple districts, Cal Water has added a Water Loss Program Analyst position to its conservation staff.

4.4.2 Metering and Pricing

Cal Water has deployed conservation-oriented rate designs in all its districts since 2008. The CPUC reviews these rate designs every three years as part of a general rate case. Cal Water is continuously seeking ways to improve the efficiency and equity of the rates and charges paid by customers. One example is Cal Water's Customer Assistance Program (CAP), which provides bill discounts to qualifying lower income households.

All service connections in the District are metered. In addition to its use for billing, Cal Water uses meter data in the management of its conservation programs, including using it to analyze water use trends and identify customers that may benefit from Cal Water conservation programs. Cal Water is also piloting automatic meter reading (AMR) and advanced metering infrastructure (AMI) in several of its districts. Broad adoption of AMI would allow Cal Water in the future to detect and alert households of leaks and other possible problems as well as provide customers with tailored water use information to help them use water more efficiently.

4.5 Conservation Partnerships

Cal Water collaborates with organizations at the local, state, and national level to promote and advance water use efficiency, including as a member of the following organizations and initiatives.

California Water Efficiency Partnership (CalWEP) – CalWEP's mission is to maximize urban water efficiency and conservation throughout California by supporting and integrating innovative technologies and practices; encouraging effective public policies; advancing research, training, and public education; and building collaborative approaches and partnerships. In addition to being a CalWEP member, Cal Water serves on the organization's board of directors.

Alliance for Water Efficiency - The Alliance for Water Efficiency (AWE) is a national non-profit organization dedicated to efficient and sustainable use of water. In addition to being an AWE member, Cal Water uses the AWE Water Conservation Tracking Tool to evaluate conservation programs and track water savings.

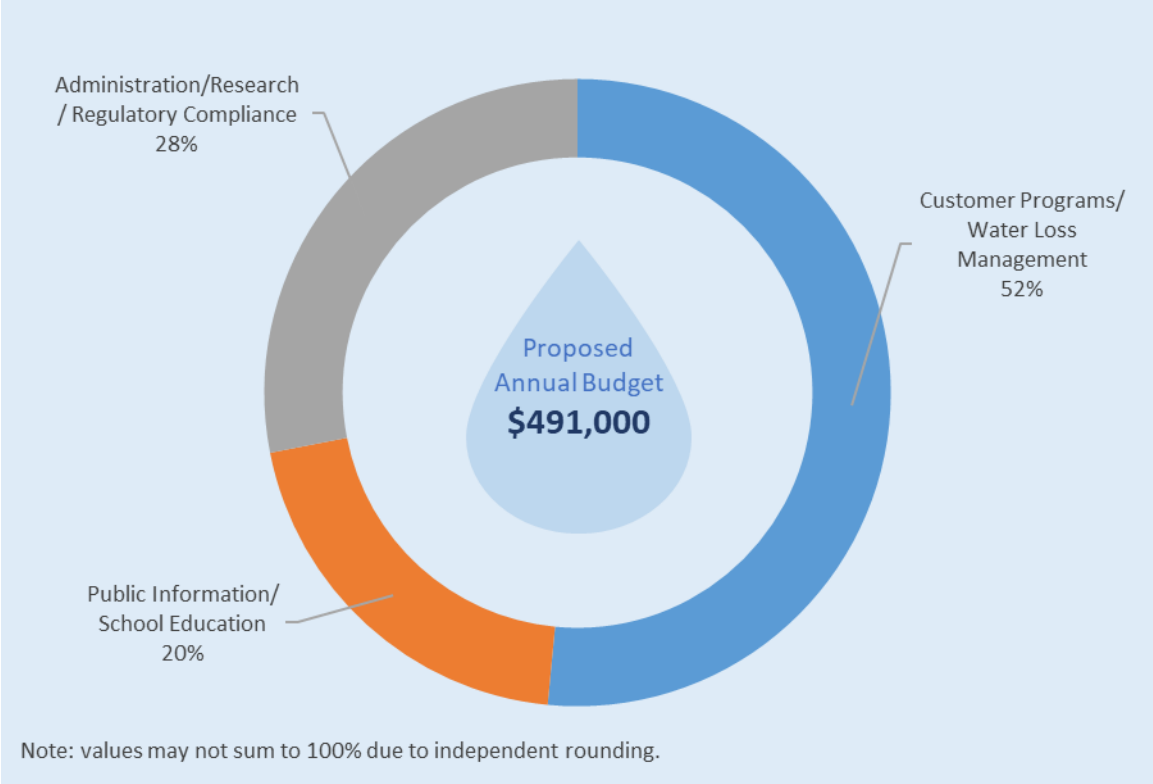
EPA WaterSense - As an EPA WaterSense partner, Cal Water has committed to educating its customers about the value of water, water efficiency, and the WaterSense brand. Products and services earning the WaterSense label have been certified to be at least 20 percent more efficient without sacrificing performance.

5 Conservation Budget

The District's recommended conservation budget for the period 2021-2025 is presented in Figure 8.[5] Cal Water used the three-step process shown in Figure 9 to develop the conservation budget. In the first step, a wide range of possible conservation programs are qualitatively screened in terms of their potential savings, implementation feasibility, customer receptivity, and cost. The program screening filters used in this step are listed in Table 4. In the second step, the programs passing through the screen are quantitatively analyzed using the AWE's Water Conservation Tracking Tool. In the third step, a portfolio of programs is developed based on the results of the second step. As discussed earlier, in its two most recent general rate cases Cal Water has further refined the conservation budget based on the results of a risk assessment used to determine which districts may require additional resources to meet the state's new conservation regulations.

[5] This is a composite of the conservation budget the CPUC approved in Cal Water's 2018 general rate case, which covers the period 2020-2022, and the budget Cal Water is proposing in its 2021 general rate case, which covers the period 2023-2025. Depending on the outcome of the general rate case, the adopted 2023-2025 budget may differ from Cal Water's recommended budget.

Figure 8. Recommend Conservation Budget and Allocation: 2021-2025



Note: values may not sum to 100% due to independent rounding.

Figure 9. Conservation Program Assessment Method

Table 4. Conservation Measure Qualitative Screening Filters

Filter	Description
Water Savings Potential	The amount of water a measure can potentially save over its lifespan or over a certain period after an action that encourages behavioral change (such as receipt of a home water survey). This filter screens out measures where potential savings are too low to make it worthwhile.
Certainty of Water Savings	The certainty of the water savings estimated in Water Savings Potential. Some measures have high potential but low certainty because they are new and untested or because they rely on uncertain behavioral actions of participants. Other measures have low potential but high certainty. This filter screens out measures that have low expected savings (i.e., measures with high certainty but low potential or measures with high potential but low certainty) or flags these measures as candidates for pilot programs.
Implementation Feasibility	The ease with which a measure can be implemented, such as adequate budget and staff resources to handle outreach and ongoing administrative needs. This filter screens out measures than are considered infeasible to implement.
Customer Receptivity	The degree to which customers are receptive to a measure, such as how easy or difficult it is for a customer to apply for a certain rebate or arrange for a water survey. This filter screens out measures that are unlikely to be favored by customers.
Adaptability	The ease with which a measure can be scaled to react to a changing market (e.g., increasing or decreasing a toilet rebate to ramp up/down the participation rate), or adjusted to accommodate a different market sector (e.g., redesigning the incentives or other parameters of a single-family landscape turf replacement program to target the multi-family or commercial sectors). This filter screens out measures that cannot be readily adapted to changing circumstances of the market.
Cost	The expected cost-effectiveness of the measure relative to other measures. This filter screens out measures that are unlikely to be cost-effective or would crowd out other desirable measures because of its expense.

6 Performance Metrics

Cal Water periodically evaluates program savings potential and cost-effectiveness using the AWE Water Conservation Tracking Tool. Based on the most recent evaluation, the expected water savings and cost-effectiveness of Visalia's conservation program are as follows:

- **Water Savings** – Up to 600 AF/year and cumulatively up to 9,000 AF over the useful life of the measures. Program water savings will help the District comply with new state water conservation and groundwater management regulations.

- **Unit Cost** – $400/AF (rounded to nearest $100), which is cost competitive with alternative sources of water supply.

7 Program Monitoring and Reporting

Cal Water regularly reviews its conservation programs to ensure they are performing as expected. This includes the following:

Program Tracking - Cal Water uses the AWE Water Conservation Tracking tool to track program participation, cost, and water savings. This data helps Cal Water monitor program performance, analyze water use trends, and forecast future water demand.

Research and Evaluation – Cal Water regularly evaluates program performance and undertakes pilot projects to assess the effectiveness of its programs. Examples include:

- Comprehensive statistical evaluations of bathroom retrofit programs operated between 2013 and 2018

- Statistical evaluations of water savings associated with high-efficiency irrigation nozzle replacement, smart irrigation controller installation, and turf replacement programs.

- Development of statistical models of customer program participation that help Cal Water target programs based on household and neighborhood attributes.

- AMR and AMI pilot projects.

Annual Conservation Report – Cal Water annually reports on the conservation program's progress and accomplishments, and posts public reports for each of its

districts on its public website (https://www.calwater.com/conservation/water-conservation-reports/).

CPUC Reporting – Cal Water reports to the CPUC annually on the implementation, cost, and performance of its conservation programs.

State Reporting – Starting in 2023, Cal Water will annually report District water use relative to its water use objective as part of the new Making Water Conservation a California Way of Life regulations.

Appendix I: Resolution to Adopt UWMP

CALIFORNIA WATER SERVICE
1720 North First Street
San Jose, CA 95112-4598 *Tel:* (408) 367-8200

June 20, 2021

Julia Ekstrom, PhD
Supervisor, Urban Unit
California Department of Water Resources
Water Use Efficiency Section
P.O. Box 942836
Sacramento, CA 94236-0001

Re: Adoption of the 2020 Urban Water Management Plan and Water Shortage Contingency Plan
California Water Service – Visalia District

Ms. Ekstrom:

This letter serves as notice that California Water Service Company (Cal Water) has formally adopted this 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) for our Visalia District.

The attached resolution from Cal Water's Board of Directors on September 28, 2005 delegated authority for this approval to, among others, any Vice President. I have approved the attached UWMP and WSCP, which was developed by staff under my supervision in accordance with the Urban Water Management Planning Act contained in the California Water Code, Division 6, Part 2.6.

If you have any questions regarding this UWMP or WSCP, please contact Michael Bolzowski at the above mailing address, by telephone at (408) 367-8338, or by email at mbolzowski@calwater.com.

Sincerely,

Shannon Dean
Vice President, Customer Service and Chief Citizenship Officer

Attachments

cc: Ken Jenkins - Director, Water Resource Sustainability
Stephen Johnson – District Manager, Visalia District

CALIFORNIA WATER SERVICE
1720 North First Street
San Jose, CA 95112-4598 *Tel:* (408) 367-8200

CALIFORNIA WATER SERVICE COMPANY

RESOLVED, that this Board of Directors delegates its authority to approve Urban Water Management Plans as required under the Urban Water Management Planning Act contained in California Water Code 6, Part 2.6 to the President and Chief Executive Officer, any Vice President, the Corporate Secretary and any Assistant Secretary of California Water Service Company.

