E202110000026

| CITY OF FRESNO<br><br>**NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION** | Filed with: |
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| **EA No. P20-00635/P20-00636 for**<br>Plan Amendment/Rezone Application Nos. P20-00635 & Conditional Use Permit Application No. P20-00636 | FILED<br>FEB 10 2021 TIME 2:16pm<br>FRESNO COUNTY CLERK<br>By Jessica Munoz DEPUTY |
| PROJECT SPONSOR:<br>BDM Builders, LLC. | FRESNO COUNTY CLERK<br>2220 Tulare Street, Fresno, CA 93721 |
| PROJECT LOCATION:<br>4645 East Jensen Avenue<br>Northeast corner of East Jensen Avenue and South Maple Avenue, Fresno, CA 93704; ±12.18 acres<br>Site Latitude: 36°42'27.6" N<br>Site Longitude: 119°44'38.6"W<br>Mount Diablo Base & Meridian, Township 14S, Range 20E Section 13<br>(APN: 480-030-60) | |

PROJECT DESCRIPTION:

Plan Amendment Application No. P20-00635 to proposes to amend the 2035 Fresno General Plan to change the planned land use designations for the subject property from the Residential Urban Neighborhood (±3.53 acres), Commercial Community (±2.15 acres), and Light Industrial (±5.90 acres) to the Residential High Density (±3.4 acres), Commercial Community (±6.5 acres) and Light Industrial (±2.2 acres).

Rezone Application No. P20-00635 proposing to amend the Official Zoning Map of the City of Fresno to reclassify the subject property from the RM-2/UGM (*Residential Multi-Family, Urban Neighborhood/Urban Growth Management*)(±3.53 acres), CC/UGM (*Community Commercial/Urban Growth Management)(±2.15 acres)* and IL (*Light Industrial/Urban Growth Management)(±5.90 acres)* to the RM-3/UGM (*Residential Multi-Family, High Density/Urban Growth Management)(±3.4 acres),* CC/UGM (*Community Commercial/Urban Growth Management)(±6.5 acres)* and IL/UGM (*Light Industrial/Urban Growth Management)*(±2.2 acres) zone districts in accordance with the Plan Amendment Application No. P20-00635.

Conditional Use Permit Application No. P20-00636 a request to construct a ±170,000 square-foot, 4-story, multi-family residential building with a ±4,000 square-foot day care center; a ±4,000 square-foot convenience store with an eight-dispenser/16-station fuel canopy; and ±73,091 square-feet of retail/office buildings.

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The City of Fresno has conducted an initial study of the above-described project and it has been determined to be a subsequent project that is not fully within the scope of the Master Environmental Impact Report SCH No. 2012111015 (MEIR) prepared for the Fresno General Plan. Therefore, the Planning and Development Department proposes to adopt a Mitigated Negative Declaration for this project.

With the project specific mitigation imposed, there is no substantial evidence in the record that this project may have additional significant, direct, indirect or cumulative effects on the environment that are significant and that were not identified and analyzed in the MEIR. After conducting a review of the adequacy of the MEIR pursuant to Public Resources Code, Section 21157.6(b)(1), the Planning and Development Department, as lead agency, finds that no substantial changes have occurred with respect to the circumstances under which the MEIR was certified and that no new information, which was not known and could not have been known at the time that the MEIR was certified as complete has become available. The project is not located on a site which is included on any of the lists enumerated under Section 65962.5 of the Government Code including, but not limited to, lists of hazardous waste facilities, land designated as hazardous waste property, hazardous waste disposal sites and others, and the information in the Hazardous Waste and Substances Statement required under subdivision (f) of that Section.

Additional information on the proposed project, including the MEIR proposed environmental finding of a mitigated negative declaration and the initial study may be obtained from the Planning and Development Department, Fresno City Hall, 2600 Fresno Street, 3rd Floor Fresno, Room 3043, California 93721-3604. Please contact Jose Valenzuela at (559) 621-8070 for more information.

ANY INTERESTED PERSON may comment on the proposed environmental finding. Comments must be in writing and must state (1) the commentor's name and address; (2) the commentor's interest in, or relationship to, the project; (3) the environmental determination being commented upon; and (4) the specific reason(s) why the proposed environmental determination should or should not be made. Any comments may be submitted at any time between the publication date of this notice and close of business on **March 2, 2021**. Please direct comments to Jose Valenzuela, Planner, City of Fresno Planning and Development Department, City Hall, 2600 Fresno Street, Room 3043, Fresno, California, 93721-3604; or by email to Jose.Valenzuela@fresno.gov; or comments can be sent by facsimile to (559) 498-1026.

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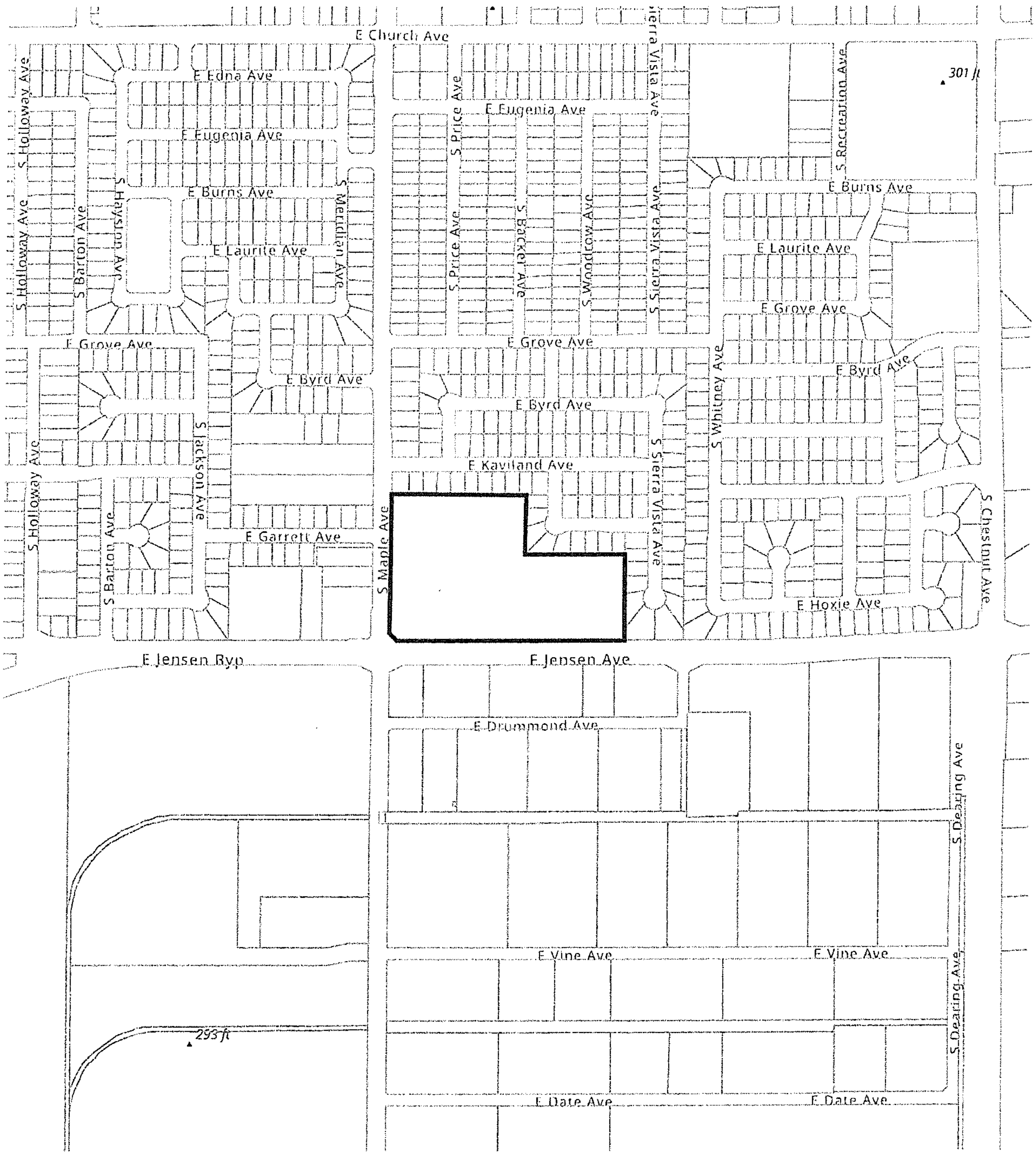
| INITIAL STUDY PREPARED BY:<br>QK, Inc.<br>City of Fresno | SUBMITTED BY:<br><br>Ralph Kachadourian, Supervising Planner<br>CITY OF FRESNO PLANNING AND DEVELOPMENT DEPARTMENT |
| DATE: February 10, 2021 | |

E20211000026

# VICINITY MAP




**Subject Property**

## APPENDIX G/INITIAL STUDY FOR A MITIGATED NEGATIVE DECLARATION

**Environmental Checklist Form for:**
**Environmental Assessment No. P20-00635/P20-00636**

1. **Project title:**
   BDM Builders Mixed Use Development project (P20-00636/ P20-00635)

2. **Lead agency name and address:**
   City of Fresno
   Planning and Development Department
   2600 Fresno Street
   Fresno, CA 93721

3. **Contact person and phone number:**
   ***Jose Valenzuela***, ***Planner***
   City of Fresno
   Planning and Development Department
   2600 Fresno Street, Room 3065
   (559) 621-8060

4. **Project location:**
   4645 East Jensen Avenue
   Northeast corner of East Jensen Avenue and South Maple Avenue, Fresno, CA 93704; ±12.18 acres
   Site Latitude: 36°42'27.6" N
   Site Longitude: 119°44'38.6"W
   Mount Diablo Base & Meridian, Township 14S, Range 20E Section 13
   (APN: 480-030-60)

5. **Project sponsor's name and address:**
   **Applicant:** Nick Yovino
   California Land Consulting
   1879 South Homsy Avenue
   Fresno, CA 93727
   **Owner:** BDM Builders, LLC, a California limited liability company
   99 South Almaden Blvd.,
   San Jose, Ca 95113

6. **General & Community Plan Land Use Designation:**
   Existing: Light Industrial (±5.9 acres), Community Commercial (±2.2 acres), and Residential – Urban Neighborhood (±3.5 acres.) (City of Fresno General Plan)
   Proposed: Light Industrial (±2.2 acres), Community Commercial (±6.5 acres) and Residential – High Density (±3.4acres) (City of Fresno General Plan)

7. **Zoning:**
Existing: IL (*Light Industrial*) (±5.9 acres), CC (*Community Commercial*) (±2.2 acres), and RM-2 (*Urban Neighborhood*) (±3.5 acres)
Proposed: IL (*Light Industrial*) (±2.2 acres) CC (*Community Commercial*) (±6.5 acres), and RM-3 (*High Density Residential*) (±3.4 acres)

8. **Description of Project:**
This project (the “Project”) is a proposed integrated mixed-use development consisting of community commercial, light industrial, and multifamily residential uses. It is located on 12.18 vacant acres on the northeast corner of S. Maple and E. Jensen Avenues. The Project Site is planned and zoned for a mixture of community commercial, light industrial, and multifamily residential uses under the City’s current General Plan and Roosevelt Community Plan.

P20-00636 (Conditional Use Permit) and P20-00635 (Plan Amendment – Rezone), was filed by Nick Yovino of California Land Consulting, on behalf of Hamel Investment Properties LLC. The property was subsequently acquired by BDM Builders, LLC., a California limited liability company.

This Project is a proposed integrated mixed-use development consisting of community commercial, light industrial, and multifamily residential uses. It is located on approximately 12.18 vacant acres on the northeast corner of S. Maple and E. Jensen Avenues. The site is planned and zoned (see Figure A) for a mixture of community commercial, light industrial, and multifamily residential uses under the City’s current General Plan and Roosevelt Community Plan.

The Project Site also consists of a plan amendment, rezone, development permit (site plan), conditional use permit and parcel map to rearrange the current planned land use and zoning as shown on Figure A.1 and Figure A.2. The Project would be developed as an integrated mixed-use project as depicted on the site plan and tentative parcel map.