--oOo--

I, DAN L. STOCKTON, Corporate Secretary of California Water Service Company, a California corporation, do hereby certify that the foregoing is a full, true and correct copy of certain resolution adopted by the Board of Directors of said corporation at a regular meeting of said Board duly called and held September 28, 2005, at which a quorum was present, that all Directors present voted in favor of said resolution, and that said resolution has never been annulled or revoked but is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto signed my name this 7th day of September, 2005.

Dan L. Stockton
Corporate Secretary

APPENDIX C

PRATT FAMILY RANCH WSA – CONSISTENCY WITH DWR GUIDELINES

Pratt Family Ranch WSA – Consistency with DWR Guidelines

Guidelines Section Number and Title (DWR, 2003)	Guidelines Direction	Relevant WSA Section and Response
Section 1 (page 2). Does SB 610 or SB221 apply to the proposed project?	Is the project subject to SB 610? Is the project subject to CEQA (Water Code §10910(a)? If yes, continue.	WSA Section 1.1. Yes, the project is subject to SB610 and CEQA.
	Is it a "Project" as defined by Water Code §10912(a) or (b)? If yes, to comply with SB 610 go to Section 2.0, page 4.	WSA Section 1.1. Yes, the Project is considered to meet the definition of "project" per Water Code §10912(a) or (b).
	Is the project subject to SB 221? Does the tentative map include a "subdivision" as defined by Government Code §66473.7(a)(1)? If no, stop.	No, the Project does not include a "subdivision", SB 221 does not apply to the Project, and no further action relevant to SB 221 is required.
Section 2.0 (page 4). Who will prepare the SB 610 analysis?	Is there a public water system ("water supplier") for the project (Water Code §10910(b)? If no, go to Section 3.0, page 6.	WSA Section 2.1. Yes, the project site will connect to a public water system.
Section 3.0 (page 6). Has an assessment already been prepared that includes this project?	Has this project already been the subject of an assessment (Water Code §10910(h)? If no, go to Section 4.0, page 8.	No, the Project has not been the subject of an assessment.
Section 4.0 (page 8). Is there a current Urban Water Management Plan?	Is there an adopted urban water management Plan (Water Code §10910(c)? If yes, continue. If yes, the information from the UWMP related to the proposed water demand for the project may also be used for carrying out Section 5.0, Steps 1 and 2, Section 7; proceed to Section 5, page 10 of the Guidelines.	Yes, there is an Urban Water Management Plan (UWMP) for the proposed project location described in WSA Section 3.2.
	Is the project water demand for the project accounted for in the most recent UWMP (Water Code §10910(c)(2)? If no, go to Section 5.0, page 10.	No
Section 5.0 (page 10). What information should be included in an assessment?	Step One (page 13). Documenting wholesale water supplies.	The Project is not a retail water supplier and would not include the use of wholesale water supplies.
	Step Two (page 17). Documenting Supply if Groundwater is a Source.	The proposed water supply wells are located within the California Water Service - Visalia Water District. WSA Sections 1.3, 2.3 and 3.2.

Guidelines Section Number and Title (DWR, 2003)	Guidelines Direction	Relevant WSA Section and Response
	Specify if a groundwater management plan or any other specific authorization for groundwater management for the basin has been adopted and how it affects the water supplier's use of the basin.	WSA Section 3.2 The water supply wells are located within the Mid-Kaweah and Greater Kaweah Groundwater Sustainability Agencies which includes the California Water Service - Visalia Water District.
	Description and analysis of the amount and location of groundwater pumped by the water supplier for the past five years. Include information on proposed pumping locations and quantities. The description and analysis is to be based on information that is reasonably available, including, but not limited to, historic use records from DWR.	California Water Service - Visalia Water District historic records included in WSA Section 3.0. WSA Section 1.3 provides a description of the Project's water requirements.
	Analysis of the location, amount, and sufficiency of groundwater that is projected to be pumped by the water supplier.	WSA Section 3.2. The quantity of water available in California Water Service - Visalia Water District is sufficient for the Project.
	Step 3 (page 21). Documenting project demand (Project Demand Analysis).	WSA Section 1.3. Construction of the Project will require 38-acre feet per year.
	Step 4 (page 26). Documenting dry year(s) supply.	WSA Section 3.2. Addresses water supply availability including during dry years.
	Step 5 (page 31). Documenting dry year(s) demand.	WSA Section 3.2 addresses annual demands, including dry year scenarios.
Section 6.0 (page 33). Is the projected water supply sufficient or insufficient for the proposed project		WSA Section 4.0 summarizes how the identified water supply/supplies are considered sufficient for the Project.
Section 7.0 (page 35). If the projected supply is determined to be insufficient. Section 8.0 (page 38). Final SB 610 assessment actions by lead agencies.	Does the assessment conclude that supply is "sufficient"? If no, continue. The lead agency shall review the WSA and must decide whether additional water supply information is needed for its consideration of the proposed project. The lead agency "shall determine, based on the entire record, whether	WSA Section 4.0 concludes that sufficient water supplies are available for the Project. The WSA for the Project must be approved prior to or in concurrence with the EIR.

Guidelines Section Number and Title (DWR, 2003)	Guidelines Direction	Relevant WSA Section and Response
	projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses."	
	The description of the groundwater basin may be excerpted from the groundwater management plan, from DWR Bulleting 118, California's Ground Water, or from some other document that has been published and that discusses the basin boundaries, type of rock that constitutes the aquifer, variability of the aquifer material, and total groundwater in storage (average specific yield times the volume of the aquifer).	WSA Section 2.2 provides a description of the groundwater basin characteristics using all available resources, including DWR Bulletin 118.
	In an adjudicated basin the amount of water the urban supplier has the legal right to pump should be enumerated in the court decision.	Basin is not adjudicated.
	The Department of Water Resources has projected estimates of overdraft, or "water shortage", based on projected amounts of water supply and demand (basin management) are projected by the Watermaster agency (AVEK) in WSA Section 3.2, the hydrologic region level in	Basin groundwater resources are discussed in WSA Section 2.3.
	Bulletin 160, California Water Plan Update. Estimates at the basin or subbasin level will be projected for some basins in Bulletin 118. If the basin has not been evaluated by DWR, data that indicate groundwater level trends over a period of time should be collected and evaluated.	
	If the evaluation indicates an overdraft due to existing	WSA Section 3.2. The referenced and Appendicized

Guidelines Section Number and Title (DWR, 2003)	Guidelines Direction	Relevant WSA Section and Response
	groundwater extraction, or projected increases in groundwater extraction, describe actions and/or program designed to eliminate the long term overdraft condition.	California Water Service - Visalia Water District 2020 Urban Water Master Plan describes in detail the subject actions and programs.

City of Visalia

315 E. Acequia Ave., Visalia, CA 93291

Site Plan Review

May 17, 2021

Site Plan Review No. 20-204:

Pursuant to Zoning Ordinance Chapter 17.28 the Site Plan Review process has found that your application complies with the general plan, municipal code, policies, and improvement standards of the city. A copy of each Departments/Divisions comments that were discussed with you at the Site Plan Review meeting are attached to this document.

Based upon Zoning Ordinance Section 17.28.070, this is your Site Plan Review determination. However, your project requires discretionary action as stated on the attached Site Plan Review comments. You may now proceed with filing discretionary applications to the Planning Division.

This is your Site Plan Review Permit; your Site Plan Review became effective **December 23, 2020**. A site plan review permit shall lapse and become null and void one year following the date of approval unless, prior to the expiration of one year, a building permit is issued by the building official and construction is commenced and diligently pursued toward completion.

If you have any questions regarding this action, please call the Community Development Department at (559) 713-4359.

Respectfully,

Paul Bernal
City Planner
315 E. Acequia Ave.
Visalia, CA 93291

Attachment(s):

- Site Plan Review Comments

MEETING DATE December 23, 2020

SITE PLAN NO. 2020-204

PARCEL MAP NO.

SUBDIVISION

LOT LINE ADJUSTMENT NO.

Enclosed for your review are the comments and decisions of the Site Plan Review committee. Please review all comments since they may impact your project.

☐ **RESUBMIT** Major changes to your plans are required. Prior to accepting construction drawings for building permit, your project must return to the Site Plan Review Committee for review of the revised plans.

☐ During site plan design/policy concerns were identified, schedule a meeting with

☐ Planning ☐ Engineering prior to resubmittal plans for Site Plan Review.

☐ Solid Waste ☐ Parks and Recreation ☐ Fire Dept.

☒ **REVISE AND PROCEED** (see below)

☐ A revised plan addressing the Committee comments and revisions must be submitted for Off-Agenda Review and approval prior to submitting for building permits or discretionary actions.

☒ Submit plans for a building permit between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday.

☒ Your plans must be reviewed by:

☐ CITY COUNCIL ☐ REDEVELOPMENT

☒ PLANNING COMMISSION ☐ PARK/RECREATION

☒ Specific Plan, Annexation, EIR

☐ HISTORIC PRESERVATION ☐ OTHER –

☐ **ADDITIONAL COMMENTS:**

If you have any questions or comments, please call Adrian Bubalcaba at (559) 713-4271

Site Plan Review Committee

RECYCLED PAPER

SUBDIVISION & PARCEL MAP REQUIREMENTS
ENGINEERING DIVISION

☒ **Adrian Rubalcaba 713-4271**
☐ **Diego Corvera 713-4209**

ITEM NO: 4 DATE: DECEMBER 23, 2020

SITE PLAN NO.:	**20-204 RESUBMITTAL**
PROJECT TITLE:	**PRATT FAMILY RANCH TIER II RESIDENTIAL DEVELOPMENT**
DESCRIPTION:	**TIER II RESIDENTIAL DEVELOPMENT PROPOSAL FOR THE PRATT FAMILY RANCH AREA (X)**
APPLICANT:	**ERNIE ESCOBEDO**
PROP. OWNER:	**GUNNING MICHAEL K & GLENDA M (TRS)**
LOCATION:	**2100 W PRATT RD**
APN:	**078-010-028, 029**

SITE PLAN REVIEW COMMENTS

☒ REQUIREMENTS (Indicated by checked boxes)

☒ Submit improvements plans detailing all proposed work; ☒ Subdivision Agreement will detail fees & bonding requirements

☒ Bonds, certificate of insurance, cash payment of fees/inspection, and approved map & plan required prior to approval of Final Map.

☒ The Final Map & Improvements shall conform to the Subdivision Map Act, the City's Subdivision Ordinance and Standard Improvements.

☒ A preconstruction conference is required prior to the start of any construction.

☒ Right-of-way dedication required. A title report is required for verification of ownership. ☒ by map ☐ by deed

☒ City Encroachment Permit Required which shall include an approved traffic control plan.

☐ CalTrans Encroachment Permit Required. ☐ CalTrans comments required prior to tentative parcel map approval. CalTrans contacts: David Deel (Planning) 488-4088

☒ Landscape & Lighting District/Home Owners Association required prior to approval of Final Map. Landscape & Lighting District will maintain common area landscaping, street lights, street trees and local streets as applicable. Submit completed Landscape and Lighting District application and filing fee a min. of 75 days before approval of Final Map.

☒ Landscape & irrigation improvement plans to be submitted for each phase. Landscape plans will need to comply with the City's street tree ordinance. The locations of street trees near intersections will need to comply with Plate SD-1 of the City improvement standards. A street tree and landscape master plan for all phases of the subdivision will need to be submitted with the initial phase to assist City staff in the formation of the landscape and lighting assessment district.

☒ Dedicate landscape lots to the City that are to be maintained by the Landscape & Lighting District.

☐ Northeast Specific Plan Area: Application for annexation into Northeast District required 75 days prior to Final Map approval.

☒ Written comments required from ditch company. Contacts: James Silva 747-1177 for Modoc, Persian, Watson, Oakes, Flemming, Evans Ditch and Peoples Ditches; Paul Hendrix 686-3425 for Tulare Irrigation Canal, Packwood and Cameron Creeks; Bruce George 747-5601 for Mill Creek and St. John's River.

☒ Final Map & Improvements shall conform to the City's Waterways Policy. ☒ Access required on ditch bank, 12' minimum. ☒ Provide ***100'*** wide riparian dedication from top of bank. ***ST JOHNS***

☒ Sanitary Sewer master plan for the entire development shall be submitted for approval prior to approval of any portion of the system. The sewer system will need to be extended to the boundaries of the development where future connection and extension is anticipated. The sewer system will need to be sized to serve any future developments that are anticipated to connect to the system. ***SUBJECT TO ONGOING CITY MASTER PLAN UPDATE.***

☒ Grading & Drainage plan required. If the project is phased, then a master plan is required for the entire project area that shall include pipe network sizing and grades and street grades. ☒ Prepared by registered civil engineer or project architect. ☒ All elevations shall be based on the City's benchmark network. Storm run-off from the project shall be handled as follows: a) ☐ directed to the City's existing storm drainage

system; b) ☐ directed to a permanent on-site basin; or c) ☒ directed to a temporary on-site basin is required until a connection with adequate capacity is available to the City's storm drainage system. On-site basin: : maximum side slopes, perimeter fencing required, provide access ramp to bottom for maintenance. ***ADDITIONAL ANALYSIS REQUIRED FOR EXTENSION/CONNECTION TO SHANNON RANCH BASIN INFRASTRUCTURE. PROJECT SUBJECT TO ONGOING CITY MASTER PLAN UPDATE FOR STORM AND SEWER.***

☒Show Valley Oak trees with drip lines and adjacent grade elevations. ☒ Protect Valley Oak trees during construction in accordance with City requirements. ☒A permit is required to remove Valley Oak trees. Contact Public Works Admin at (559)713-4428 for a Valley Oak tree evaluation or permit to remove. ☐ Valley Oak tree evaluations by a certified arborist are required to be submitted to the City in conjunction with the tentative map application. ☐ A pre-construction conference is required.

☒Show adjacent property grade elevations on improvement plans. A retaining wall will be required for grade differences greater than 0.5 feet at the property line.

☒Relocate existing utility poles and/or facilities. ***REQUIRED WITH REALIGNMENT OF ROADWAYS***

☒Underground all existing overhead utilities within the project limits. Existing overhead electrical lines over 50kV shall be exempt from undergrounding. ***REQUIRED WITH PROJECT***

☒Provide "R" value tests: ***1*** each at ***300' INTERVALS***

☒Traffic indexes per city standards: ***REFER TO CITY PAVEMENT STANDARDS***

☒All public streets within the project limits and across the project frontage shall be improved to their full width, subject to available right of way, in accordance with City policies, standards and specifications.

☒All lots shall have separate drive approaches constructed to City Standards.

☒Install street striping as required by the City Engineer.

☒Install sidewalk: ***VARIES*** ft. wide, with ***VARIES*** ft. wide parkway on ***REFER TO CITY STREET STANDARDS.***

☒Cluster mailbox supports required at 1 per 2 lots, or use postal unit (contact the Postmaster at 732-8073).

☐Subject to existing Reimbursement Agreement to reimburse prior developer:

☒Abandon existing wells per City of Visalia Code. A building permit is required.

☒Remove existing irrigation lines & dispose off-site. ☒Remove existing leach fields and septic tanks.

☒ Fugitive dust will be controlled in accordance with the applicable rules of San Joaquin Valley Air District's Regulation VIII. Copies of any required permits will be provided to the City.

☒ If the project requires discretionary approval from the City, it may be subject to the San Joaquin Valley Air District's Rule 9510 Indirect Source Review per the rule's applicability criteria. A copy of the approved AIA application will be provided to the City.

☒If the project meets the one acre of disturbance criteria of the State's Storm Water Program, then coverage under General Permit Order 2009-0009-DWQ is required and a Storm Water Pollution Prevention Plan (SWPPP) is needed. A copy of the approved permit and the SWPPP will be provided to the City.

☒Comply with prior comments ☒Resubmit with additional information ☒Redesign required

Additional Comments:

1. Proposed alignments of the roadways do not match City Circulation Element alignments. The proposed shift of Mooney Blvd. maintains most of the street within subdivision boundaries, with the future east parcel development to complete the parkway and sidewalk improvements. This appears to be sufficient howerver an additional analysis of the intersection at Ave. 320 and Mooney Blvd. would need to be completed to confirm feasibility of the realignment; given the closer proximity to St Johns River. Additional storm work is required to capture street run-off along east side of Mooney.

2. Ave 320 is a deferred 4-lane arterial per current TIF program therefore would not be eligible for partial reimbursement. Half arterial street improvements will be required to be constructed. Refer to City arterial standards.

3. Site plan proposes a traffic circle at Riverway & Mooney. Round-abouts are not a City std nor identified in the City's Circ Element and TIF program. Proposals would require additional traffic analysis and review by City Engineer. Additional costs and design would be borne on developer. Results of analysis for a suitable and acceptable design may impact subdivision layout and revisions

would be necessary. PLEASE NOTE: The round-about design size as proposed has not been approved by City Engineer.

4. Mooney Blvd is identified as an 84' collector roadway per current standards. Existing design, south of Riverway Ave, is a wider version of the current standard. Project to analyze the transition design from the south and extend accordingly. Mooney to be constructed to full width. Refer to City collector standards.

5. Additional design considerations are required for gated access on Mooney as it appears there is inadequate space for vehicle queuing.

6. Subdivision to show phasing plan for additional review of required public improvements relative to each phase.

7. Install street lights to City standards.

8. Additional details needed for landscape lots / pocket parks desired to be maintained by a Landscape and Lighting District. At a minimum, outlots are to incorporate City std public right-of-way improvements relative to their road frontages.

9. The site plan needs to show intentions of dog park amenities and public right-of-way improvements.

10. Per City plans, Class II bike lanes are to be incorporated on Mooney, Pratt, and Ave. 320.

11. Utility relocations would be required with proposed round-about area and realignments of Mooney. Additional costs incurred by deviation from the City Circ Element plan would be responsibility of the developer.

12. A turnaround would be required at phased terminus of Mooney Blvd.

13. Connection to Zachary St. will need to be gradually transitioned to current local street width.

14. Transition Pratt west accordingly. There may be an existing drive way that needs to be addressed with improvement transition plan.

SUMMARY OF APPLICABLE DEVELOPMENT IMPACT FEES

Site Plan No: **20-204 RESUBMITTAL**
Date: **12/23/2020**

Summary of applicable Development Impact Fees to be collected at the time of final/parcel map recordation:

(Preliminary estimate only! Final fees will be based on approved subdivision map & improvements plans and the fee schedule in effect at the time of recordation.)

(Fee Schedule Date:**9/1/2020**)
(Project type for fee rates:**SFD**)

☐ Existing uses may qualify for credits on Development Impact Fees.

FEE ITEM	FEE RATE
☒ Trunk Line Capacity Fee	**$822/UNIT**
☐ Sewer Front Foot Fee	
☒ Storm Drainage Acquisition Fee	**VARIES**
☒ Park Acquisition Fee	**$1,618//UNIT**
☐ Northeast Acquisition Fee Total Storm Drainage Block Walls Parkway Landscaping Bike Paths	
☒ Waterways Acquisition Fee	**VARIES**

Additional Development Impact Fees will be collected at the time of issuance of building permits.

City Reimbursement:

1.) No reimbursement shall be made except as provided in a written reimbursement agreement between the City and the developer entered into prior to commencement of construction of the subject planned facilities.
2.) Reimbursement is available for the development of arterial/collector streets as shown in the City's Circulation Element and funded in the City's transportation impact fee program. The developer will be reimbursed for construction costs and right of way dedications as outlined in Municipal Code Section 16.44. Reimbursement unit costs will be subject to those unit costs utilized as the basis for the transportation impact fee.
3.) Reimbursement is available for the construction of storm drain trunk lines and sanitary sewer trunk lines shown in the City's Storm Water Master Plan and Sanitary Sewer System Master Plan. The developer will be reimbursed for construction costs associated with the installation of these trunk lines.

Adrian Rubalcaba

SITE PLAN REVIEW COMMENTS

Josh Dan, PLANNING DIVISION, 559-713-4003
Date: December 23, 2020

SITE PLAN NO:	2020-204 - B
PROJECT:	Pratt Family Ranch – Tier II Residential Development
DESCRIPTION:	Conceptual Neighborhood Layout for a Proposed Specific Plan (X)
APPLICANT:	ERNIE ESCOBEDO
PROP. OWNER:	MICHAEL & GLENDA GUNNING
LOCATION TITLE:	SOUTHWEST AND NORTHERN AREA OF PRATT ROAD AND MOONEY BLVD.
APN TITLE:	078-010-022, -023, -025, -028, & -029
GENERAL PLAN:	Residential Very Low Density, Residential Low Density, Residential Medium Density, Park/Recreation
ZONING:	Tulare County Jurisdiction

Planning Division Recommendation:

☒ Revise and Proceed
☐ Resubmit

Rule 9510 – This project is subject to the Rule 9510 requirements of the San Joaquin Valley Air Pollution Control District – see District web-site for information.

Project Requirements

- Specific Plan
- Project Specific Environmental Impact Report (EIR)
- Annexation
- Water Supply Assessment
- Ag Mitigation Plan
- Traffic Impact Analysis
- Vehicle Miles Traveled (VMT) Analysis
- Building Permits
- Additional information as needed

PROJECT SPECIFIC INFORMATION: December 23, 2020

1. The project, as whole, is premature as the City has not yet opened to the Tier II Growth Boundary.

2. The project shall receive a "Revise and Proceed" from the Planning Division to proceed with work on their Specific Plan and supplementary material. The applicant is requested to reach out to senior staff in the Specific Plan development process so ensure the document is in line with requirements.