The conditional use permit would allow two drive-through windows as proposed on Parcels B and D. Proposed by parcel:

- Parcel A (1.49 AC) – 4,000 square foot gasoline service station with 1,400 square foot of retail space (5,400 square feet total) and 3,400 square foot carwash. The gasoline station would have 8 pumps and the car wash would be a drive through facility.
- Parcel B (0.68 AC) – 2,866 square foot fast food restaurant with a drive through window.
- Parcel C (1.33 AC) – Single building with 7,500 square feet of retail space.
- Parcel D (0.97 AC) – 5,225 square foot high-turnover restaurant and 1,600 square foot coffee shop.
- Parcel E (0.94 AC) – 11,700 square foot medical building.

- Parcel F (0.87 AC) – 9,000 square foot retail building.
- Parcel G (0.78 AC) – 10,400 square foot bank/office building.
- Parcel H (1.23 AC) – 12,000 square foot retail building (portion).
- Parcel I (0.36 AC) – 3,000 square foot office building (portion).
- Parcel J (0.39 AC) – 5,000 square foot retail building.
- Parcel K (0.28 AC) – 4,000 square foot day care.
- Parcel L (2.86 AC) – 170,000 square foot multi-family building with 151 units.

Parcels A and B are to be planned and zoned for approximately 2.2 acres of Light Industrial uses.

Parcels C through J are to be planned and zoned for approximately 6.5 acres of Community Commercial uses.

Parcel L, K, and a portion of Parcel H would be planned and zoned for approximately 3.4 acres of High Density/RM-3 uses.

Regarding the overall development, the following should be noted:

- The site will be developed with integrated architecture, circulation, parking and landscaping.
- The Project is a reconfiguration of already planned and zoned property to better implement existing mixed use and increased density goals policies of the City's General Plan.
- The conditional use permit will cover both drive through windows.
- The operational statement for the daycare will be filed separately by the facility proponent.
- A traffic study has been completed pursuant to City requirements. The study concluded that subject to the street and traffic requirements of the City shown on the site plan, the Project Site and surrounding area will have adequate circulation.
- Required air quality, cultural, and biological studies have been completed to assist the City in the preparation of the environmental finding.
    - The Project will be phased in the following manner:
    - Phase 1 – Parcels A and B (Light Industrial)
    - Phase 2 – Parcels C and D (Community Commercial)
    - Phase 3 – Parcels F, G, H, I and J (Community Commercial/High Density Residential)
    - Phase 4 – Parcels K and L (High Density Residential)
    - Phase 5 – Parcel E (Community Commercial)
- Two access points are proposed along Jensen Avenue (super arterial) and three points along Maple Avenue (arterial). Each street would have one left turn access.

- There will be no alcohol sales proposed as part of this Project.
- Required public informational neighborhood meeting was held November 20, 2019. The meeting notice and minutes are provided.

9. **Surrounding land uses and setting:**

| | Planned Land Use | Existing Zoning | Existing Land Use |
|---|---|---|---|
| **North** | Residential – Medium Low Density Residential | **RS-4 (City)** *(Residential Single-Family, Medium Low Density)* | Single Family Residential |
| **East** | Residential – Medium Low Density Residential | **RS-4 (City)** *(Residential Single-Family, Medium Low Density)* | Single Family Residential |
| **South** | Light Industrial | **M3 (Fresno County)** *(Heavy Industrial)* | Light Industrial |
| **West** | Residential – Medium Density Residential and Commercial General | **RS-5 (City)** *(Residential Single-Family, Medium Density),* ***CG (City)*** *(Community General)* | Single Family Residential and a Gas Station |

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):** Planning and Development Department, Building & Safety Services Division; Department of Public Works; Department of Public Utilities; County of Fresno, Department of Community Health; County of Fresno, Department of Public Works and Planning; City of Fresno Fire Department; Fresno Metropolitan Flood Control District; and San Joaquin Valley Air Pollution Control District.

11. **Have California Native American tribes traditionally and culturally affiliated with the project site requested consultation pursuant to Public Resources Code (PRC) Section 21080.3.1? If so, has consultation begun?** The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the California Environmental Quality Act (CEQA) Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)). According to the most recent census data, California is home to 109 currently recognized Indian tribes. Tribes in California currently have nearly 100 separate reservations or Rancherias. Fresno

County has a number of Rancherias such as Table Mountain Rancheria, Millerton Rancheria, Big Sandy Rancheria, Cold Springs Rancheria, and Squaw Valley Rancheria. These Rancherias are not located within the city limits.

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 PRC Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

Pursuant to Senate Bill 18 (SB 18), Native American tribes traditionally and culturally affiliated with the Project Site were invited to consult regarding the Project based on a list of contacts provided by the Native American Heritage Commission (NAHC). The City of Fresno mailed notices of the proposed Project to each of these tribes on July 1, 2020, which included the required 90-day time period for tribes to request consultation. This list includes tribes that requested notification pursuant to Assembly Bill 52 (AB 52) which requires a 30-day time period for tribes to request consultation. The consultation period ended on September 29, 2020 for the SB 18 requirement and on July 31, 2020 for the AB 52 requirement. To date, no tribal group has responded to the City's notices for this Project.

Please note: As detailed by Executive Order N-54-20, signed April 22, 2020, deadlines for filing, noticing, and posting of CEQA documents with county clerk offices have been suspended for 60 days. Additionally, the Executive Order suspends for 60 days certain tribal consultation timeframes required by AB 52.

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

| | |
|---|---|
| ___ | I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. |
| _x_ | 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 (EIR) is required. |
| ___ | I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An EIR 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. |

Jose Valenzuela, Planner — 2-10-2021
Date

EVALUATION OF ENVIRONMENTAL IMPACTS

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

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

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

4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (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 (CEQA Guidelines, 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 information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

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

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

9. The explanation of each issue should identify:

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

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

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

**DISCUSSION**

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

The site is located within an area that has several different existing land uses. Within the vicinity of the Project Site, on the northside of E. Jensen Avenue, the primary land use is single-family residential, a mobile home park and commercial uses, including a gas station. The properties on the south side of E. Jensen Avenue is not within the City of Fresno city limits, however, it consists of industrial uses. Parcels directly adjacent to the Project Site have been developed, while the Project Site is primarily vacant with an abandoned storm drain basin located at the northwest of the Project Site. The area adjacent to the north and east is a single-family subdivision. Properties to the south are all industrial uses located within in Fresno County. Properties to the west consist of a single-family subdivision, commercial uses including a gas station, and a mobile home park. The existing topography of the Project Site is nearly flat, with elevations ranging from approximately 296 to 297 feet above mean sea level (asml).

A scenic vista is a viewpoint that provides a distant view of highly valued natural or man-made landscape features for the benefit of the general public. Typical scenic vistas are locations where views of rivers, hillsides, and open space areas can be obtained as well as locations where valued urban landscape features can be viewed in the distance.

The Fresno General Plan MEIR provides and recognizes that the City has not identified or designated scenic vistas within its General Plan. Although no scenic vista has been designated, it is acknowledged that scenic vistas within the Planning Area could provide distant views of natural landscape features such as the San Joaquin River along the northern boundary of the Planning Area and the foothills of the Sierra Nevada Mountain Range. The River bluffs provide distant views of the San Joaquin River as well as areas north of the River. However, the majority of these views are from private properties. There are limited views of the San Joaquin River from Weber Avenue, Milburn Avenue, McCampbell Drive, Valentine Avenue, Palm Avenue, State Route 41, Friant Road, and Woodward Park. There are various locations throughout the eastern portion of the Planning Area that provide views of the Sierra Nevada foothills that are located northeast and east of the Planning Area. These distant views of the Sierra Nevada foothills are impeded many days during the year by the poor air quality in the Fresno region. Distant views of man-made landscape features include the Downtown Fresno buildings that provide a unique skyline. Given the site's distance from the San Joaquin River (i.e., approximately 10 miles northwest of the site), the proposed Project will not interfere with public views of the San Joaquin River environs. Furthermore, as there are no designated public or scenic vistas on or adjacent to the Project Site, there is no potential for adverse effect on a scenic vista. As such, impacts to scenic vistas would be *less than significant*.

Furthermore, the Fresno General Plan MEIR recognizes and acknowledges that poor air quality reduces existing views within the City of Fresno sphere of influence as a whole, and therefore finds that a *less than significant impact* will result to views of highly valued features such as the Sierra Nevada foothills from future development on and in the vicinity of the Project Site.

In regard to the above described aesthetic impact evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such aesthetic impact evaluation.

In conclusion, the Project will result in less than significant impacts concerning the above described aesthetics impact analysis criteria.

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

Scenic resources include landscapes and features that are visually or aesthetically pleasing. They contribute positively to a distinct community or region. These resources produce a visual benefit upon communities. The scenic resources within the Planning Area include landscaped open spaces, such as parks and golf courses. Additional scenic resources within the Planning Area include areas along the San Joaquin River due to the topographic variation in the relatively flat San Joaquin Valley. The River bluffs provide a unique geological feature in the San Joaquin Valley. Historic structures in Downtown Fresno buildings also represent scenic resources because they provide a unique skyline. Although superseded by the Fresno General Plan (§15-104-B-4.b. of the FMC), the Roosevelt Community Plan has not established scenic vistas or vista points within its plan area. The purpose of the vista points was to provide limited bluff access to non-area residents and to offer panoramic views of the river bluffs and river bottom. Therefore, the Project would have *no impact* associated with substantial damage to scenic resources, including, but not limited to, trees, rock out-croppings, and historic buildings within a state scenic highway.

In conclusion, the Project will result in no impact concerning the above described aesthetics impact analysis criteria.

**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?**

The Project will not damage nor will it degrade the visual character or quality of the Project Site and its surroundings, given that the Project Site is primarily vacant, in an area that is primarily developed with residential and industrial uses. Furthermore, the development of the Project will adhere to design and architectural standards codified within the City of Fresno Municipal Code (FMC) As such, impacts to the visual character or quality of the site would be *less than significant* due to the development improving the existing character of the site and the surrounding properties being of a similar use.

In conclusion, the Project will result in a less than significant impact concerning the above described aesthetics impact analysis criteria.

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

Future development of the site will create a new source of substantial light or glare within the area. The Project Site is within an area where development has already occurred with residential uses, which already affect day and nighttime views in the Project Site to a certain degree. The Project would be subject to the applicable mitigation measures pertaining to light and glare included in the Master Environmental Impact Report (MEIR) SCH No. 2012111015 (AES-1, 2, and 3). Furthermore, through the entitlement process, staff will ensure that lights are located in areas that will minimize light sources to the neighboring properties in accordance with the mitigation measures of the MEIR. With implementation of the applicable mitigation measures pertaining to light and glare included in MEIR, this impact would be *less than significant with mitigation incorporated*.

In regard to the above described aesthetic impact evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such aesthetic impact evaluation.

In conclusion, with MEIR mitigation incorporated, the Project will result in a less than significant impact concerning the above described air quality impact analysis criteria.

*Mitigation Measures identified in the MEIR*

**AES-1:** Lighting systems for street and parking areas shall include shields to direct light to the roadway surfaces and parking areas. Vertical shields on the light fixtures shall also be used to direct light away from adjacent light sensitive land uses such as residences.

**AES-2:** Lighting systems for public facilities such as active play areas shall provide adequate illumination for the activity; however, low intensity light fixtures and shields shall be used to minimize spillover light onto adjacent properties.

**AES-3:** Lighting systems for non-residential uses, not including public facilities, shall provide shields on the light fixtures and orient the lighting system away from adjacent properties. Low intensity light fixtures shall also be used if excessive spillover light onto adjacent properties will occur.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **II. AGRICULTURE AND FORESTRY RESOURCES –** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project: | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farm-land), as shown on the maps prepared pursuant to the Farmland Mapping and Monito-ring Program of the California Resources Agency, to non-agricultural use? | | | | X |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | | | | X |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | | | | X |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | | | | X |

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | | | | X |

**DISCUSSION**

**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?**

Based upon the State of California Department of Conservation California Important Farmland Finder, the Project Site and all surrounding parcels are designated as "Urban and Built Up." As such, the Project will not result in conversion of Important Farmland.

As mentioned previously, the Project Site is primarily vacant with the exception of a storm drain basin in the northwest portion of the parcel and is not currently utilized for agricultural purposes.

The Fresno General Plan MEIR analyzed "project-specific" impacts associated with future development within the Planning Area (Sphere of Influence) as well as the cumulative impacts factored from future development in areas outside of the Planning Area. The MEIR identifies locations within the Planning Area that have been designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance through the Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation. The analysis of impacts contained within the MEIR acknowledges that Fresno General Plan implementation anticipates all of the FMMP-designated farmland within the Planning Area being converted to uses other than agriculture. Furthermore, the MEIR acknowledges that the anticipated conversion is a significant impact on agricultural resources.