3. The Tentative Subdivision Map portion of the project and other requirements detailed as needed, after or concurrent to annexation shall be required to be further reviewed at Site Plan Review where staff evaluation the following:
   a. Footprints / elevations shall be provided demonstrating compliance with setback requirements; this shall include detail on the architectural style, as proposed for the entire development.
   b. Provide a Phasing Plan for the development.
   c. The dog park portion has not shown connectivity or pedestrian paths, this will be required.
   d. Consult with the Visalia Parks and Recreation Department for information on whether the redistribution of the designated Parks/Recreation area identified by the Visalia General Plan will be supported. The Visalia Parks and Recreation Department shall also be consulted for questions regarding reimbursement for buildout of park areas.

4. Environmental Requirements:
   a. Provide a project specific EIR to cover environmental review of the site as a whole.
   b. Development of a site within multiple Tiers of the Visalia General Plan land use map is possible

under Visalia General Plan Land Use Policy No. LU-P-22, if a project site is under single ownership and if the City of Visalia has met thresholds for expansion as outlined in the General Plan.

c. As part of the environmental process, additional studies are required including: Vehicle Miles Traveled (VMTs), Traffic, and a Water Supply Assessment.
d. Agricultural Mitigation will be required for the development of agricultural lands as part of the project's specific EIR process.

5. Annexation is required for the development.
6. Per the recommendation of the Engineering Division, the proposed alignment of Mooney Blvd. is not supported by staff. The alignment of Mooney Blvd. shall match the existing alignment as it currently exists south of W. Pratt Avenue.
7. Additional technical information in support of the proposed layout shall be provided to staff for further consideration, if the applicant wishes to proceed with the proposed alignment of Mooney Blvd.
8. Comply with Fire requirement regarding access points.
9. Additional information as needed.
10. Compliance to previous comments, General Plan, and Municipal Code policies and requirements.

PROJECT SPECIFIC INFORMATION: December 9, 2020

11. The project is premature as the City has not yet opened to the Tier II Growth Boundary.
12. Be sure meet Gross Density requirements across different land uses.
13. Provide footprints / elevations on small lots to describe how homes will meet setback requirements.
14. The dog park portion has not shown connectivity or pedestrian paths, this will be required.
15. The proposed project will require the adoption of a Specific Plan to describe development on the project sites as a whole. This shall include lands within other tier boundaries, extension of utilities and services provided to the site, design standards established for the entire area, and descriptions of site interactions with future planned uses including streets, trail systems, greenways, and all other aspects/amenities of the development as a whole. The development shall be designed to increase connectivity between the proposed parks and open space/trail areas throughout the development. As a Specific Plan, a higher level of design is warranted.
16. Development of a site within multiple Tiers of the Visalia General Plan land use map is possible under Visalia General Plan Land Use Policy No. LU-P-22, if a project site is under single ownership and if the City of Visalia has met thresholds for expansion as outlined in the General Plan.
17. The applicant shall provide a project specific EIR to cover environmental review of the site as a whole.
18. As part of the environmental process, additional studies are required including: Vehicle Miles Traveled (VMTs), Traffic, and a Water Supply Assessment.
19. Agricultural Mitigation will be required for the development of agricultural lands as part of the project's specific EIR process.
20. Annexation is required for the development.
21. Per the recommendation of the Engineering Division, the proposed alignment of Mooney Blvd. is not supported by staff. The alignment of Mooney Blvd. shall match the existing alignment as it currently exists south of W. Pratt Avenue.
22. Additional technical information in support of the proposed layout shall be provided to staff for further consideration, if the applicant wishes to proceed with the proposed alignment of Mooney Blvd.
23. A separate Site Plan Review submittal shall be required for the Tentative Subdivision Map portion of the project.
24. Provide a Phasing Plan for the development.
25. Provide additional detail on the architectural style proposed for the entire development.
26. Provide information on the product types to be placed on the residential lots.
27. Identify all relevant jurisdictional boundaries (City Limits, Tier Boundaries, Sphere of Influence, Phasing lines, etc.) on the revised site plan.
28. Consult with the Visalia Parks and Recreation Department for information on whether the redistribution of the designated Parks/Recreation area identified by the Visalia General Plan will be supported. The

Visalia Parks and Recreation Department shall also be consulted for questions regarding reimbursement for buildout of park areas.
29. Comply with Fire requirement regarding access points.
30. Additional information as needed.

PROJECT SPECIFIC INFORMATION: November 4, 2020 (SPR No. 2020-170 – B)

31. Be sure to review Gross Density figures on "Land Use Data" table, the first two rows are not accurate.
32. The proposed project will require the adoption of a Specific Plan to describe development on the project sites as a whole. This shall include lands within other tier boundaries, extension of utilities and services provided to the site, design standards established for the entire area, and descriptions of site interactions with future planned uses including streets, trail systems, greenways, and all other aspects/amenities of the development as a whole. The development shall be designed to increase connectivity between the proposed parks and open space/trail areas throughout the development. As a Specific Plan, a higher level of design is warranted.
33. Development of a site within multiple Tiers of the Visalia General Plan land use map is possible under Visalia General Plan Land Use Policy No. LU-P-22, if a project site is under single ownership and if the City of Visalia has met thresholds for expansion as outlined in the General Plan.
34. The applicant shall provide a project specific EIR to cover environmental review of the site as a whole.
35. As part of the environmental process, additional studies are required including: Vehicle Miles Traveled (VMTs), Traffic, and a Water Supply Assessment.
36. Agricultural Mitigation will be required for the development of agricultural lands as part of the project's specific EIR process.
37. Annexation is required for the development.
38. Per the recommendation of the Engineering Division, the proposed alignment of Mooney Blvd. is not supported by staff. The alignment of Mooney Blvd. shall match the existing alignment as it currently exists south of W. Pratt Avenue.
39. Additional technical information in support of the proposed layout shall be provided to staff for further consideration, if the applicant wishes to proceed with the proposed alignment of Mooney Blvd.
40. A separate Site Plan Review submittal shall be required for the Tentative Subdivision Map portion of the project.
41. Provide a Phasing Plan for the development.
42. Provide additional detail on the architectural style proposed for the entire development.
43. Provide information on the product types to be placed on the residential lots.
44. Identify all relevant jurisdictional boundaries (City Limits, Tier Boundaries, Sphere of Influence, Phasing lines, etc.) on the revised site plan.
45. Consult with the Visalia Parks and Recreation Department for information on whether the redistribution of the designated Parks/Recreation area identified by the Visalia General Plan will be supported. The Visalia Parks and Recreation Department shall also be consulted for questions regarding reimbursement for buildout of park areas.
46. Comply with Fire requirement regarding access points.
47. Additional information as needed.

PROJECT SPECIFIC INFORMATION: August 19, 2020 (SPR No. 2020-170 – A)

1. The proposed project will require the adoption of a Specific Plan to describe development on the project sites as a whole. This shall include lands within other tier boundaries, extension of utilities and services provided to the site, design standards established for the entire area, and descriptions of site interactions with future planned uses including streets, trail systems, greenways, and all other aspects/amenities of the development as a whole. The development shall be designed to increase connectivity between the proposed parks and open space/trail areas throughout the development. As a Specific Plan, a higher level of design is warranted.
2. Development of a site within multiple Tiers of the Visalia General Plan land use map is possible under Visalia General Plan Land Use Policy No. LU-P-22, if a project site is under single ownership and if the City of Visalia has met thresholds for expansion as outlined in the General Plan.

3. Per the recommendation of the Engineering Division, the proposed alignment of Mooney Blvd. is not supported by staff. The alignment of Mooney Blvd. shall match the existing alignment as it currently exists south of W. Pratt Avenue. If the applicant wishes to proceed with the proposed alignment, additional technical information in support of the proposed layout shall be provided to staff for further consideration.
4. The Pratt Ranch Lotting Study provided on the site plan shows that the Residential Medium Density area will contain residential lots at a density of 9 units to the acre. The Visalia General Plan requires that Residential Medium Density areas be designed for a minimum 10 to 15 units per acre. The proposal shall be redesigned to achieve minimum densities as required by the Visalia General Plan.
5. The applicant shall provide a project specific EIR to cover environmental review of the site as a whole.
6. As part of the environmental process, additional studies are required including: Vehicle Miles Traveled (VMTs), Traffic, and a Water Supply Assessment.
7. Agricultural Mitigation will be required for the development of agricultural lands as part of the project's specific EIR process.
8. Annexation is required for the development.
9. A separate Site Plan Review submittal shall be required for the Tentative Subdivision Map portion of the project.
10. Provide a Phasing Plan for the development.
11. Provide additional detail on the architectural style proposed for the entire development.
12. Provide information on the product types to be placed on the residential lots.
13. Identify all relevant jurisdictional boundaries (City Limits, Tier Boundaries, Sphere of Influence, Phasing lines, etc.) on the revised site plan.
14. Consult with the Visalia Parks and Recreation Department for information on whether the redistribution of the designated Parks/Recreation area identified by the Visalia General Plan will be supported. The Visalia Parks and Recreation Department shall also be consulted for questions regarding reimbursement for buildout of park areas.

NOTE: Staff recommendations contained in this document are not to be considered support for a particular action or project unless otherwise stated in the comments.

Landscaping and Lighting Act District:

1. A landscaping and lighting act district, or similar instrument, may be required for the maintenance of common areas or infrastructure such as street lights and similar infrastructure.
2. Annexation to an existing district may be required.
3. That a Landscaping and Lighting Act Assessment District be formed, prior to recordation of the final map, for the maintenance of the landscaping and fences and/or walls along the public street frontages and open space areas of the subdivision. The Landscaping and Lighting Act Assessment District shall also include the operational and maintenance cost for the street lights both internal to the subdivision and along streets abutting the subdivision. The Landscape and Lighting Act District shall also include provisions for the City to collect payments from the subdivider to cover the estimated cost to operate and maintain the improvements of the District prior to assessments occurring on the property tax roll.

17.32.080 Maintenance of landscaped areas.

A landscaped area provided in compliance with the regulations prescribed in this title or as a condition of a use permit or variance shall be planted with materials suitable for screening or ornamenting the site, whichever is appropriate, and plant materials shall be maintained and replaced as needed, to screen or ornament the site. (Prior code § 7484)

Site Area in non-residential zones – ZO Section **17.30.015-A** - Site areas less than 5 acres may be approved/created upon approval of an acceptable master plan by the Site Plan Review Committee.

R-1-5 Single Family Residential Zone [17.12]
Maximum Building Height: 35 Feet

Minimum Setbacks:	**Building**	**Landscaping**
➢ Front	15 Feet	15 Feet
➢ Front Garage (garage w/door to street)	22 Feet	22 Feet
➢ Side	5 Feet	5 Feet
➢ Street side on corner lot (long side of lot)	10 Feet	10 Feet
➢ Street side on corner to garage door	22 Feet	22 Feet
➢ Rear	25 Feet*	25 Feet

Minimum Site Area: 5,000 square feet

Accessory Structures:

Maximum Height: 12 feet (as measured from average grade next to the structure)
Maximum Coverage: 20% of required Rear Yard (last 25 feet by the width)
Reverse Corner Lots: No structure in the 15 feet of adjacent lot's front yard area, see Zoning Ordinance Section 17.12.100 for complete standards and requirements.