To reduce potential project-specific and cumulative impacts on agricultural uses, the General Plan incorporates objectives and policies, which include but are not limited to the following:

G-5 Objective: While recognizing that the County of Fresno retains the primary responsibility for agricultural land use policies and the protection and advancement of farming operations, the City of Fresno will support efforts to preserve agricultural land outside of the area planned for urbanization and outside of the City's public service delivery capacity by being responsible in its land use plans, public service delivery plans, and development policies.

G-5-b. Policy: Plan for the location and intensity of urban development in a manner that efficiently utilizes land area located within the planned urban boundary, including the North and Southeast Growth Areas, while promoting compatibility with agricultural uses located outside of the planned urban area.

G-5-f. Policy: Oppose lot splits and development proposals in unincorporated areas within and outside the City General Plan boundary when these proposals would do any of the following:

- Make it difficult or infeasible to implement the general plan; or,
- Contribute to the premature conversion of agricultural, open space, or grazing lands; or constitute a detriment to the management of resources and/or facilities important to the metropolitan area (such as air quality, water quantity and quality, traffic circulation, and riparian habitat).

RC-9-c. Policy: In coordination with regional partners or independently, establish a Farmland Preservation Program. When Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is converted to urban uses outside City limits, this program would require that the developer of such a project mitigate the loss of such farmland consistent with the requirements of CEQA. The Farmland Preservation Program shall provide several mitigation options that may include, but are not limited to the following: Restrictive Covenants or Deeds, In Lieu Fees, Mitigation Banks, Fee Title Acquisition, Conservation Easements, Land Use Regulation, or any other mitigation method that is in compliance with the requirements of CEQA. The Farmland Preservation Program may be modeled after some or all of the programs described by the California Council of Land Trusts.

However, the MEIR recognizes that despite implementation of the objectives and policies of the Fresno General Plan, project and cumulative impacts on agricultural resources will remain significant; and, that no feasible measures in addition to the objectives and policies of the Fresno General Plan are available.

In 2014, through passage of Council Resolution No. 2014-225, the City of Fresno adopted Findings of Fact related to Significant and Unavoidable Effects as well as Statements of Overriding Considerations in order to certify the MEIR for purposes of adoption of the Fresno General Plan. Section 15093 of the California Environmental Quality Act requires the lead agency to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve the project.

The adopted Statements of Overriding Considerations for the MEIR addressed Findings of Significant Unavoidable Impacts within the categories/areas of Agricultural Resources; citing specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers as project goals, each and all of which were deemed and considered by the Fresno City Council to be benefits, which outweighed the unavoidable adverse environmental effects attributed to development occurring within the City of Fresno Sphere of Influence (SOI), consistent with the land uses, densities, and intensities set forth in the Fresno General Plan.

The Project Site is and continues to be further encompassed with an urban development. The Project Site is a logical expansion for purposes of orderly development. Furthermore, the Department of Conservation's Farmland Monitoring and Mitigation Program refers to this site as Urban and Built-Up land. Given these circumstances, the proposed Project is consistent with the goals, objective and policies of the Fresno General Plan as referenced herein above; and, will *not result* in the premature conversion of agricultural lands or constitute a detriment to the management of agricultural resources and/or facilities important to the metropolitan area and the proposed Project will have no impact.

In regard to the above described agriculture and forestry resources impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in no impacts concerning the above described agriculture and forestry resources impact analysis criteria.

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

The Project Site is not subject to a Williamson Act agricultural land conservation contract. Therefore, the proposed Project on the subject site will not affect existing agriculturally zoned or Williamson Act contract parcels. Therefore, the proposed Project will *not have an impact* on Williamson Act contracts or forestland.

In conclusion, the Project will result in no impacts concerning the above described agriculture and forestry resources impact analysis criteria.

**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))?**

The Project Site is not considered forest land timberland. Therefore, the proposed Project will *not conflict* with any forest land or Timberland Production or result in any loss of forest land.

In conclusion, the Project will result in no impacts concerning the above described agriculture and forestry resources impact analysis criteria.

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

The Project Site is not considered forest land and is located within the urban bounds of the City of Fresno and is surrounded by development. Therefore, the proposed Project will *not result* in the loss of any forest land or result in the conversion of forest land to non-forest uses.

In conclusion, the Project will result in no impacts concerning the above described agriculture and forestry resources impact analysis criteria.

**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?**

The Project Site is not within proximity of agricultural uses or farmland. The implementation of the Project would not result in other changes in the existing environment that would impact agricultural land outside of the Project Site or Planning Area. Therefore, the Project would result in *no impact* on farmland or forest land involving other changes in the existing environment.

In conclusion, the Project will result in no impacts concerning the above described agriculture and forestry resources impact analysis criteria.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **III. AIR QUALITY** – Where available, the significance criteria established by the applicable air quality management 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 (*e.g.*, by having potential emissions of regulated criterion pollutants which exceed the San Joaquin Valley Air Pollution Control Districts (SJVAPCD) adopted thresholds for these pollutants)? | | X | | |
| b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | | | X | |
| c) Expose sensitive receptors to substantial pollutant concentrations? | | X | | |
| d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | | | X | |

<u>Setting</u>

An Air Quality & Greenhouse Gas Impact Assessment (Appendix A) has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts that may result from the proposed mixed use project, as detailed in the Project description, located on the northeast corner of S. Maple Avenue and E. Jensen Avenue in the City of

Fresno. The approximate Project Site is 12.18 acres. The Project proposes an integrated mixed-use development of a 12.18-acre site that will be subdivided into 12 parcels via a Parcel Map. The parcel proposed for subdividing is (APNs: 480-030-60).

The subdivided property development proposal will include the following uses.

- Parcel A (1.49 AC) – 4,000 square foot gasoline service station with 1,400 square foot of retail space (5,400 square feet total) and 3,400 square foot carwash. The gasoline station would have 8 pumps and the car wash would be a drive through facility.
- Parcel B (0.68 AC) – 2,866 square foot fast food restaurant with a drive through window.
- Parcel C (1.33 AC) – Single building with 7,500 square feet of retail space.
- Parcel D (0.97 AC) – 5,225 square foot high-turnover restaurant and 1,600 square foot coffee shop.
- Parcel E (0.94 AC) – 11,700 square foot medical building.
- Parcel F (0.87 AC) – 9,000 square foot retail building.
- Parcel G (0.78 AC) – 10,400 square foot bank/office building.
- Parcel H (1.23 AC) – 12,000 square foot retail building (portion).
- Parcel I (0.36 AC) – 3,000 square foot office building (portion).
- Parcel J (0.39 AC) – 5,000 square foot retail building.
- Parcel K (0.28 AC) – 4,000 square foot day care.
- Parcel L (2.86 AC) – 170,000 square foot multi-family building with 150 units.

The Project proposes to amend the General Plan land use designations of the Project Site to Light Industrial (±2.2 acres), Community Commercial (±6.5 acres), and Residential - High Density (±3.4acres) and corresponding Rezone in order to maintain consistency with the amended General Plan land use designations. In addition to the reconfiguration of zones to match the proposed General Plan Amendment. It should be noted that the Rezone will also change the existing RM-2 zone to the RM-3 zone in order to maintain consistency with the prescribed General Plan Amendment and densities of the Project. Approval of the General Plan Amendment and Rezone would ensure that the zoning designation is consistent with the General Plan designations for the Project Site.

The City of Fresno is located in one of the most polluted air basins in the country according to 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 Fresno 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.

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 3-1 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 3-1**
**Project Construction Emissions (tons/year)**

| Summary Report | CO | $NO_x$ | ROG | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ | $CO2_e$ |
|---|---|---|---|---|---|---|---|
| Project Site Construction Emissions Per Year | 4.09 | 4.69 | 2.43 | 0.01 | 0.64 | 0.36 | 759.20 |
| 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 Emission Model

Long-Term Emissions

Long-Term emissions from the Project are generated by mobile source (vehicle) emissions from the Project Site and area sources such as water heaters and lawn maintenance equipment.

1. Localized Mobile Source Emissions – Ozone/Particulate Matter

Operational emissions associated with the Project are shown in Table 3-2. Results indicate that the annual operational emissions from the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants with the exception of emissions related to NOx. Operational emissions for the Project exceed the SJVAPCD's NOx threshold by 14.64 tons per year. A vast majority of the NOx Emissions are generated by mobile sources.

**Table 3-2**
**Project Operational Emissions (tons/year)**

| Summary Report | CO | $NO_x$ | ROG | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ | $CO2_e$ |
|---|---|---|---|---|---|---|---|
| Project Operational Emission Per Year | 15.62 | 24.64 | 3.14 | 0.08 | 3.46 | 1.00 | 8711.84 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SJVAPCD Level of Significance | 100 | 10 | 10 | 27 | 15 | 15 | None |
| Does the Project Exceed Standard? | No | Yes | No | No | No | No | No |

Source: CalEEMod Emission Model

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 proposed Project will not generate odorous emissions given the nature or characteristics of the development 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. Fiore Di Pasta is a Food Processing Facility located to the east, within 1 mile of the proposed Project. Food Processing Facilities is a food service establishment that is a commercial operation that processes food for human consumption and may produce odors. Fiore Di Pasta manufactures quality pasta products and produces high quality, custom fresh/frozen pastas, sauces, entrees, and organic food products. Given the presence of the residential uses located ±185 feet directly north of the Fiore Di Pasta site, it is not anticipated that the site would generate odorous emissions that would impact the proposed Project.

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.

**DISCUSSION**

**a) 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. Fresno COG 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 Fresno's General Plan, which was adopted December 18, 2014. While the Project will undergo a GPA with the City of Fresno to modify approximately 5.9 acres of Light Industrial, 2.2 acres of Community Commercial and 3.5 acres of Residential Urban Neighborhood to approximately 2.2 acres of Light Industrial, 6.5 acres of Community Commercial and 3.4 acres of Residential – High Density, it should be noted that the proposed land uses on the Project Site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. As depicted in the Project description, the Project offers a variety of compatible uses. Of the uses proposed on the Project Site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (Appendix D) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project Site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue. As mentioned in the in Table 3-2, NOx is exceeding the establish threshold on the SJVAPCD, however, with the mitigation measures described in Impact Assessment c), the Project will result in with a less than significant impact with mitigation incorporated.

In conclusion, with adoption of the AIR-1 mitigation measure described below, the Project will result in less than significant impacts concerning the above described air quality impact analysis criteria.

**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?**

Fresno County is nonattainment for Ozone (1 hour and 8 hour) and PM10 (State standards) and PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plan, 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 will not conflict with or obstruct implementation of any air quality plans. Therefore, the Project will not conflict with or obstruct implementation of the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Results of the CALINE analysis (Appendix A) show that the intersections of Maple Avenue and North Avenue are not expected to generate CO concentrations that would exceed the Federal or State 1-hour and 8-hour standards. The Project will not 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. Moreover, the Project will not result in project-specific or site-specific significant adverse impacts from the net increase of any criteria pollutant within the Project study area.

In conclusion, the Project will result in a less than significant impact concerning the above described air quality impact analysis criteria.

**c) 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 TAC's 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 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 the CARB handbook. 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 or common sources shown in CARB handbook. 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.

<u>Short-Term Impacts</u>
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 Appendix A. Therefore, construction emissions associated with the Project are considered less than significant.

<u>Long-Term Impacts</u>
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. Appendix A summarizes the Project's operational impacts by pollutant. Results indicate that the annual operational emissions from the Project will be less than the applicable SJVAPCD emission thresholds for criteria pollutants with the exception of emissions related to NOx. Operational emissions for the Project exceed the SJVAPCD's NOx threshold by 14.64 tons per year. A vast majority of the NOx Emissions are generated by mobile sources.

In conclusion, with adoption of the AIR-1 and AIR-2 mitigation measures described below, the Project will result in less than significant impacts concerning the above described air quality impact analysis criteria.

**d) 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 proposed Project will not generate odorous emissions given the nature or characteristics of the development 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 Appendix A, along with a reasonable distance from the source within which, the degree of odors could possibly be significant. Fiore Di Pasta is located to the east, within one mile of the proposed Project. Fiore Di Pasta manufactures quality pasta products and produces high quality, custom fresh/frozen pastas, sauces, entrees, and organic food products. Given the presence of the residential uses located directly north of the Fiore Di Pasta site, it is not anticipated that the site would generate odorous emissions that would impact the proposed Project.