R-1-12.5 Single Family Residential Zone [17.12]

Maximum Building Height: 35 Feet

Minimum Setbacks:	**Building**	**Landscaping**
➢ Front	30 Feet	30 Feet
➢ Side	5 Feet	5 Feet
➢ Street side on corner lot	10 Feet	10 Feet
➢ Rear	25 Feet	25 Feet

*May encroach up to five feet with prior approval or on cul-de-sac lots.

*Minimum 22 feet to any front loading garage or carport.

Minimum Site Area: 12,500 square feet

R-1-20 Single Family Residential Zone [17.12]

Maximum Building Height: 35 Feet

Minimum Setbacks:	**Building**	**Landscaping**
➢ Front	35 Feet	35 Feet
➢ Side	10 Feet	10 Feet
➢ Street side on corner lot	20 Feet	20 Feet
➢ Rear	25 Feet	25 Feet

*May encroach up to five feet with prior approval or on cul-de-sac lots.

Minimum Site Area: 20,000 square feet

DEVELOPMENT STANDARDS - R-M-2 [17.16]

Maximum Building Height: 35 Feet

Minimum Setbacks:	**Building**	**Landscaping**
➢ Front	15 Feet	15 Feet
➢ Side	5 Feet	5 Feet*
➢ Street side on corner lot	10 Feet	10 Feet

➢ Rear	25 Feet	25 Feet

Minimum Site Area: 3,000 square feet per unit

- ➢ Common open space
- ➢ Screen 2nd story windows when adjacent to an R-1 Site, Single-Family Residential
- ➢ Conditional Use Permit for 80 or more units
- ➢ Alley exception for rear setback to parking structure, open space still needed
- ➢ Minimum site area 2 acres, unless CUP, zoning action, or Master Plan approved by SPR
- ➢ Screen all parking areas adjacent to public streets. Parking subject to Chapter 17.34.

See Zoning Ordinance Section 17.16 for complete standards and requirements.

DEVELOPMENT STANDARDS - R-M-3 [17.16]

Maximum Building Height: 35 Feet

Minimum Setbacks:	**Building**	**Landscaping**
➢ Front	15 Feet	15 Feet
➢ Side	5 Feet	5 Feet*
➢ Street side on corner lot	10 Feet	10 Feet
➢ Rear	15 Feet	15 Feet

Minimum Site Area: 1,200 square feet per unit

- ➢ Common open space
- ➢ Conditional Use Permit for 40 or more units
- ➢ Alley exception for rear setback to parking structure, open space still needed
- ➢ Minimum site area 2 acres, unless CUP, zoning action, or Master Plan approved by SPR
- ➢ Screen all parking areas adjacent to public streets. Parking subject to Chapter 17.34.
- ➢ See Zoning Ordinance Section 17.16 for complete standards and requirements.

Parking:

1. Provide parking spaces based Zoning Ordinance Section 17.34.020
2. 30% of the required parking stalls may be compact and shall be evenly distributed in the lot.
3. Provide handicapped space(s).
4. An 80 sq. ft. minimum landscape well is required every 10 contiguous parking.
5. A planter is required every other row. (5-9 feet in width containing trees on twenty (20) foot centers.
6. No repair work or vehicle servicing allowed in a parking area.
7. It is highly recommended that bicycle rack(s) be provided on site plan.
8. No parking shall be permitted in a required front/rear/side yard.
9. Design/locate parking lot lighting to deflect any glare away from abutting residential areas.
10. Parking lot to be screened from view by a 3-foot tall solid wall or shrubs when located adjacent to a public street or when across from residential property.
11. Front carport area to have a 3 to 6-foot tall screening wall.
12. Provide shopping cart storage areas on site plan.
13. Provide transit facilities on site plan.
14. Provide shared parking/access agreements
15. Provide off-street loading facility.
16. The project should provide preferential parking spaces for carpools and vanpools to decrease the number of single occupant vehicle work trips. The preferential treatment could include covered parking spaces or close-in parking spaces, or designated free parking, or a guaranteed space for the vehicle.
17. Provide a "No Parking" (dead-head) stall at the end of the parking row (for rows over 6 stalls deep with no outlet) to allow vehicles to turn around rather than backing out if no stalls are available.

Fencing and Screening:

1. Provide screening for roof mounted equipment (Zoning Ordinance Section 17.30.130.F).
2. Provide second-story screening for all windows that may intrude into adjacent residential properties. Details and cross-sections will be required to be reviewed and approved prior to issuance of building permits (Zoning Ordinance Section 17.30.130.F).
3. Provide screened trash enclosure with solid screening gates (Zoning Ordinance Section 17.30.130.F).
4. Provide solid screening of all outdoor storage areas. Outdoor storage to be screened from public view with solid material (Zoning Ordinance Section 17.30.130.F).
5. Outdoor retail sales prohibited.
6. Cross Sections need to be provided for site Plan Review if there is greater than an 18-inch difference between the elevation of the subject site and the adjacent properties, and the sections would be required for the public hearing process also.
7. All outdoor storage areas are to be identified on the site plan and they are to be shown with screening (fencing). No materials may be stored above the storage area fence heights (Zoning Ordinance Section 17.30.130.F).
8. If there is an anticipated grade difference of more than 12-inches between this site and the adjacent sites, a cross section of the difference and the walls must be provided as a part of the Subdivision and/or CUP application package.
9. NOTE: The maximum height of block walls and fences is 7-feet in the appropriate areas; this height is measured on the tallest side of the fence. If the height difference is such that the fence on the inside of the project site is not of sufficient height, the fence height should be discussed with Planning Staff prior to the filing of applications to determine if an Exception to fence/wall height should also be submitted.

Landscaping:

1. The City has adopted the State Water Efficient Landscape Ordinance. The ordinance applies to projects installing 2,500 square feet or more of landscaping. It requires that landscaping and irrigation plans be certified by a qualified entity (i.e., Landscape Architect) as meeting the State water conservation requirements. The City's implementation of this new State law will be accomplished by self-certification of the final landscape and irrigation plans by a California licensed landscape architect or other qualified entity with sections signed by appropriately licensed or certified persons as required by the ordinance. **NOTE: Prior to a final for the project, a signed Certificate of Compliance for the MWELO standards is required indicating that the landscaping has been installed to MWELO standards.**
2. Provide street trees at an average of 20-feet on center along street frontages. All trees to be 15-gallon minimum size (Zoning Ordinance Section 17.30.015-2).
3. In the P(R-M) multi-family residential zone, all multiple family developments shall have landscaping including plants, and ground cover to be consistent with surrounding landscaping in the vicinity. Landscape plans to be approved by city staff prior to installation and occupancy of use and such landscaping to be permanently maintained. (Zoning Ordinance Section 17.16.180)
4. All landscape areas to be protected with 6-inch concrete curbs (Zoning Ordinance Section 17.30.130.F).
5. All parking lots to be designed to provide a tree canopy to provide shade in the hot seasons and sunlight in the winter months.
6. Provide a detailed landscape and irrigation plan as a part of the building permit package (Zoning Ordinance Section 17.34.040).
7. An 80 sq. ft. minimum landscape well is required every 10 contiguous parking stalls (Zoning Ordinance Section 17.30.130.C).
8. Provide a detailed landscape and irrigation plan for review prior to issuance of building permits. Please review Zoning Ordinance section 17.30.130-C for current landscaping and irrigation requirements.

9. Provide a conceptual landscape plan for resubmittal or planning commission review.
10. Locate existing oak trees on site and provide protection for all oak trees greater than 2" diameter (see Oak Tree Preservation Ordinance).
11. Maintenance of landscaped areas. - A landscaped area provided in compliance with the regulations prescribed in this title or as a condition of a use permit or variance shall be planted with materials suitable for screening or ornamenting the site, whichever is appropriate, and plant materials shall be maintained and replaced as needed, to screen or ornament the site. (Prior code § 7484)

Lighting:

1. All lighting is to be designed and installed so as to prevent any significant direct or indirect light or glare from falling upon any adjacent residential property. This will need to be demonstrated in the building plans and prior to final on the site.
2. Parking lot and drive aisle lighting adjacent to residential units or designated property should consider the use of 15-foot high light poles, with the light element to be completely recessed into the can. A reduction in the height of the light pole will assist in the reduction/elimination of direct and indirect light and glare which may adversely impact adjacent residential areas.
3. Building and security lights need to be shielded so that the light element is not visible from the adjacent residential properties, if any new lights are added or existing lights relocated.
4. NOTE: Failure to meet these lighting standards in the field will result in no occupancy for the building until the standards are met.
5. In no case shall more than 0.5 lumens be exceeded at any property line, and in cases where the adjacent residential unit is very close to the property line, 0.5 lumens may not be acceptable.

San Joaquin Valley Air Pollution Control District (SJVAPCD)

Please note that the project is subject to SJVAPCD Rule 9510. The applicant is encouraged to do early indirect source modeling consultation with the Air District

Valley Oak Tree

NOTE: Any development under the canopy of a Valley Oak Tree must be reviewed and approved by the City Arborist. Applicants should not prepare any final plans without a review and approval of a detailed site plan by the City Arborist or his appointee.
NOTE: This comment does not represent staff support of a discretionary action that must be approved by the Planning Commission. The fees are not refundable if the action is denied.

The Model Good Neighbor Policies are adopted by Resolution 2006-60 to read as follows:

17.16.190 Model Good Neighbor Policies.

Before issuance of building permits, project proponents of multi-family residential developments in the R-M zones that are subject to approval by the Site Plan Review Committee or the Planning Commission, shall enter into an operational management plan (Plan), in a form approved by the City for the long term maintenance and management of the development. The Plan shall include but not be limited to: The maintenance of landscaping for the associated properties; the maintenance of private drives and open space parking; the maintenance of the fences, on-site lighting and other improvements that are not along the public street frontages; enforcing all provisions covered by covenants, conditions and restrictions that are placed on the property; and, enforcing all provisions of the model Good Neighbor Policies as specified by Resolution of the Planning Commission, and as may be amended by resolution. A statement referencing the applicability of the Plan to the project, and noting the Plan's availability at the City Community Development Department shall be recorded with the Tulare County Recorder. This Section shall be enforceable on a continuous basis pursuant to Chapter 17.46.

A. Operational Management Plan Required

Before issuance of a building permit for a multi-family project in the R-M zone that is subject to review and approval by the Site Plan Review Committee or the Planning Commission, an operational management plan (Plan) shall be established for the long-term maintenance and management of the project. The Plan shall include but not be limited to the following:

a. The maintenance of landscaping for the associated properties;
b. The maintenance of private drives and open space parking;
c. The maintenance of the fences, on-site lighting and other improvements that are not along the public street frontages;
d. Enforcing all provisions covered by covenants, conditions and restrictions that are placed on the property; and
e. Enforcing all provisions of the model Good Neighbor Policies as specified by Resolution of the Planning Commission.