In conclusion, the Project will result in a less than significant impact concerning the above described air quality impact analysis criteria.

*Additional Mitigation Measures (Project Specific)*

AIR-1**: Comply with SJVAPCD's Indirect Source Review Rule (Rule 9510)** Operation of the proposed project shall comply with SJVAPCD's ISR rule (Rule 9510). Measures that may be implemented to reduce NOx operational emission may include, but are not limited to, the following:

- Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.
- Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50% tree coverage within 10 years of construction using low ROG emitting, low maintenance native drought-resistant trees.
- Plant drought tolerant native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer.
- Utilize high-efficiency gas or solar water heaters, beyond that required by current building codes.
- Install low water consumption landscape. Use native plants that do not require watering after they are well established or minimal watering during the summer months and are low ROG emitting.
- Install parking spaces for alternatively fueled vehicles, beyond that required by current building codes.
- Use low-VOC content paints during construction and long-term facility maintenance. To the extent possible construction materials that are prefinished or that do not require the application of architectural coatings should be used.
- Install energy-saving systems in rooms that reduce energy usage associated with HVAC systems and appliances when rooms are not occupied, except where such systems would pose a safety or health concern.
- Provide a pedestrian access network that internally links all uses and connects all existing or planned external streets and pedestrian facilities contiguous with the project site.
- Provide on-site bicycle parking beyond those required by current building standards and related facilities to support long-term use (lockers, or a locked room with standard racks and access limited to bicyclists only).
- Implement traffic calming improvements as appropriate (e.g., marked crosswalks, countdown signal timers, curb extensions, speed tables, raised crosswalks, median islands, minicircles, tight corner radii, etc.)

AIR-2**: Implement a Voluntary Emissions Reduction Agreement (VERA) with the SJVAPCD to Reduce Operational Emissions of ROG, NOX, and PM10** A VERA shall be entered into with the SJVAPCD to reduce operational emissions NOx to less than 10 tons/year. Operational emissions of NOx shall be reduced in excess of the reductions required per compliance with SJVAPCD's ISR Rule (Refer to Mitigation Measure AQ-1). Emission reductions may be achieved by use of newer, low-emission equipment, implementation of on-site or off-site mitigation, and/or the funding of offsite mitigation, through participation in the SJVAPCD's offsite mitigation program. The VERA shall be reviewed and approved by the SJVAPCD prior to issuance of construction/grading permits by the City of Fresno. Documentation confirming compliance with the VERA shall be submitted to the City of Fresno Planning Department prior to issuance of final discretionary approval. Development and implementation of the VERA shall be fully funded by the Project. With approval by SJVAPCD, the VERA may also be used to demonstrate compliance with emission reductions required by SJVAPCD’s ISR Rule (9510).

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **IV. BIOLOGICAL RESOURCES** – Would the project: | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | | X | | |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | | | | X |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | | | | X |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | | | X | |

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | | | X | |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | | | | X |

**DISCUSSION**

The analysis presented in this section is based on a reconnaissance level survey conducted by qualified biologists on February 10, 2020, as well as a review of available databases and other information. A copy of the Reconnaissance Survey Form is included in the document as Appendix B.

**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 the U.S. Fish and Wildlife Service?**

A reconnaissance level survey and database review were completed by QK biologists to characterize the existing conditions on-site and determine the potential for special- status species and other sensitive biological resources to occur on-site and be impacted by the Project. Wildlife observations included eastern fox squirrel (*Sciurus niger*), mourning dove (*Zenaida macroura*), California scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), domestic dog (*Canis familiaris*), and domestic cat (*Felis catus*).

With many suitable nesting or perching, trees and utility poles in and around the subject site, migratory birds may forage and/or nest on-site. A small inactive passerine bird nest was located in a tree near in the northeast corner of the subject site, approximately 260 feet east of the drainage basin and a large stick nest was located in a Eucalyptus tree (*Eucalyptus* sp.) approximately 140 feet west of South Sierra Vista Avenue on the eastern site boundary. The nest appeared inactive though a nearby adult American crow exhibited territorial behavior that could indicate current or future nesting site fidelity.

The Swainson's hawk requires a supply of small mammals, such as young ground squirrels, as prey for nestlings and elevated perches for hunting. Therefore, it favors open and semi-open country over smaller vacant lands in urban settings. On-site vegetation could provide cover for prey and there are large trees to provide suitable nesting on-site. Swainson's hawks require a large amount of foraging habitat and the subject site is slightly larger than 12 acres in size. In addition, subject site is located in the vicinity of residential and commercial development, because of these factors, this species is not likely to inhabit the subject site.

Avoidance and minimization measures such as a pre-construction clearance survey focusing on special status species, nesting birds and raptors when implemented, will reduce Project impacts to biological resources to a less than significant level.

The use of ruderal/non-native grassland habitat by native terrestrial vertebrates including birds and small mammals is considered common in urbanized and developed areas. This is an attractant to both foraging raptors, such as hawks and owls, and mammalian predators. Various bat species may also roost in branches or under the bark of medium to large trees, similar to the trees on the subject site, or forage over portions of the subject site for flying insects.

The federally endangered and California-threatened San Joaquin kit fox once occurred throughout much of the San Joaquin Valley, but this species favored areas of alkali sink scrub and alkali grassland throughout the San Joaquin Valley and Tulare Basin, as well as areas further west. The low foothills of the Sierra Nevada at the eastern edge of the San Joaquin Valley are considered at the edge of their natural range. It is not uncommon to find San Joaquin kit fox in developed and cultivated areas. No San Joaquin kit fox burrows or sign were observed during the survey though the site contains low quality foraging habitat for this species.

A California Species of Special Concern, the western burrowing owl is a small, terrestrial owl that inhabits relatively flat dry open prairies and grasslands where tree and shrub canopies provide minimal cover. Since the western burrowing owl typically does not excavate their own burrows, they are found in close association with California ground squirrels, using the abandoned burrows of these squirrels for shelter, roosting, and nesting. Burrowing owls are colonially nesting raptors, and colony size is indicative of habitat quality. It is not uncommon to find burrowing owls in developed and cultivated areas. The site does contain low quality foraging habitat for this species, however due to the limited number of existing suitable burrows, the subject site consists of low-quality nesting habitat.

The subject site has been highly disturbed by mowing and plowing maintenance activities, anthropogenic activities, and is dominated by non-native grasses and other ruderal vegetation. The subject site is classified as annual grassland defined by the California Department of Fish and Wildlife's California Wildlife Habitat Relationships System, as open grassland comprised of introduced annual grasses such as brome (*Bromus* sp.) and wild oat species (*Avena* sp.) along with common forbs such as redstem filaree (*Erodium* *cicutarium*), turkey mullein (*Croton setigerus*), popcorn flower (*Plagiobothrys* sp.) and clover species (*Trifolium* sp.).

No sensitive natural communities are present. Three special-status species, the San Joaquin kit fox (*Vulpes macrotis mutica*), western burrowing owl (*Athene cunicularia*), and Swainson's hawk (*Buteo swainsoni*) were determined to have potential to occur on-site. Direct impacts could include loss of foraging habitat and injury or mortality of individual special-status species, and or young during the breeding season. Nesting birds protected by the California Fish and Game Code and the Migratory Bird Treaty Act, as well as roosting bat maternity colonies protected by the California Environmental Quality Act, also have the potential to occur on-site. Avoidance and minimization measures are prescribed including pre-activity surveys, raptor and nesting bird surveys, species focused surveys, and western burrowing owl exclusion plan development and implementation.

Recommended avoidance and minimization measures that, when implemented, will reduce Project impacts to biological resources to a *less than significant* level. Furthermore, compliance with the biological mitigation measures such as a pre-construction biological survey prior to ground disturbance to determine if the Project Site supports any special-status species as required in the MEIR for the Fresno General Plan would also reduce impacts to biological species. If a special-status species is determined to occupy any portion of a site, mitigation measures would be incorporated into the construction phase of a Project to avoid direct or incidental take of a listed species to the greatest extent feasible. These mitigation measures are included in the attached Project Specific Mitigation Monitoring Checklist dated March 2020 and listed at the end of the section.

In regard to the above described biological resources impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, with MEIR mitigation measures incorporated and the adoption of mitigation measures BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, and BIO-11 described below, the Project will result in a less than significant impact concerning the above described biological resources impact analysis criteria.

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

As described in Appendix C, natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, home to special status plant and animal species, of importance in maintaining water quality or sustaining flows, etc. Examples of natural communities of special concern in the San Joaquin Valley could include open, ruderal/non-native grassland habitat, which is infrequently disturbed, vernal pools and various types of riparian forest. No natural communities of special concern were identified on the subject site.

As stated in Appendix C, riparian habitats or any other sensitive natural communities identified by the California Department of Fish and Game or the US Fish and Wildlife Service are not located on the Project Site. There will be *no impact*.

In conclusion, the Project will result in no impacts concerning the above described biological resource impact analysis criteria.

**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 US Fish and Wildlife Service National Wetlands Inventory indicated that a freshwater pond (PUBFx) was potentially present in the northwest corner of the site. An 0.11-acre Drainage Basin was present in this corner of the subject site. Additionally, a 0.006-acre mesic area was present near the southeastern corner of the subject site. The basin, which appears to be maintained, was dry during the survey and contained the desiccated remains of hydrophytic and upland vegetation species including cattails (*Typha domingensis*) and Russian thistle (*Salsola tragus*). The mesic area was also dry at the time of the survey and cattails were also present, covering 100% percent of the feature. The mesic area is adjacent to paved surfaces and private residences, as well as any utility infrastructure buried near the paved roadway. Although both areas contained hydrophytic vegetation, the mesic area did not exhibit characteristics of a wetland and the basin is artificial and managed as a groundwater recharge area. Development of either of these areas would not require State or federal permits.

Additionally, no state or federally protected wetlands are located on the subject site. Therefore, there would be *no impacts* to sensitive wetland communities.

In conclusion, the Project will result in no impacts concerning the above described biological resource impact analysis criteria.

**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?**

Wildlife movement corridors are areas where wildlife species regularly and predictably move during foraging, or during dispersal or migration. Movement corridors in California are typically associated with valleys, rivers, and creeks supporting riparian vegetation, and ridgelines. Such geographic and topographic features are absent from the subject site. Additionally, due to the presence of developed lands and urban uses surrounding the Project Site, there is limited potential for Project related activities to have an impact on the movement of wildlife species or established wildlife corridors.

According to Appendix C, the Project is not located within an identified wildlife movement corridor and there are no features on-site that would lend themselves specifically to wildlife movement. The site is surrounded by residential and commercial developments that are not conducive to wildlife movement. The impact will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described biological resources impact analysis criteria.

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

The City of Fresno Ordinance Section 15-2308 permits the removal of trees, including trees with 12-inch diameter trunks, in conjunction with a development application. The Open Space Element of the General Plan directs the City to ensure landmark trees are preserved and the Scenic Highways Element requires City road improvement projects on scenic roads to preserve mature trees. In addition, the Project will comply with the policies of the Municipal Code, such as FMC Section 13-305 – Tree Preservation. This particular policy utilizes techniques, methods, and procedures are required to preserve, whenever feasible, all trees in the city including, but not limited, to trees which are affecting surface improvements or underground facilities or which are diseased, or located where construction is being considered or will occur. Required compliance with the ordinances will ensure that the impact will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described biological resources impact analysis criteria.

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

The site 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. The subject site nor the immediate vicinity occur in any other habitat conservation plans or natural community conservation plans pertaining to natural resources within the region. There will be *no impact*.

In conclusion, the Project will result in no impacts concerning the above described biological resources impact analysis criteria.

<u>*Mitigation Measures identified in MEIR*</u>

**BIO-1** of the MEIR SCH No. 2012111015 for the Fresno General Plan requires the construction of a proposed project to avoid, where possible, vegetation communities that provide suitable habitat for a special-status species known to occur within the Planning Area. If construction within potentially suitable habitat must occur, the presence/absence of any special-status plant or wildlife species must be determined prior to construction, to determine if the habitat supports any special-status species. If special-status species are determined to occupy any portion of a subject site, avoidance and minimization measures shall be incorporated into the construction phase of a project to avoid direct or incidental take of a listed species to the greatest extent feasible.