B. Plan Shall Be Recorded

Before issuance of a building permit for the project, applicant shall prepare a statement in a form approved by the Planning Director, referencing the applicability of the Plan to the project, and noting the Plan's availability at the City Community Development Department. The statement shall be recorded with the Tulare County Recorder.

C. Maintenance and Operations

1. All development standards, City codes, and ordinances shall be continuously met for this apartment/residential complex. Buildings and premises, including paint/siding, roofs, windows, fences, parking lots, and landscaping shall be kept in good repair. Premises shall be kept free of junk, debris.
2. Provide a regular program for the control of infestation by insects, rodents, and other pests at the initiation of the tenancy and control infestation during the tenancy.
3. Where the condition is attributable to normal wear and tear, make repairs and arrangements necessary to put and keep the premise in as good condition as it by law or rental agreement should have been at the commencement of tenant occupation.
4. Maintain all electrical, plumbing, heating, and other facilities in good working order.
5. Maintain all dwelling units in reasonably weather tight condition and good exterior appearance.
6. Remove graffiti within 24 hours of it having been observed.
7. Recreation facilities shall be for tenant use only.
8. Provide 24-hour access for Visalia Police Department to Maintenance and/or Management Staff. Maintenance and/or Management Staff shall be available by telephone or pager at all times, with phone numbers to be provided to the Police Department dispatch center and kept current at all times.
9. Establish and conduct a regular program of routine maintenance for the apartment/residential complex. Such a program shall include, but not necessarily be limited to regular inspections of common areas and scheduled re-paintings, re-plantings, and other similar activities that typically require attention at periodic intervals but not necessarily continuously.
10. The name and phone number of the management company shall be posted in a prominent location at the front of the property.

D. Landscape Care and Maintenance

1. Automatic irrigation systems shall be maintained.

2. All plant materials (trees, shrubs, and groundcover) shall be maintained so that harm from physical damage or injury arising from vehicle damage, lack of water, chemical damage, insects, and other pests is minimized.
3. It is the responsibility of the property owners to seek professional advice and spray and treat trees, shrubs, and groundcover for diseases which can be successfully controlled if such untreated diseases are capable of destroying an infected tree or other trees within a project.
4. Maintain decorative planting so as not to obstruct or diminish lighting level throughout the apartment/residential complex. Landscaping shall not obscure common areas.

E. Parking - The parking of inoperative vehicles on-site, and boats, trucks (one-ton capacity and over), trailers, and/or recreational vehicles in the apartment/residential complex is not allowed.

F. Tenant Agreement - The tenant agreement for the complex must contain the following:

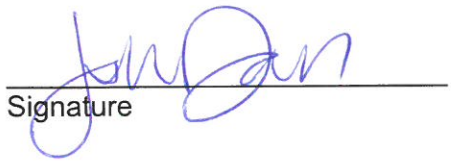
1. Standards of aesthetics for renters in regard to the use and conditions of the areas of the units visible from the outside (patios, entryways).
2. Hours when noise is not acceptable, based upon Community Noise Standards, additional standards may be applied within the apartment/residential complex.
3. Rules for use of open areas/recreational areas of the site in regard to drinking, congregating, or public nuisance activities.
4. Prohibition on inoperable vehicles on-site, and boats, trucks (one-ton capacity and over), trailers and/or recreational vehicles.
5. Standards of behavior for tenants that could lead to eviction.
6. All tenants shall read and receive a copy of the Tenant Agreement.

Ditches

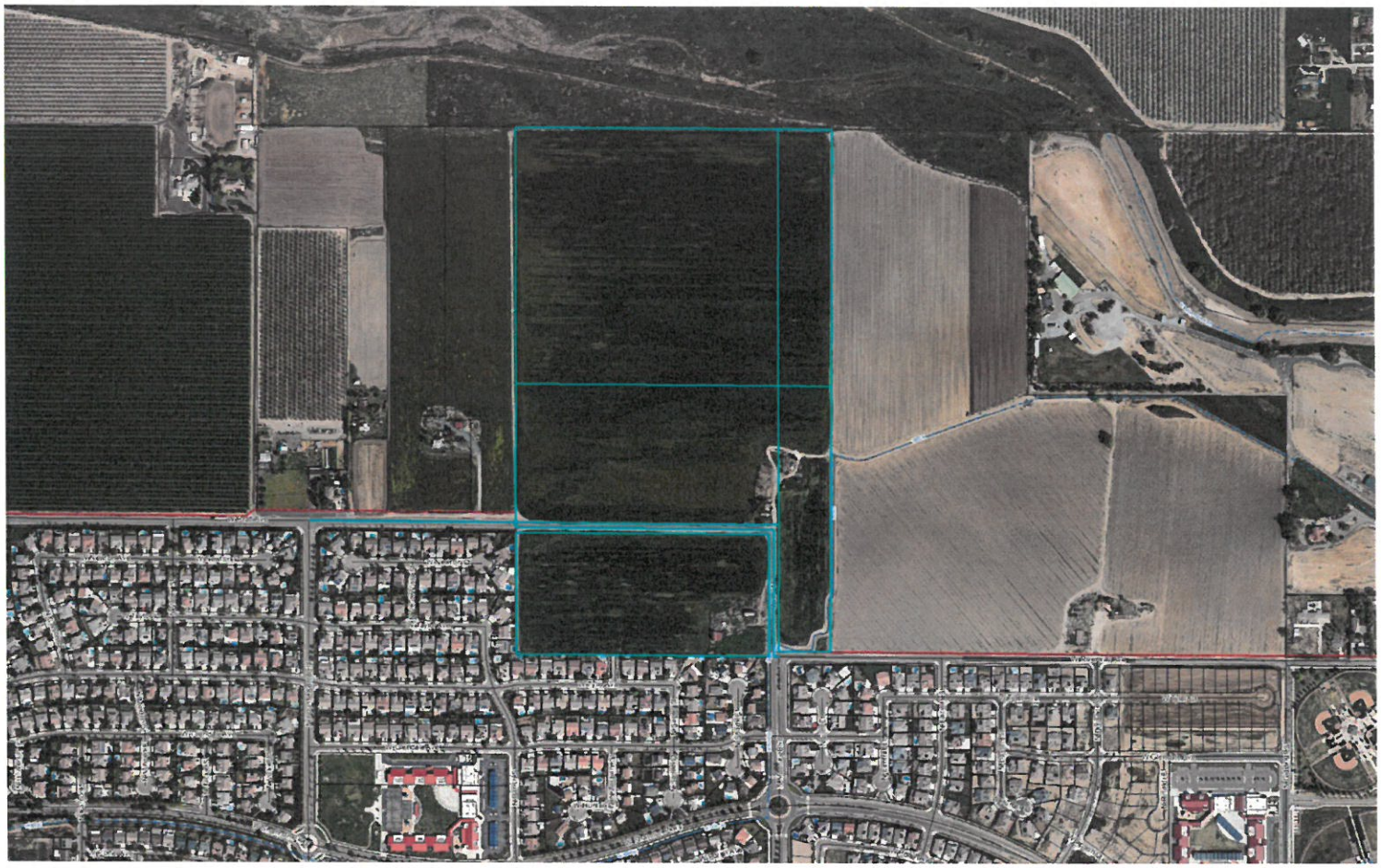
James Silva 747-1177

- Modoc

NOTE: Staff recommendations contained in this document are not to be considered support for a particular action or project unless otherwise stated in the comments. The comments found on this document pertain to the site plan submitted for review on the above referenced date. Any changes made to the plan submitted must be submitted for additional review.



Signature



SPR20204
PRATT FAMILY RANCH TIER II Resid. DEVELOPMENT
2100 W PRATT RD.

City of Visalia

Building: Site Plan Review Comments

NOTE: These are general comments and DO NOT constitute a complete plan check for your specific project Please refer to the applicable California Code & local ordinance for additional requirements.

- [x] A building permit will be required. *For information call (559) 713-4444*
- [x] Submit 1 digital set of professionally prepared plans and 1 set of calculations. (Small Tenant Improvements)
- [ ] Submit 1 digital set of plans prepared by an architect or engineer. Must comply with 2016 California Building Cod Sec. 2308 for conventional light-frame construction or submit 1 digital set of engineered calculations.
- [ ] Indicate abandoned wells, septic systems and excavations on construction plans.

You are responsible to ensure compliance with the following checked items:

- [x] Meet State and Federal requirements for accessibility for persons with disabilities. MAN GATE ACCESS.
- [ ] A path of travel, parking and common area must comply with requirements for access for persons with disabilities.
- [ ] All accessible units required to be adaptable for persons with disabilities.
- [ ] Maintain sound transmission control between units minimum of 50 STC.
- [ ] Maintain fire-resistive requirements at property lines.
- [ ] A demolition permit & deposit is required. *For information call (559) 713-4444*
- [ ] Obtain required permits from San Joaquin Valley Air Pollution Board. *For information call (661) 392-5500*
- [ ] Plans must be approved by the Tulare County Health Department. *For information call (559) 624-8011*
- [x] Project is located in flood zone AE * [ ] Hazardous materials report. MEET FEMA FLOOD REQUIREMENTS
- [ ] Arrange for an on-site inspection. (Fee for inspection $157.00) *For information call (559) 713-4444*
- [ ] School Development fees. Commercial $0.66 per square foot & Self-Storage $.23 per sf. Residential $4.16 per square foot.
- [ ] Park Development fee $_____, per unit collected with building permits.
- [ ] Additional address may be required for each structure located on the site. *For information call (559) 713-4320*
- [ ] Acceptable as submitted
- [ ] No comments at this time

Additional comments: _____

_____

_____

_____

VAL GARCIA 12/23/20
Signature

Site Plan Comments Visalia Fire Department Corbin Reed, Fire Marshal 420 N. Burke Visalia CA 93292 559-713-4272 office prevention.division@visalia.city	Date Item # Site Plan # APN:	December 22, 2020 4 20204 078010028

- The Site Plan Review comments are issued as **general overview** of your project. With further details, additional requirements will be enforced at the Plan Review stage. Please refer to the 2019 California Fire Code (CFC), 2019 California Building Codes (CBC) and City of Visalia Municipal Codes.

- Construction and demolition sites prior to and during construction shall comply with the following:
  - **Water supply** for fire protection, either temporary or permanent, shall be made available as soon as combustible materials arrive on the site. 2019 CFC §3312
  - Provide an all-weather, 20 feet width **construction access road** capable of holding a 75,000 pound fire apparatus. Fire apparatus access shall be provided within 100 feet of temporary or permanent fire department connections. 2019 CFC §3310

- This item is a **resubmittal**. Please see comments from previous submittals.

Corbin Reed
Fire Marshal

City of Visalia
420 N. Burke Visalia, California 932912

Fire Department
Telephone (559) 713-4266 Fax: (559) 713-4808

Visalia Fire Department Access and Water Guidelines for Residential Construction

Effective July 1, 2019

Model Homes & Non-Model Homes

Model and Non-Model homes may be constructed once **all** of the following conditions have been met:

1. All portions of proposed residential construction shall be located and accessible within 150 feet of an existing, paved, city street.