**BIO-2** of MEIR SCH No. 2012111015 for the Fresno General Plan requires that any direct or incidental take of any state or federally listed species should be avoided to the greatest extent feasible. If the construction of a proposed project will result in the direct or incidental take of a listed species, consultation with the resources agencies and/or additional permitting may be required. Agency consultation through the California Department of Fish and Wildlife (CDFW) 2081 and U.S. Fish and Wildlife Service (USFWS) Section 7 or Section 10 permitting processes must take place prior to any action that may result in the direct or incidental take of a listed species. Specific mitigation measures for direct or incidental impacts to a listed species will be determined through agency consultation.

**BIO-3**[1] of MEIR SCH No. 2012111015 for the Fresno General Plan requires projects within the Planning Area to avoid, if possible, construction within the general nesting season of February 1 through August 15 for avian species protected under Fish and Game Code 3500 and the Migratory Bird Treaty Act (MBTA), if it is determined that suitable nesting habitat occurs on a subject site. If construction cannot avoid the nesting season, a pre-construction clearance survey must be conducted to determine if any nesting birds or nesting activity is observed on or within 500-feet of a subject site. If an active nest is observed during the survey, a biological monitor must be on-site to ensure that no proposed project activities would impact the active nest. Depending on the bird species, a buffer ranging in size from 250 feet to 4 miles, will be established around the active nest until the nestlings have fledged and the nest is no longer active. Project activities may continue in the vicinity of the nest only at the discretion of the biological monitor.

*Additional Mitigation Measures (Project Specific)*

**BIO-4:** Pre-activity Surveys for Special-Status Species. Prior to ground disturbing activities, a qualified wildlife biologist shall conduct a biological clearance survey no more than 30 calendar days prior to the onset of construction. The clearance survey shall include walking transects to identify presence of San Joaquin kit fox, American badger, Swainson's hawk, western burrowing owl, nesting birds and other special-status species or signs of, and sensitive natural communities. The pre-activity survey shall be walked by no greater than 30-foot transects for 100 percent coverage of the Project Site and the 250-foot buffer, where feasible. If no evidence of special-status species is

1 For the purpose of keeping the mitigation measures in proper chronology, this mitigation measure corresponds to BIO – 4 in the MEIR Mitigation Checklist.

detected, no further action is required but measure MM BIO-6 shall be implemented.

**BIO-5:** Avoidance of San Joaquin Kit Fox and American Badger Dens. If dens/burrows that could support the San Joaquin kit fox or American badger are discovered during the pre-activity surveys conducted under MM BIO-4, the avoidance buffers outlined below shall be established. No work would occur within these buffers unless the biologist approves and monitors the activity.

- Potential Den – 50 feet
- Atypical Den – 50 feet (includes pipes and other man-made structures)
- Known Den – 100 Feet
- Natal/Pupping Den – 500 feet

**BIO-6:** Avoidance and Minimization Measures for San Joaquin Kit Fox. 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* (USFWS 2011).

1. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers. 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 the construction or Project Site.
2. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas. Vehicle speeds shall not exceed 20 miles per hour (mph) within the Project Site.
3. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor shall cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks shall be installed in the trench. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four-inches or greater that are stored on the Project Site shall be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If at any time an entrapped or injured kit fox is discovered, work in the immediate area shall be temporarily halted and USFWS and CDFW shall be consulted.
4. 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 four inches or greater that are stored at a construction site for one or more overnight periods shall 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 shall not be moved until the USFWS and CDFW 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.

5. No pets, such as dogs or cats, shall be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
6. Use of anti-coagulant rodenticides and herbicides on the Project Site shall 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 shall 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 USFWS and CDFW. If rodent control must be conducted, zinc phosphide shall be used because of the proven lower risk to kit foxes.
7. 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 number shall be provided to the USFWS.
8. The Sacramento Fish and Wildlife Office of USFWS and CDFW 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 USFWS contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFW contact can be reached at (559) 243-4014 and R4CESA@wildlifeca.gov.
9. All sightings of the San Joaquin 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 shall also be provided to the Service at the address below.
10. Any project-related information required by the USFWS 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 W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600.

**BIO-7:** Pre-activity Surveys for Nesting Birds. If construction is planned outside the nesting period for raptors (other than the burrowing owl) and migratory birds (February 1 to August 31), no mitigation shall be required. If construction is planned during the nesting season for migratory birds and raptors, a pre-activity survey to identify active bird nests shall be conducted by a qualified biologist to evaluate the site and a 250-foot buffer for migratory birds and a 500-foot buffer for raptors. If nesting birds are identified during the survey, active raptor nests shall be avoided by 500 feet and all other migratory bird nests shall be avoided by 250 feet. Avoidance buffers may be reduced if a qualified on-site monitor determines that encroachment into the buffer area is not affecting nest building, the rearing of young, or otherwise affecting the breeding behaviors of the resident birds. Because nesting birds can establish new nests or produce a second or even third clutch at any time during the nesting season, nesting bird surveys shall be repeated every 30 days as construction activities are occurring throughout the nesting season.

No construction or earth-moving activity shall occur within a non-disturbance buffer until it is determined by a qualified biologist that the young have fledged (left the nest) and have attained sufficient flight skills to avoid Project construction areas. Once the migratory birds or raptors have completed nesting and young have fledged, disturbance buffers will no longer be needed and can be removed, and monitoring can cease.

**BIO-8:** Pre-activity Surveys for Swainson's Hawk Nests. If all Project activities are completed outside of the Swainson's hawk nesting season (February 15 through August 31), this mitigation measure shall need not be applied. If no Swainson's hawk nests are found, no further action is required.

If construction is planned during the nesting season, a preconstruction survey shall be conducted by a qualified biologist to evaluate the site and a 0.5-mile buffer around the site for active Swainson's hawk nests. If potential Swainson's hawk nests or nesting substrates occur within 0.5 mile of the Project Site, then those nests or substrates must be monitored for Swainson's hawk nesting activity on a routine and repeating basis throughout the breeding season, or until Swainson's hawks or other raptor species are verified to be using them. Monitoring shall be conducted according to the protocol outlined in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). The protocol recommends that ten visits be made to each nest or nesting site: one during January 1-March 20 to identify potential nest sites, three during March 20-April 5, three during April 5-April 20, and three during June 10-July 30. To meet the minimum level of protection for the species, surveys shall be completed for at least the two survey periods immediately prior to project-related ground disturbance activities. During the nesting period, active Swainson's hawk nests shall be avoided by 0.5 mile unless this avoidance buffer is reduced through consultation with the CDFW and/or USFWS. If an active Swainson's hawk nest is located within 500 feet of the Project or within the Project Site, the Project proponent shall contact CDFW for guidance.

**BIO-9:** 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 will complete an assessment of the potential for current construction activities to impact the nest. The assessment will 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 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 nest location, the sensitivity of the nesting Swainson's hawk to disturbances, and at the discretion of the qualified biologist.

**BIO-10:** Pre-activity Surveys for Western Burrowing Owl Burrows. A qualified biologist shall conduct a pre-activity survey on the Project Site and within 500 feet of its perimeter, where feasible, to identify the presence of the western burrowing owl. The survey shall be conducted between 14 and 30 days prior to the start of construction activities. If any western burrowing owl burrows are observed during the pre-activity survey, avoidance measures shall be consistent with those included in the CDFW staff report on western burrowing owl mitigation (CDFG 2012). If occupied western burrowing owl burrows are observed outside of the breeding season (September 1 through January 31) and within 250 feet of proposed construction activities, a passive relocation effort may be instituted in accordance with the guidelines established by the California Western Burrowing Owl Consortium (1993) and the California Department of Fish and Wildlife (2012). During the breeding season (February 1 through August 31), a 500-foot (minimum) buffer zone shall be maintained unless a qualified biologist verifies through non-invasive methods that either the birds have not begun egg laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

If western burrowing owl are found to occupy the Project Site and avoidance is not possible, burrow exclusion may be conducted by qualified biologists only during the non-breeding season, before breeding behavior is exhibited, and after the burrow is confirmed empty through non-invasive methods (surveillance). Replacement or occupied burrows shall consist of artificial burrows at a ratio of one burrow collapsed to one artificial burrow constructed (1:1). Ongoing surveillance of the Project Site during construction activities shall occur at a rate sufficient to detect western burrowing owl, if they return.

In addition, impacts to occupied western burrowing owl burrows shall be avoided in accordance with the following table unless a qualified biologist approved by CDFW verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

| Location | Time of Year | Level of Disturbance | | |
|---|---|---|---|---|
| | | Low | Med | High |
| Nesting sites | April 1-Aug 15 | 200 m | 500 m | 500 m |
| Nesting sites | Aug 16-Oct 15 | 200 m | 200 m | 500 m |
| Nesting sites | Oct 16-Mar 31 | 50 m | 100 m | 500 m |

**BIO-11:** Worker Environmental Awareness Training. Prior to ground disturbance activities, or within one week of being deployed at the Project Site for newly hired workers, all construction workers at the Project Site shall attend a Construction Worker Environmental Awareness Training and Education Program, developed and presented by a qualified biologist.

The Construction Worker Environmental Awareness Training and Education Program shall be presented by the biologist and shall include information on the life history of wildlife and plant species that may be encountered during construction activities, their legal protections, the definition of “take” under the Endangered Species Act, measures the Project operator is implementing to protect the species, reporting requirements, specific measures that each worker must employ to avoid take of the species, and penalties for violation of the Act. Identification and information regarding special-status or other sensitive species with the potential to occur on the Project Site shall also be provided to construction personnel. The program shall include:

- An acknowledgement form signed by each worker indicating that environmental training has been completed.

- A copy of the training transcript and/or training video/CD, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be maintain on site for the duration of construction activities.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **V. CULTURAL RESOURCES** – Would the project: | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | | X | | |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | | X | | |
| c) Disturb any human remains, including those interred outside of formal cemeteries? | | X | | |

**DISCUSSION**

**a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?**

A cultural resources technical memorandum (Appendix C) was prepared for the Project Site by QK in February 2020. The following discussion is based on the memorandum. A cultural resources records search (RS #20-071) was conducted at the Southern San Joaquin Valley Information Center, California State University- Bakersfield. The records search covered an area within one half mile of the Project Site and included a review of the National Register of Historic Places (NRHP), California Registry of Historic Resources (CRHR), California Historical Landmarks, California State Historic Resources Inventory, and a review of cultural resource reports on file. The records search indicated that the Project Site has never been surveyed for Cultural Resources. Two cultural studies have been conducted within a half-mile radius of the Project Site. As a result of those studies, one cultural resource has been recorded, the historic Central Canal, which is approximately 1,500 feet west of the Project Site. The Project would not impact this historic resource as all work will be conducted within the boundaries of the Project Site. It is not known if any other resources exist on the property.

A Sacred Lands File request was also submitted to the Native American Heritage Commission. A response dated February 18, 2020 indicates negative results.

No other cultural surveys or resources have been recorded within a half mile of the Project. No cultural resources are known within the Project Site. No Native American sacred sites or cultural landscapes had been identified within or immediately adjacent to the study area.

There are no structures which exist within the Project Site that are listed in the National or Local Register of Historic Places. The Project is not within a designated historic district. There are no known archaeological resources that exist within the Project Site. The potential to encounter subsurface cultural resources is minimal. Additionally, portions of the construction will take place within existing road rights-of-way and previously disturbed lands. However, during excavation activities, there is always the potential to discover historical resources. Ground disturbing activities such as grading and trenching have the potential to damage or destroy unidentified cultural resources with the Project Site. In order to reduce any potential impacts of the Project on cultural resources mitigation measures will be incorporated. For instance, if the event historical resources are found, construction will halt, and a qualified historical resources specialist will be contacted and will make recommendations to the City. Therefore, implementation of the Fresno General Plan MEIR Mitigation Measures will result in a *less than significant impact*.

In regard to the above described cultural resources impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, with MEIR mitigation incorporated, the Project will result in a less than significant impact concerning the above described cultural resources impact analysis criteria.

**b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?**

There are no known archaeological resources that exist within the Project Site. There is no evidence that cultural resources of any type (including historical, archaeological, or unique geologic features) exist on the Project Site. Nevertheless, there is some possibility that a buried site may exist in the area and be obscured by vegetation, fill, or other historic activities, leaving no surface evidence. Implementation of the Fresno General Plan MEIR Mitigation Measures will result in a *less than significant impact*.

In regard to the above described cultural resources impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, with MEIR mitigation incorporated, the Project will result in a less than significant impact concerning the above described cultural resources impact analysis criteria.

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

Previously undiscovered human remains could be disturbed during Project construction. Based on the results of cultural records search findings and the lack of historical or archaeological resources previously identified within a 0.5-mile radius of the proposed Project, the potential to encounter subsurface resources is minimal. Although cultural resources aren't anticipated onsite, like most Projects in the state, the possibility exists that these resources could be found during construction; therefore, mitigation would be required to reduce this impact to a *less than significant* level. Therefore, due to the ground disturbing activities that will occur as a result of the Project, the measures within the MEIR SCH No. 2012111015 for the Fresno General Plan, Mitigation Monitoring Checklist to address archaeological resources and human remains will be employed to guarantee that should archaeological and/or animal fossil material be encountered during Project excavations, then work shall stop immediately; and, that qualified professionals in the respective field are contacted and consulted in order to ensure that the activities of the proposed Project will not involve physical demolition, destruction, relocation, or alteration of historic, and archaeological resources.

In regard to the above described cultural resources impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, with MEIR mitigation incorporated, the Project will result in a less than significant impact concerning the above described biological resources impact analysis criteria.

*<u>Mitigation Measures identified in MEIR</u>*

**CUL-1:** If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines and the City's Historic Preservation Ordinance.

If the resources are determined to be unique historical resources as defined under Section 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these. Any historical artifacts recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-germ preservation to allow future scientific study.

**CUL-2:** Subsequent to a preliminary City review of the Project grading plans, if there is evidence that a Project will include excavation or construction activities within previously undisturbed soils, a field survey and literature search for prehistoric archaeological resources shall be conducted. The following procedures shall be followed.

If prehistoric resources are not found during either the field survey or literature search, excavation and/or construction activities can commence. In the event that buried prehistoric archaeological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with CEQA Guidelines Section 15064.5.

If the resources are determined to be unique prehistoric archaeological resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any prehistoric archaeological artifacts recovered as a result of mitigation shall be provided to a City approved institution or person who is capable of pro viding long term preservation to allow future scientific study.

If prehistoric resources are found during the field survey or literature review, the resources shall be inventoried using appropriate State record forms and submit the forms to the Southern San Joaquin Valley Information Center. The resources shall be evaluated for significance. If the resources are found to be significant, measures shall be identified by the qualified archaeologist. Similar to above, appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

In addition, appropriate mitigation for excavation and construction activities in the vicinity of the resources found during the field survey or literature review shall include an archaeological monitor. The monitoring period shall be determined by the qualified archaeologist. If additional prehistoric archaeological resources are found during excavation and/or construction activities, the procedure identified above for the discovery of unknown resources shall be followed.

**CUL-3[2]:** In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native

2 For the purpose of keeping the mitigation measures in proper chronology, this mitigation measure corresponds to CUL – 4 in the MEIR Mitigation Checklist.

American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains.

Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

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

**DISCUSSION**

**a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

Appendix G of the State CEQA Guidelines provides significance thresholds for the evaluation of a number of environmental impacts, but does not provide specific thresholds for the evaluation of impacts related to energy resources. Appendix F of the State CEQA Guidelines requires consideration of the potentially significant energy implications of a proposed Project. While Appendix F does not provide specific thresholds for energy use, it recommends consideration of the potential energy impact of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (Public Resources Code Section 21100, subdivision [b][3]).

The proposed Project includes the subdivision of the subject parcel into 11 parcels via a Tentative Parcel Map and a mixed-use development on the approximate 12.18-acre Project Site. The Project includes a range of apartment types and unit sizes, commercial uses and office uses. The Project would include open space areas as proposed a part of the multi-family building in accordance with City standards. The Project also includes on-site parking, landscaping, and infrastructure improvements.

The amount of energy used at the Project Site would directly correlate to the size of the proposed buildings, the energy consumption of associated appliances and technology, and outdoor lighting. Other major sources of proposed Project energy consumption include fuel used by vehicle trips generated during Project construction and operation, and fuel used by off-road construction vehicles during construction.

The following discussion provides calculated levels of energy use expected for the proposed Project, based on commonly used modelling software (i.e. CalEEMod and the California Air Resource Board's EMFAC2014). It should be noted that many of the assumptions provided by CalEEMod are conservative relative to the proposed Project. Therefore, this discussion provides a conservative estimate of proposed Project emissions.

Electricity and Natural Gas

Electricity and natural gas used by the proposed Project would be used primarily to power on-site buildings. Total annual electricity (kWh) and natural gas (kBTU) usage associated with the operation of the proposed Project are shown in Table 6.1, below (as provided by CalEEMod).

**Table 6-1**
**Project Operational Natural Gas and Electricity Usage**

| Emissions | Natural Gas (kBTU/year) | Electricity (kWh/year) |
|---|---|---|
| Project Total | 5,137,039 | 1,513,908 |

Source: CALEEMOD Emission Model

According to Appendix A: Calculation Details for CalEEMod, CalEEMod uses the California Commercial End Use Survey (CEUS) database to develop energy intensity value 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 6-1, the Project would use approximately 5,137,039 kBTU of natural gas per year and approximately 1,513,908 kWh of electricity per year.

On-Road Vehicles (Operation)

The proposed Project would generate vehicle trips during its operational phase. The Apartments Low Rise, Bank, Convenience Market With Gas Pumps, Day-Care Center, Fast Food Restaurant with Drive-Thru, General Office Building, Medical Office Building, and Regional Shopping Center are CalEEMod land uses and subtypes were used for the proposed Project. (See Appendix A for the CalEEMod assumptions and detailed energy calculations). The Institute of Transportation Engineers (ITE) Trip Generation Manual land uses description/code which corresponds to land uses and subtypes of CalEEMod. The Traffic Impact Assessment (TIA) and supplemental correction (Appendix D) prepared for the Project utilizes the Project's land use descriptions and ITE trip generation rates to determine how many vehicle trips would result from operation of the proposed Project. Using this ITE code and corresponding trip generation rate used in the TIA, the Project would generate approximately 10,406 daily vehicles trips. In order to calculate operational on-road vehicle energy usage and emissions, default trip lengths generated by CalEEMod were used, which are based on the Project location and urbanization level parameters selected within CalEEMod (i.e. “SJVAPCD” Project location and “Urban” setting, respectively).

Based on default factors provided by CalEEMod, the average daily trip will be approximately 6.8 miles. Using fleet mix data provide by CalEEMod, and Year 2020 gasoline and diesel MPG (miles per gallon) factors for individual vehicle classes as provided by Emissions Factors model (EMFAC2014) by the Air Resource Board, the derived weighted MPG factors for operational on-road vehicles of approximately 26.5 MPG for gasoline and 7.8 MPG for diesel vehicles. With this information, the conservative calculated estimate for the unmitigated proposed Project would generate vehicle trips that would use a total of approximately 180 gallons of gasoline or 53 gallons of diesel fuel per day, on average, or 65,700 annual gallons of gasoline and 19,345 annual gallons of diesel fuel per year. Furthermore, the fuel usage projections assume 100% of the Project’s trips are either gasoline fuel or diesel fuel.

On-Road Vehicles (Construction)

According the SJVAPCD Air Impact Assessment, the proposed Project would only generate on-site (off-road) construction trips and VMT 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 construction phase of the proposed Project. A non-exhaustive list of off-road constructive vehicles expected to be used during the construction phase of the proposed Project includes: cranes, forklifts, generator sets, tractors, excavators, and dozers. 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 85,428.12 gallons of diesel fuel for off-road construction vehicles (during the construction phase of the proposed Project ).

Other

Proposed Project landscape maintenance activities would generally require the use fossil fuel (i.e. gasoline) energy. For example, lawn mowers require the use of fuel for power. As an approximation, it is estimated that landscape care maintenance would require approximately two individuals one full day (8 hours) per week, or 832 hours per year. Assuming an average of approximately 0.5 gallons of gasoline used per person- hour, the proposed Project would require the use of approximately 416 gallons of gasoline per year to power landscape maintenance equipment. The energy used to power landscape maintenance equipment would not differ substantially from the energy required for landscape maintenance for similar project.

The proposed Project would use energy resources for the operation of Project buildings (electricity and natural gas), for on-road vehicle trips (e.g. gasoline and diesel fuel) generated by the proposed Project, and from off-road construction activities associated with the proposed Project (e.g. diesel fuel). Each of these activities would require the use of energy resources. The proposed Project would be responsible for conserving energy, to the extent feasible, and relies heavily on reducing per capita energy consumption to achieve this goal, including through State-wide and local measures, such as City of Fresno General Plan objectives, policies, and Municipal Code standards. Proposed reduction policies or standards include but not limited to:

Fresno General Plan:

- RC-8-b, reduce per capita residential electricity use to 1,800 kWh per year and non-residential electricity use to 2,700 kWh per year per capita by developing and implementing incentives, design and operation standards, promoting alternative energy sources, and cost-effective savings.
- RC-8-c, Consider providing an incentive program for new buildings that exceed California Energy Code requirements by 15 percent.
- RC-8-e, Promote compliance with State law mandating disclosure of a building's energy data and rating of the previous year to prospective buyers and lessees of the entire building or lenders financing the entire building.

Fresno Municipal Code:

- Section 11-731, All new HVAC and new lighting systems shall comply with the current energy conservation requirements contained in Part 6 of Title 24 of the California Code of Regulations (California Energy Code). An existing building with a dwelling unit or joint living and work quarter need not comply with the building envelope requirements of the California Energy Code, if the building envelope is not altered in anyway due to compliance with other code requirements.
- Section 11-108, The California Energy Code, 2019 Edition as promulgated by the California Building Standards Commission is hereby adopted by the City of Fresno and incorporated into the Code and shall be referred to as the Fresno Energy Code. One copy of the California Energy Code is on file and available for use by the public in the Planning and Development Department, Building and Safety Services Division.
- Section 11-101, The California Building Code (CBC) was last amended in 2019 and incorporates the adoption of the 2018 Edition of the of the International Building Code as amended with necessary California amendments and the 2018 International Building Code of the International Code Council, with the exception of Appendix B. to the CBC, along with the City's amendments to the CBC provided in Section 11-102, are referred to as the Fresno Building Code.
- In additional, energy-saving regulations, including the latest State Title 24 building energy efficiency standards ("part 6"), would be applicable to the

proposed Project further reducing any energy related impact that the Project may produce.

As a result, the proposed Project would not result in any significant adverse impacts related to Project energy requirements, energy use inefficiencies, and/or the energy intensiveness of materials by amount and fuel type for each stage of the Project including construction, operations, maintenance, and/or removal. PG&E, the electricity and natural gas provider to the site, maintains sufficient capacity to serve the proposed Project. The proposed Project would comply with all existing energy standards, and would not result in significant adverse impacts on energy resources. For these reasons, the proposed Project would not be expected to cause an inefficient, wasteful, or unnecessary use of energy resources nor cause a significant impact on any of the threshold as described by Appendix F of the *CEQA Guidelines*. The impact will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described energy resources impact analysis criteria.

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

As mentioned previously, the Project will utilize energy resources during the construction and operation of the Project. Energy consumption may include but is not limited to: electric and natural gas consumption during Project operation, pedestrian vehicle trips, construction vehicle trips, and various construction activities.

Applicable state and local plans for renewable energy and energy efficiency apply to the proposed Project, such as the Building Energy Efficiency Standards – Title 24, California Green Building Code, the City of Fresno General Plan, and the City of Fresno Development Code. The applicable energy related State codes have been incorporated as the City's development standards and are implemented on a site by site basis. In addition, each project proposed within the City will be reviewed prior to construction in order to confirm compliance with these applicable energy policies. Therefore, upon the issuance of building permits, the Project will be considered compliant with the City General Plan policies in addition to Title 24 and California Green Building Code Standards which are consistent with applicable state plans for over energy reduction.

Furthermore, according to the State of California Energy Action Plan II, the majority of annual energy savings is due to utility efficiency programs such as the Statewide Renewable Portfolio Standard (RPS), followed by building standards. PG&E is responsible for the mix of energy resources used to provide electricity for its customers, and it is in the process of implementing the State-wide Renewable Portfolio Standard (RPS) to increase the proportion of renewable energy (e.g. solar and wind) within its energy portfolio. PG&E is expected to achieve at least a 33% mix of renewable energy resources by 2020, and 50% by 2030.