2. **Exceptions:** If any portion of a model home or a non-model is located greater than 150 feet from an existing city street, a fire apparatus access road shall be installed and maintained unobstructed at all times. The fire access road, including curb and gutter, shall be installed per City Specifications and City Standard P-1 excluding the Asphalt Concrete layer, but in no circumstance shall have a structural section less than required under City Standard P-25 based on R-Value of existing subgrade unless otherwise specified on approved plans. Compaction tests, including testing of the aggregate base layer, shall be performed under City inspection and reports shall be submitted to the Public Works Inspector prior to City acceptance for the road to be used for fire access. The fire access roads shall be usable and maintained in place until permanent paved access has been provided meeting City standards and specifications.

3. All required fire hydrants shall be installed in the approved locations per the stamped and approved plans and shall be fully operational.

   Exception: If fire hydrant installation has not been completed an onsite elevated water tank shall be provided. The minimum size of provided water tank shall be 10,000 gallons, and shall be designated as "Fire Department use only". Tanks shall be located within 300 feet travel distance of each structure being developed. Tanks shall remain in place until all fire hydrant installation has been completed and all hydrants are fully operational. Travel distance shall be measured by an approved fire apparatus access route.

   Connection provided on water tanks shall be a four and one half inch National Hose thread male fitting and shall be gravity fed, with connection point located between 18 and 36 inches above ground level.

***If at any time the conditions of these guidelines are not being met the Fire Marshal/Fire Chief or his/her designee have the authority to issue a "Stop Work Order" until corrections have been made.**

*** This information is intended to be a guideline. The Fire Marshal and/or Fire Chief shall have the discretion to modify requirements at any time as set forth under CFC Appendix D. The applicability of this guideline will be evaluated on February 1, 2020 by the Fire Marshal or Fire Chief.**

LT. KROEGER LIST

City of Visalia
Police Department
303 S. Johnson St.
Visalia, CA 93292
(559) 713-4370

Date : 12/22/20
Item: 4
Site Plan: SPR20204
Name: PRATT

SITE PLAN REVIEW COMMENTS

☒ No Comment at this time RESUBMIT - SEE PREVIOUS COMMENTS

☐ Request opportunity to comment or make recommendations as to safety issues as plans are developed.

☐ Public Safety Impact Fee:
Ordinance No. 2001-11 Chapter 16.48 of Title 16 of the Visalia Municipal Code
Effective date – August 17, 2001

Impact fees shall be imposed by the City pursuant to this Ordinance as a condition of or in conjunction with the approval of a development project. "New Development or Development Project" means any new building, structure or improvement of any parcels of land, upon which no like building, structure of improvement previously existed. *Refer to Engineering Site Plan comments for fee estimation.

☐ Not enough information provided. Please provide additional information pertaining to:

☐ Territorial Reinforcement: Define property lines (private/public space).

☐ Access Controlled / Restricted etc.:

☐ Lighting Concerns:

☐ Traffic Concerns:

☐ Surveillance Issues:

☐ Line of Sight Issues:

☐ Other Concerns:

Susan Currier

From: Joel Hooyer
Sent: Friday, December 18, 2020 2:14 PM
To: Cristobal Carrillo; Josh Dan; Susan Currier
Cc: Alvin Dias; Jeremy Rogers
Subject: December 23, 2020 Site Plan Review
Attachments: 12-23-20 Site Plan Review.pdf

Importance: High

See attached and following for the December 23, 2020, Site Plan Review comments

SPR 20162 - No Valley oaks are on the submitted plans.
SPR 20188 - No Valley oaks are on the submitted plans.

SPR 20194 – Lot A- Dedicated to the City of Visalia LLD
- No Valley oaks are on the submitted plans.
- No Trails on submitted plans.
- No Parks on submitted plans.

Note* If this newly proposed development is to become an LLD, Park, Trail or any other dedicated land to be maintained by the City of Visalia all lots shall to be accessed appropriately to accommodate such intended maintenance and all the landscaping plans will need to be approved by Urban Forestry.

SPR 20204 – HOA Park (Private) is indicted on the submitted plans.
– Dog Park is indicted on the submitted plans.
– Trails are indicted on the submitted plans.
- No Valley oaks are on the submitted plans.
- Light and Landscape District is not indicated on the submitted plans.

Note* If this newly proposed development is to become a Dog Park, Pocket Park, LLD, Trail or any other dedicated land to be maintained by the City of Visalia all lots shall to be accessed appropriately to accommodate such intended maintenance and all the landscaping plans will need to be approved by Urban Forestry.

SPR 20208 - Valley oaks are on the submitted plans.
- The Valley oaks need to be protected during construction.

SPR 20209 - No Valley oaks are on the submitted plans.
SPR 20210 - No Valley oaks are on the submitted plans.
SPR 20211 - No Valley oaks are on the submitted plans.
SPR 20212 - No Valley oaks are on the submitted plans.
SPR 20213 - No Valley oaks are on the submitted plans.

CITY OF VISALIA
SOLID WASTE DIVISION
336 N. BEN MADDOX
VISALIA CA. 93291
713 - 4532
COMMERCIAL BIN SERVICE

20204

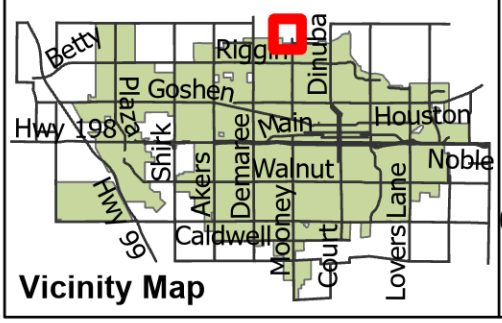
December 23, 2020

	No comments.
XX	See comments below
XX	Revisions required prior to submitting final plans. See comments below.
	Resubmittal required. See comments below.
XX	Customer responsible for all cardboard and other bulky recyclables to be broken down before disposing of in recycle containers
XX	ALL refuse enclosures must be R-3 OR R-4
XX	Customer must provide combination or keys for access to locked gates/bins
	Type of refuse service not indicated.
XX	Location of bin enclosure not acceptable. See comments below.
	Bin enclosure not to city standards double.
	Inadequate number of bins to provide sufficient service. See comments below.
	Drive approach too narrow for refuse trucks access. See comments below.
XX	Area not adequate for allowing refuse truck turning radius of : Commercial 50 ft. outside 36 ft. inside; Residential 35 ft. outside, 20 ft. inside.
XX	Paved areas should be engineered to withstand a 55,000 lb. refuse truck.
XX	Bin enclosure gates are required
	Hammerhead turnaround must be built per city standards.
XX	Cul - de - sac must be built per city standards.
XX	Bin enclosures are for city refuse containers only. Grease drums or any other items are not allowed to be stored inside bin enclosures.
XX	Area in front of refuse enclosure must be marked off indicating no parking
XX	Enclosure will have to be designed and located for a STAB service (DIRECT ACCESS) with no less than 38' clear space in front of the bin, included the front concrete pad.
	Customer will be required to roll container out to curb for service.
XX	Must be a concrete slab in front of enclosure as per city standards, the width of the enclosure by ten(10) feet, minimum of six(6) inches in depth.
	Roll off compactor's must have a clearance of 3 feet from any wall on both sides and there must be a minimum of 53 feet clearance in front of the compactor to allow the truck enough room to provide service.
XX	City ordinance 8.28.120-130 (effective 07/19/18) requires contractor to contract with City for removal of construction debris unless transported in equipment owned by contractor or unless contracting with a franchise permittee for removal of debris utilizing roll-off boxes.
Comment	Customer must refer to revised draft sent 12/16/20 per Nathan Garza. . All proposed enclosure locations should be set for Stab load including the Owen Glen enclosure so as to avoid any issues with the planter to the North. Enclosure gates are to open 180 degrees clear all landscape curbing and not block any walkways. Door shall be equipped with cain bolts to secure them closing.

Jason Serpa, Solid Waste Manager, 559-713-4533
Edward Zuniga, Solid Waste Supervisor, 559-713-4338