Since, the Project Site is primarily vacant and will not utilize any existing structures currently on site, the future development will consist of new structures and will be required to implement all applicable development standards pursuant to the City of Fresno, Building Energy Efficiency Standards - Title 24, and California Green Building Code. In conclusion, energy impacts would be considered *less than significan*t.

In conclusion, the Project will result in a less than significant impact concerning the above described energy resources impact analysis criteria.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **VII. GEOLOGY AND SOILS** – Would the project: | | | | |
| a) Directly or Indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | X | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | | | X | |
| ii) Strong seismic ground shaking? | | | X | |
| iii) Seismic-related ground failure, including liquefaction? | | | X | |
| iv) Landslides? | | | X | |
| b) Result in substantial soil erosion or the loss of topsoil? | | | X | |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | | | X | |

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | | | X | |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | | | | X |
| f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | | X | | |

**DISCUSSION**

**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.**

Fresno has no known active earthquake faults and is not in any Alquist-Priolo Special Studies Zones. The immediate Fresno area has extremely low seismic activity levels, although shaking may be felt from earthquakes whose epicenters lie to the east, west, and south. Known major faults are over 50 miles distant and include the San Andreas Fault, Coalinga area blind thrust fault(s), and the Long Valley, Owens Valley, and White Wolf/Tehachapi fault systems. The most serious threat to Fresno from a major earthquake in the Eastern Sierra would be flooding that could be caused by damage to dams on the upper reaches of the San Joaquin River.

Fresno is classified by the State as being in a moderate seismic risk zone, Category “C” or “D,” depending on the soils underlying the specific location being categorized and that location’s proximity to the nearest known fault lines. All new structures are required to conform to current seismic protection standards in the California Building Code. Seismic upgrade/retrofit requirements are imposed on older structures by the City's Planning and Development Department as may be applicable to building modification and rehabilitation projects. With the implementation of the California Building Code and the development review process from the City, the impacts will be *less than significant*.

In conclusion, the project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

**ii. Strong seismic ground shaking?**

According to the Fresno County Multi-Hazard Mitigation Plan, the project site is located in an area of relatively low seismic activity. The proposed project does not include any activities or components which could feasibly cause strong seismic ground shaking, either directly or indirectly. There will be a *less than significant impact*.

In conclusion, the project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

**iii. Seismic-related ground failure, including liquefaction?**

No specific countywide assessment of liquefaction has been performed; however, the Fresno County Multi-Hazard Mitigation Plan identifies the risk of liquefaction within the county as low because the soil types are unsuitable for liquefaction. The area's low potential for seismic activity would further reduce the likelihood of liquefaction occurrence. Because the project site is within an area of low seismic activity, and the soils associated with the project site not suitable for liquefaction, impacts will be *less than significant*.

In conclusion, the project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

**iv. Landslides?**

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The project site is relatively flat with an approximate average asml of 296 feet; therefore, the potential for a landslide in the project site is essentially non-existent. *No adverse environmental effects* related to topography, soils or geology are expected as a result of this project.

In conclusion, the project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

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

Minimal soil will be removed from the project site during construction. Although these construction activities will result in a loss of topsoil, any soil erosion impacts would be temporary and subject to best management practices required by SWPPP. These best management practices are developed to prevent significant impacts related to erosion from construction. Because impacts related to erosion would be temporary and limited to construction and required best management practices would prevent significant impacts related to erosion, the impact will remain *less than significant*.

In conclusion, the project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?**

There are no geologic hazards or unstable soil conditions known to exist on the site. The existing topography is relatively flat with no apparent unique or significant landforms such as vernal pools. Development of the property requires compliance with grading and drainage standards of the City of Fresno. A civil engineer or soils engineer registered in this state shall complete a Soils Investigation and Evaluation Report, during the preparation of the improvement plans. The investigation will address the detail of the configuration, location, type of loading of the proposed structures, and drainage plan. The report shall provide detailed recommendation for foundations, drainage, and other items. The preparation of the Soils Investigation and Evaluation Report is an existing standard and will be completed as a part of the project. Impacts will be *less than significant*.

In conclusion, the project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

**d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?**

Expansive soils contain large amounts of clay, which absorb water and cause the soil to increase in volume. Conversely, the soils associated with the proposed project site are granular, well-draining and somewhat excessively drained, and therefore have a limited ability to absorb water or exhibit expansive behavior. The soils associated with the project are not suitable for expansion, therefore, implementation of the project will pose no direct or indirect risk to life or property caused by expansive soils and the impact will be *less than significant*.

In conclusion, the project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

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

The proposed project would not include the use of septic tanks or any other alternative wastewater disposal systems. The dwelling units will be required to tie into the existing sewer services. Therefore, there would be *no impact*.

In conclusion, the project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

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

As noted previously, there are no known paleontological resources that exist within the project site. Nevertheless, previously unknown paleontological resources could be disturbed during project construction. Therefore, due to the ground disturbing activities that will occur as a result of the project, the measures within the MEIR SCH No. 2012111015 for the Fresno General Plan, Mitigation Monitoring Checklist to address archaeological resources, paleontological resources, and human remains will be employed to guarantee that should archaeological and/or animal fossil material be encountered during project excavations, then work shall stop immediately; and, that qualified professionals in the respective field are contacted and consulted in order to ensure that the activities of the proposed project will not involve physical demolition, destruction, relocation, or alteration of historic, archaeological, or paleontological resources.

In regard to the above described geologic and soils impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, with MEIR mitigation incorporated, the Project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

*Mitigation Measures identified in MEIR*

**GEO-1[3]:** Subsequent to a preliminary City review of the project grading plans, if there is evidence that a project will include excavation or construction activities within previously undisturbed soils, a field survey and literature search for unique paleontological/geological resources shall be conducted. The following procedures shall be followed:

If unique paleontological/geological resources are not found during either the field survey or literature search, excavation and/or construction activities can commence. In the event that unique paleontological/geological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified paleontologist shall be consulted to determine whether the resource requires further study. The qualified paleontologist shall make recommendations to the City on the

3 Mitigation Measure GEO-1, was taken from the Fresno General Plan MEIR and originally called CUL-3 within the MEIR Mitigation Measure Monitoring Checklist. This changed was made because Appendix G of the CEQA Guidelines was revised and Paleontological Resources are now included under the Geology and Soils section.

measures that shall be implemented to protect the discovered resources, including but not limited to, excavation of the finds and evaluation of the finds. If the resources are determined to be significant, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any paleontological/geological resources recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-term preservation to allow future scientific study.

If unique paleontological/geological resources are found during the field survey or literature review, the resources shall be inventoried and evaluated for significance. If the resources are found to be significant, mitigation measures shall be identified by the qualified paleontologist. Similar to above, appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. In addition, appropriate mitigation for excavation and construction activities in the vicinity of the resources found during the field survey or literature review shall include a paleontological monitor. The monitoring period shall be determined by the qualified paleontologist. If additional paleontological/geological resources are found during excavation and/or construction activities, the procedure identified above for the discovery of unknown resources shall be followed.

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

Setting

CARB, in consultation with Metropolitan Planning Organizations (MPOs), has provided each affected region with reduction targets for Greenhouse Gases (GHGs) emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Fresno COG region, CARB set targets at five percent per capita decrease in 2020 and a ten percent per capita decrease in 2035 from a base year of 2005. Fresno COG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Fresno 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:

- 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;
- 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
- 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 City of Fresno GHG Plan, adopted December 2014, is a comprehensive municipal and community strategy to reduce GHG emissions within the City of Fresno and is consistent with the goals and strategies outlined in CARB regulations. As noted in the GHG Plan, the Project's compliance with applicable City of Fresno General Plan policies and GHG Plan strategies would result in less than significant impacts for greenhouse gas emissions. The GHG Plan identifies numerous strategies needed to achieve reduction targets for 2020 and beyond. Those strategies are categorized as follows:

- Land Use and Transportation
- Transportation Facilities Strategies
- Transportation Demand Strategies
- Energy Conservation Strategies for New and Existing Buildings
- Waste Diversion and Recycling and Energy Recovery
- Strategies for Existing Development
- Municipal Strategies

The GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the Project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno to modify approximately 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential Urban Neighborhood to approximately 2.2 acres of Light Industrial, 6.5 acres of Community Commercial and 3.4 acres of Residential – High Density, it should be noted that the proposed land uses on the Project Site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. As depicted in the Project description, the Project offers a variety of compatible uses. Of the uses proposed on the Project Site, only two uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project Site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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 but does not have an established GHG emission threshold for $CO_2e$, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table 8-1 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is approximately 13% less than the threshold identified by the SCAQMD.

**Table 8-1**
**Project Operational GHG Emissions**

| Summary Report | $CO_2e$ |
|---|---|
| Project Operational Emissions Per Year | 8,737.14 MT/yr |

Source: CalEEMod Emissions Model

**DISCUSSION**

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

The GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the Project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno to modify approximately 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential Urban Neighborhood to approximately 2.2 acres of Light Industrial, 6.5 acres of Community Commercial and 3.4 acres of Residential – High Density, it should be noted that the proposed land uses on the Project Site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. As depicted in the Project description, the Project offers a variety of compatible uses. Of the uses proposed on the Project Site, only two uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project Site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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 8-1 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is approximately 13% less than the threshold identified by the SCAQMD.

Based on the assessment above, the Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, any impacts would be less than significant. Therefore, no mitigation measures are needed.

In conclusion, the Project will result in a less than significant impact concerning the above described greenhouse gases impact analysis criteria.

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

The City of Fresno GHG Plan, adopted December 2014, is a comprehensive municipal and community strategy to reduce GHG emissions within the City of Fresno and is consistent with the goals and strategies outlined in CARB regulations. As noted in the GHG Plan, the Project's compliance with applicable City of Fresno General Plan policies and GHG Plan strategies would result in less than significant impacts for greenhouse gas emissions. The GHG Plan identifies numerous strategies needed to achieve reduction targets for 2020 and beyond. Those strategies are categorized as follows:

- Land Use and Transportation
- Transportation Facilities Strategies
- Transportation Demand Strategies
- Energy Conservation Strategies for New and Existing Buildings

- Waste Diversion and Recycling and Energy Recovery
- Strategies for Existing Development
- Municipal Strategies

The GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the Project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno, it should be noted that the proposed land uses on the Project Site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one Gas Station/Carwash, one bank, and 4,000+ dwelling units located within 1.5 miles of the Project Site. Furthermore, the Project has proposed to subdivide the parcels into 12 individual parcels that contain specific development proposals.

- Parcel A (1.49 AC) – 4,000 square foot gasoline service station with 1,400 square foot of retail space (5,400 square feet total) and 3,400 square foot carwash. The gasoline station would have 8 pumps and the car wash would be a drive through facility.
- Parcel B (0.68 AC) – 2,866 square foot fast food restaurant with a drive through window.
- Parcel C (1.33 AC) – Single building with 7,500 square feet of retail space.
- Parcel D (0.97 AC) – 5,225 square foot high-turnover restaurant and 1,600 square foot coffee shop.
- Parcel E (0.94 AC) – 11,700 square foot medical building.
- Parcel F (0.87 AC) – 9,000 square foot retail building.
- Parcel G (0.78 AC) – 10,400 square foot bank/office building.
- Parcel H (1.23 AC) – 12,000 square foot retail building (portion).
- Parcel I (0.36 AC) – 3,000 square foot office building (portion).
- Parcel J (0.39 AC) – 5,000 square foot retail building.
- Parcel K (0.28 AC) – 4,000 square foot day care.
- Parcel L (2.86 AC) – 170,000 square foot multi-family building with 150 units.

Parcels A and B are to be planned and zoned Light Industrial uses. Parcels C through J are to be planned and zoned for Community Commercial uses. Parcel L, K, and a portion of H would be planned and zoned for High Density/RM-3 uses.