Nathan Garza, Solid Waste,559-713-4532

Edward Zuniga



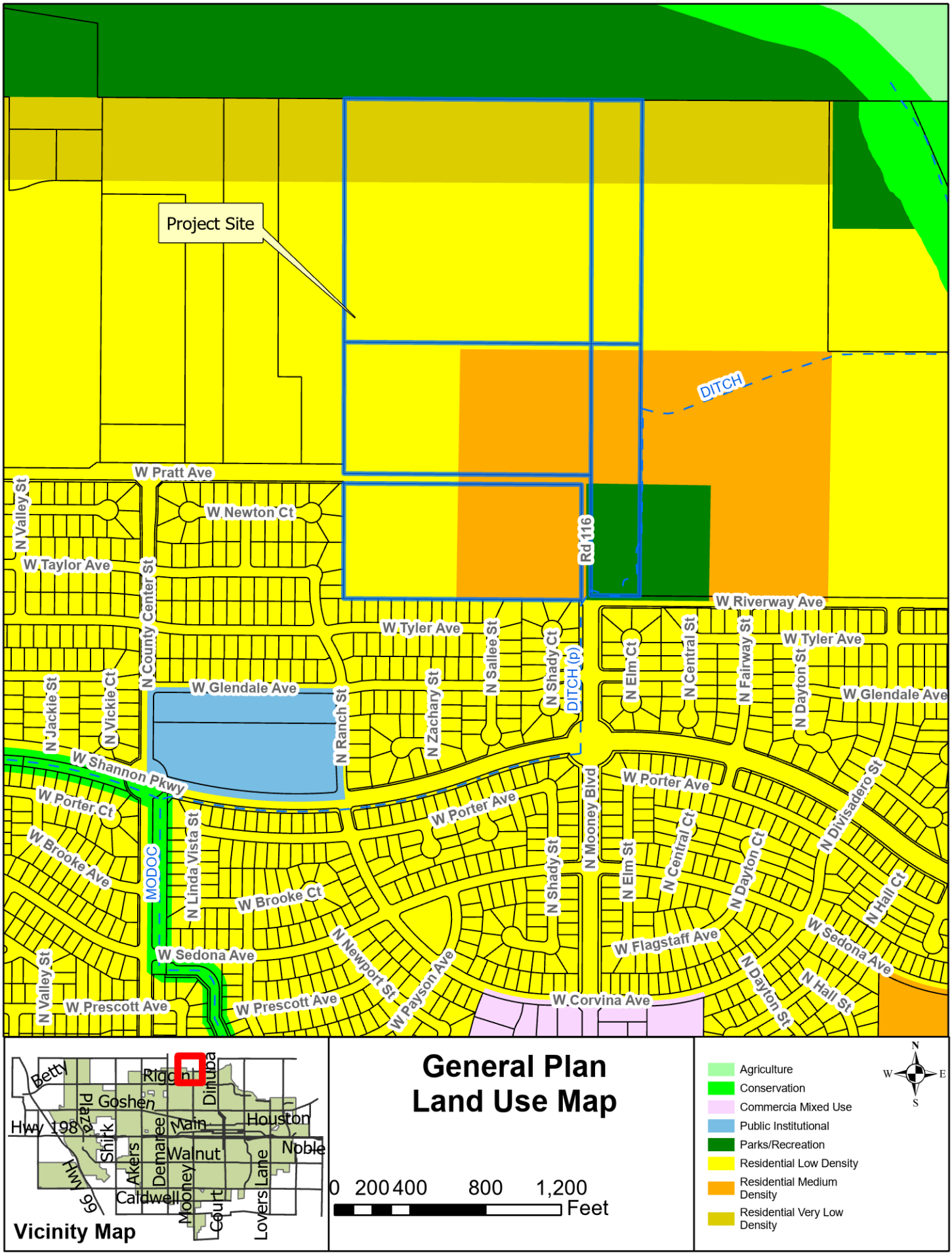
Vicinity Map

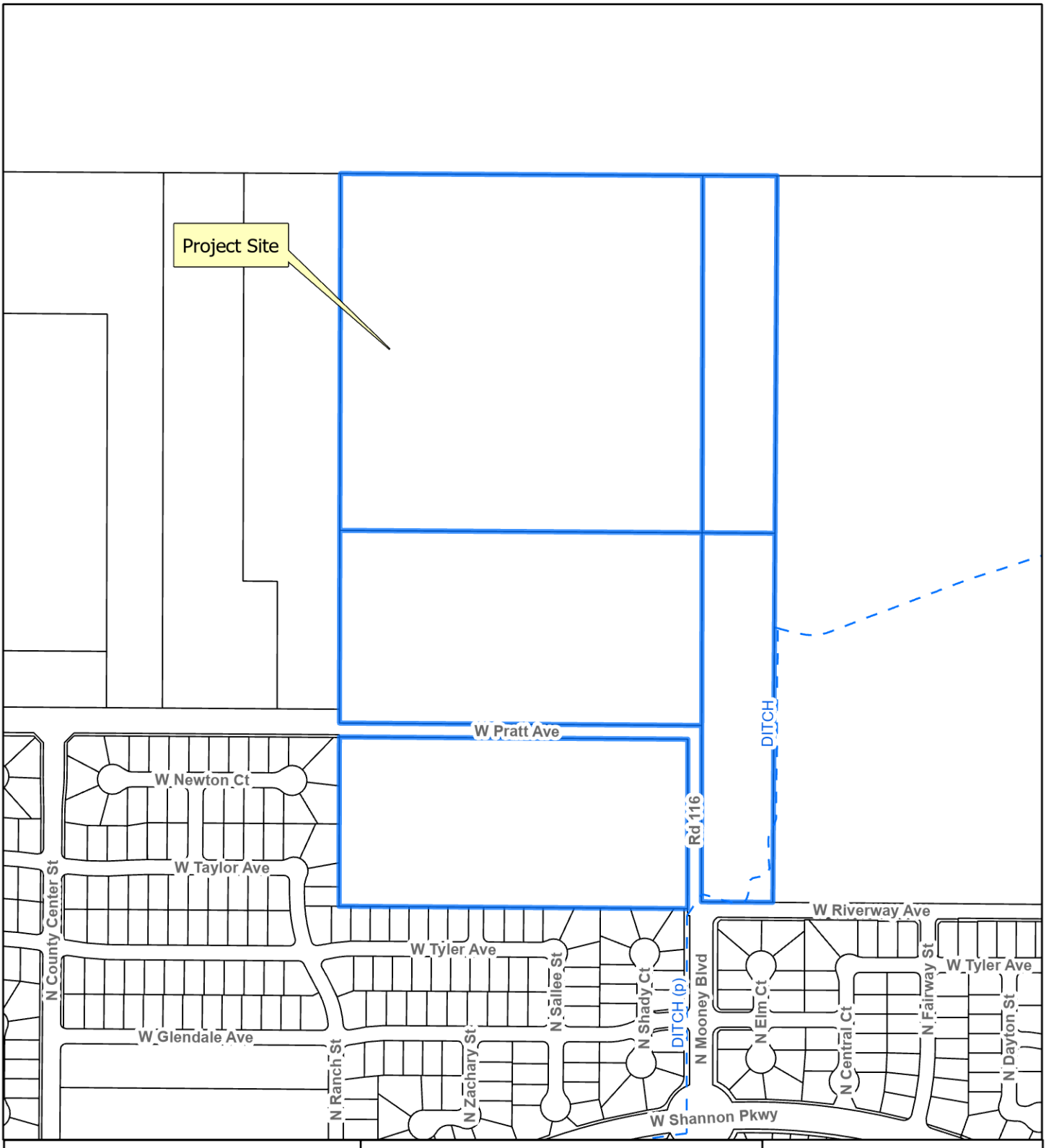
Aerial Photo

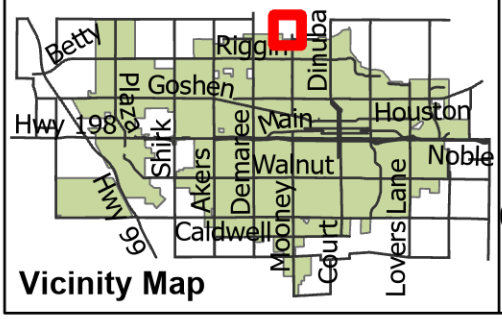
N
W E
S

0 200 400 800 1,200 Feet

VISALIA
Founded 1852


Project Site
DITCH
W Pratt Ave
W Newton Ct
N Valley St
W Taylor Ave
N County Center St
Rd 116
W Riverway Ave
W Tyler Ave
N Sallee St
N Shady Ct
DITCH (p)
N Elm Ct
N Central St
N Fairway St
W Tyler Ave
N Dayton St
W Glendale Ave
N Jackie St
N Vickie Ct
W Glendale Ave
N Ranch St
N Zachary St
W Shannon Pkwy
W Porter Ct
W Porter Ave
W Porter Ave
N Mooney Blvd
N Divisadero St
W Brooke Ave
MODOC
N Linda Vista St
W Brooke Ct
N Shady St
N Elm St
N Central Ct
N Dayton Ct
N Hall Ct
W Sedona Ave
N Newport St
W Flagstaff Ave
W Sedona Ave
N Valley St
W Prescott Ave
W Prescott Ave
W Payson Ave
W Corvina Ave
N Dayton St
N Hall St
Betty
Riggin
Dinuba
Plaza
Goshen
Hwy 198
Shirk
Main
Houston
Akers
Demaree
Walnut
Noble
Hwy 99
Caldwell
Mooney
Court
Lovers Lane
Vicinity Map
General Plan
Land Use Map
0 200 400 800 1,200
Feet
Agriculture
Conservation
Commercia Mixed Use
Public Institutional
Parks/Recreation
Residential Low Density
Residential Medium Density
Residential Very Low Density
N
W
E
S





Vicinity Map

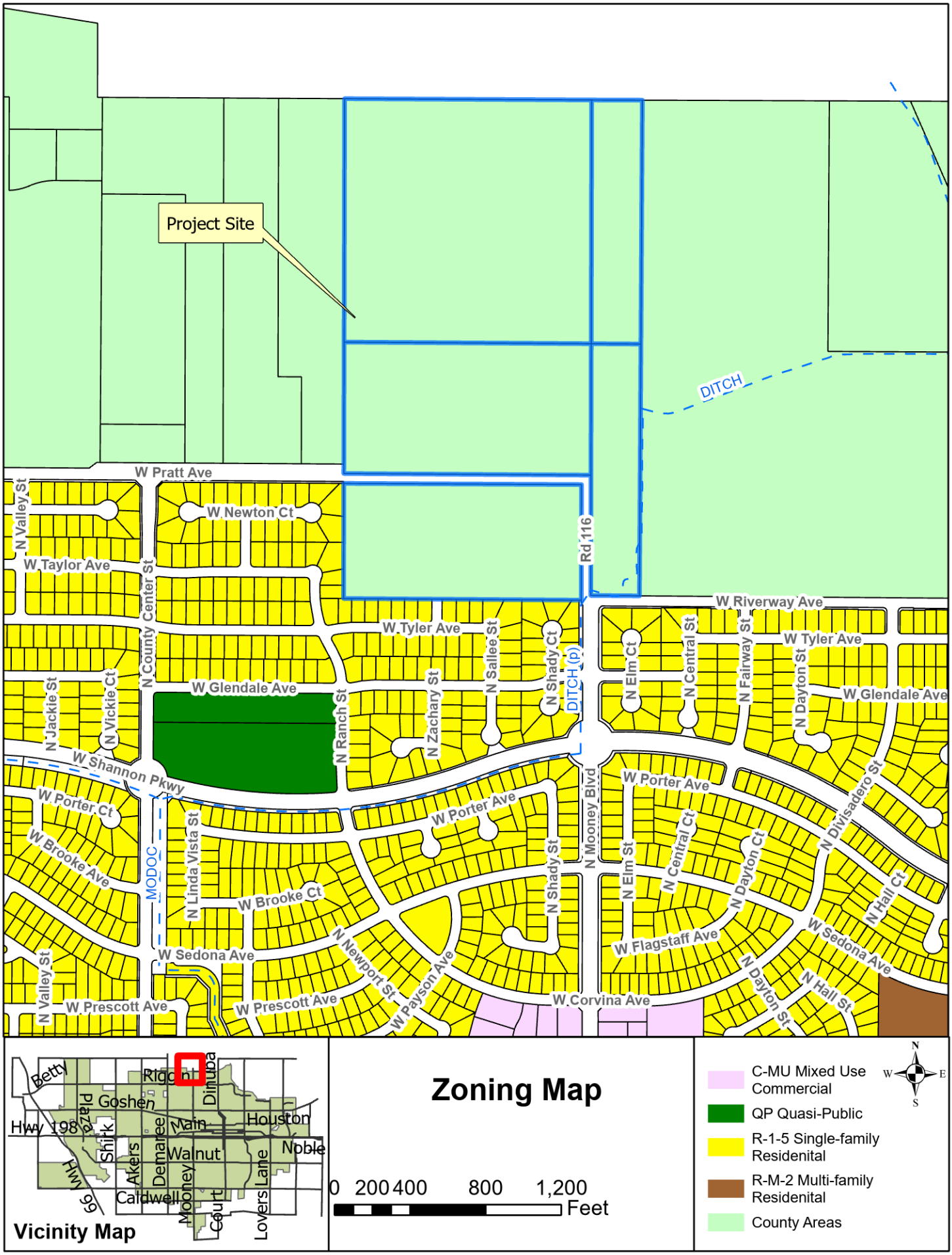
Location Map

N
W E
S

0 200 400 800 1,200 Feet

VISALIA

Founded 1852


Project Site
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Plaza
Goshen
Hwy 198
Shirk
Akers
Demaree
Main
Houston
Walnut
Noble
Hwy 99
Caldwell
Mooney
Court
Lovers Lane
Vicinity Map
Zoning Map
0 200 400 800 1,200
Feet
C-MU Mixed Use Commercial
QP Quasi-Public
R-1-5 Single-family Residenital
R-M-2 Multi-family Residenital
County Areas
N
W
E
S