Of the uses proposed on the Project Site, only two uses (gas station and bank) currently exist within the Project's vicinity. As noted in the TIA prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project Site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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 further the achievement of City of Fresno's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

In conclusion, the Project will result in a less than significant impact concerning the above described greenhouse gases impact analysis criteria.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **IX. HAZARDS AND HAZARDOUS MATERIAL** – Would the project: | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | | | X | |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | | | X | |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | | X | |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | | | X | |

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
| --- | --- | --- | --- | --- |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project site? | | | | X |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | | | X | |
| g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? | | | | X |

**DISCUSSION**

**a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

The proposed industrial, commercial, and residential land uses do not routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common hazardous materials such as household cleaners, paint, etc. Although the commercial land uses within the City of Fresno allows medical office buildings, there is a potential of hazardous materials being transported for use or disposal. The California Code of Regulation defines hazardous materials as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either (1) cause an increase in mortality or an increased in serious, irreversible, or incapacitating illness, or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Hazardous materials have been and are commonly used in commercial, agricultural, and industrial applications, and to a limited extent residential area. Hazardous wastes are defined in the same manner. Hazardous wastes are hazardous materials that no longer have a practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. Hazardous materials are classified according to four properties: toxic, ignitable, corrosive, and reactive.

If development occurs in the manner proposed in the site plan, the proposed medical office use has the highest potential to transport, use, or dispose of hazardous materials. As proposed, the approximate 11,450 square foot medical office building located on the eastern portion of the Project Site. Although, the proposed use of the medical office building may have a greater chance of dealing with hazardous materials, implementation of the City of Fresno's General Plan policies will reduce any perceived impacts. Policies include but not limited to:

Policy NS-4-a: Require safe processing and storage of hazardous materials, consistent with the California Building Code and the Uniform Fire Code, as adopted by the City.

Policy NS-4-e: Require that the production, use, storage, disposal, and transport of hazardous materials conform to the standards and procedures established by the County Division of Environmental Health. Require compliance with the County's Hazardous Waste Generator Program, including the submittal and implementation of a Hazardous Materials Business Plan, when applicable.

Policy NS-4-f: Require facilities that handle hazardous materials or hazardous wastes to be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.

With the inclusion of the policies detailed in the General Plan, applicable development standards, and compliance with the California Building Code, the operational phase of the proposed Project does not pose a significant hazard to the public or the environment. In addition, according to GeoTracker there are no open hazardous sites located within 1,000 feet of the Project Site. South of E. Jensen Avenue is an industrial area that has a few permitted/evaluated uses, according to the Department of Toxic Substances Control EnviroStor database. The nearest site is approximately 500 feet from the Project Site. The impact will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described hazards and hazardous materials impact analysis criteria.

**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?**

As proposed the Project, during operation, has the potential to be transferring hazardous materials. It is unlikely, however, in the event that an accident happens during the construction or operation, the Project will incorporate the goals and objectives identified in the Fresno County Multi-Hazard Mitigation Plan. Therefore, the proposed Project is not anticipated to create a significant hazard to the public or the environment, as mentioned previously in subsection a) above, the Project would be compliant with General Plan policies and applicable development standards in order to reduce any perceived impacts.

In the event an unforeseeable upset or accident were to occur, the Fresno County Department of Environmental Health and Safety will be contacted and Best Management Practices from the Multi-Hazard Mitigation Plan will be utilized. Therefore, the impacts will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described hazards and hazardous materials impact analysis criteria.

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

There are no schools within one-quarter mile of the Project Site. However, there are two schools within one mile of the Project Site. Calwa Elementary School and Aynesworth Elementary School. Since the schools are located outside of the one-quarter mile radii of the Project Site and if any hazardous materials are used, transported, or disposed of, then the applicable General Plan policies shall apply. Furthermore, the Project does not propose any uses that may cause the emission of hazardous emissions. Therefore, there is no possibility for the Project to emit hazardous emissions of any kind within one-quarter mile of an existing or proposed school. The impacts will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described hazards and hazardous materials impact analysis criteria.

**d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

There are no known existing hazardous material conditions on the property and 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. The Project itself will not generate or use hazardous materials in a manner outside health department requirements.

As shown in historical aerial photographs available on Google Earth, the Project Site has been vacant since at least 1998. It is not anticipated that there are no known underground storage tanks or pipelines located on the Project Site that contain hazardous materials, however, any underground storage tanks or pipelines will be removed in accordance with removal standards of Fresno County Department of Public Health. The disturbance of such items during construction activities is unlikely. Therefore, because the Project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 there is a *less than significant impact* as a significant hazard to the public or environment.

In conclusion, the Project will result in a less than significant impact concerning the above described hazards and hazardous materials impact analysis criteria.

**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 for people residing or working in the project site?**

The Project Site is not located in an FAA-designated Runway Protection Zone, Inner Safety Zone, Sideline Safety Zone, and Traffic Pattern Zone according to review of the Fresno Yosemite International (FYI) Airport Land Use Compatibility Plan (ALUCP). Furthermore, the Project is not within the Airport Influence Area (AIA) for the FYI designated by the Fresno Council of Government ALUCP. The AIA is the approximated two-mile buffer area in which current and projected future airport-related noise, safety, airspace protection, or overnight factors/layers may significantly affect land use. The AIA also establishes the Airport Land Use Commissions' jurisdictional authority and boundary. In addition, the proposed Project is not located within a direct flight path designated by the FYI Airport, therefore would not expose people residing or working in the Project Site to a significant amount of ambient noise. Based upon the goals of the proposed Project, no potential interference with an adopted emergency response or evacuation plan has been identified. There will be *no impact*.

In conclusion, the Project will result in no impacts concerning the above described hazards and hazardous substances impact analysis criteria.

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

The City's design and environmental review procedures shall ensure compliance with emergency response and evacuation plans. In addition, the site plan will be reviewed by the Fire Department per standard City procedure to ensure consistency with emergency response and evacuation needs. Currently, the Project incorporates three access points along E. Jensen Avenue and three access points along S. Maple Avenue, which will be utilized for purposes of emergency vehicle access. Therefore, the proposed Project would have a *less than significant impact* on emergency evacuation.

In conclusion, the Project will result in a less than significant impact concerning the above described hazards and hazardous materials impact analysis criteria.

**g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?**

The land surrounding the Project Site is primarily developed with urban and suburban uses and is not considered to be wildlands. Additionally, Cal Fire finds that the Project Site has low frequency, limited extent, limited magnitude, and low significance, regarding wildfire threats. The proposed Project would not expose people or structures to significant risk of loss, injury or death involving wildland fires and there is *no impact*.

In conclusion, the Project will result in no impacts concerning the above described hazards and hazardous substances impact analysis criteria.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **X. HYDROLOGY AND WATER QUALITY** – Would the project: | | | | |
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | | | X | |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | | | X | |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would: | | | | |
| i) Result in a substantial erosion or siltation on- or off-site; | | | X | |
| ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site: | | | X | |

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | | | X | |
| iv) impede or redirect flood flows? | | | X | |
| d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | | | X | |
| e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | | | X | |

**DISCUSSION**

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

Adverse groundwater conditions of limited supply and compromised quality have been well documented by planning, environmental impact report and technical studies over the past 20 years including the Master Environmental Impact Report No. 2012111015 for the Fresno General Plan, the MEIR 10130 for the 2025 Fresno General Plan, Final EIR No.10100, Final EIR No.10117 and Final EIR No. SCH 95022029 (Fresno Metropolitan Water Resource Management Plan), et al. These conditions include water quality degradation due to contamination from 1,2-dibromo-3-chloropropane (DBCP), ethylene-dibromide (EDB), trichloroethylene (TCE), 1,2,3-trichloropropane (TCP), tetrachloroethylene (PCE), 1,1-dichloroethane (DCE), nitrate, and from naturally occurring arsenic, iron, manganese, and radon concentrations; low water well yields in some parts of the City; limited aquifer storage capacity from over-utilization; limited recharge activities; and, intensive urban or semi-urban development occurring up-gradient from the Fresno Metropolitan Area.

Implementation of the proposed Project would not violate any water quality or waste discharge requirements. Construction activities including grading could temporarily increase soil erosion rates during and shortly after Project construction. Construction-related erosion could result in the loss of soil and could adversely affect water quality in nearby surface waters. The Regional Water Quality Control Board will require a Project specific Storm Water Pollution Prevention Plan (SWPPP) to be prepared for each project that disturbs an area one acre or larger. The SWPPP is required to include project specific best management measures that are designed to control drainage and erosion. Furthermore, the proposed Project has been designed to control storm water runoff and erosion, both during and after construction. Project specific drainage improvements would reduce the potential for the proposed Project to violate water quality standards during construction to a *less than significant impact*.

In regard to the above described hydrology and water quality impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described hydrology and water quality impact analysis criteria.

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

On January 17, 2014, the Governor of California, proclaimed a State of Emergency in the State of California due to severe drought conditions. On April 25, 2014 and April 1, 2015, the Governor signed Executive Orders directing the State Water Resources Control Board ("State Water Board") to adopt emergency regulations to ensure urban water suppliers implement drought response plans to limit outdoor irrigation and other wasteful water practices. California Water Code Section 1058.5 grants the State Water Board the authority to adopt emergency regulations during a period when the Governor has issued a proclamation of emergency based upon drought conditions or in response to drought conditions that exist, or are threatened, in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years.

On July 15, 2014, the State Water Board adopted an emergency regulation for urban water conservation requiring each urban water supplier to implement the stage of its water shortage contingency plan that imposes restrictions on outdoor irrigation, which resulted in the City of Fresno implementing Stage 2 of its Water Shortage Contingency Plan.

On May 5, 2015, the State Water Board adopted additional emergency regulations for urban water conservation, requiring the City of Fresno to reduce its water usage by 28% compared to 2013 and impose additional prohibitions on water use beginning June 1, 2015, through February 28, 2016. In 2015, the City of Fresno implemented additional water conservation measures resulting in 23% reduction in the City's water usage in 2015 and 2016.

On August 29, 2016, the Governor signed into law SB 814, which required the City of Fresno to define “excessive use” regarding water usage, and to establish a method to identify and discourage excessive water use.

California received record precipitation in the winter of 2017, resulting in mountain snowpack at 164% of the season average and on April 7, 2017, the Governor declared an end to California’s drought emergency for all but Fresno, Kings, Tulare, and Tuolumne Counties in the state of California by Executive Order B-40-17. Executive Order B-40-17 directed the State Water Board to make permanent prohibitions on certain practices which do not conserve water.

On April 26, 2017, the State Water Board rescinded mandatory water conservation standards statewide, but left in effect prohibitions on certain water uses and required certain water conservation activities at all times in the City of Fresno comports with the Governor’s Executive Order. In October, 2017, the City of Fresno amended the FMC to update specific prohibitions against wasteful water use practices to comport with state regulations, established a new definition for excessive water use, updated outdoor watering restrictions based on drought stage declarations, and changed the enforcement fine schedule for violations of prohibited water use practices. The City of Fresno adopted further water conservation revisions to the FMC in April, 2019, defining Excessive Water Use for customers in single-family residences or multi-unit housing in which each unit is individually metered or sub-metered, as using potable water in excess of the maximum gallons per hour, depending on the City’s current Water Shortage Contingency Plan stage, during days or hours when outdoor irrigation is prohibited, more than one day during the monthly billing period, as recorded by the City. The maximum gallons per hour are: Stage 1 - 400 gallons per hour recommended. Stage 2 - 400 gallons per hour. Stage 3 - 350 gallons per hour. Stage 4 - 300 gallons per hour.

Fresno is one of the largest cities in the United States that still maintains a significant reliance on groundwater as part of its public water supply portfolio. Surface water treatment and distribution has been implemented in the northeastern part of the City since 2004 and in the southeastern part of the City in 2018, but the City is still subject to an EPA Sole Source Aquifer designation. While the aquifer underlying Fresno typically exceeds a depth of 300-feet and is capacious enough to provide adequate quantities of safe drinking water to the metropolitan area well into the twenty-first century, groundwater degradation, increasingly stringent water quality regulations, and an historic trend of high consumptive use of water on a per capita basis (currently 205 gallons per day per capita), have resulted in a general decline in aquifer levels, increased cost to provide potable water, and localized water supply limitations.

The City’s groundwater aquifer has been documented by the State Department of Water Resources (Bulletin 118 - Interim Update 2016) to be critically over-drafted and has been designated a high-priority basin for corrective action through the Sustainable Groundwater Management Act (SGMA).

Adverse groundwater conditions of limited supply and compromised quality have been well documented by planning, environmental impact report and technical studies over the past 20 years including the Master Environmental Impact Report No. 2012111015 for the Fresno General Plan, the MEIR 10130 for the 2025 Fresno General Plan, Final EIR No.10100, Final EIR No.10117 and Final EIR No. SCH 95022029 (Fresno Metropolitan Water Resource Management Plan), et al. These conditions include water quality degradation due to contamination from 1,2-dibromo-3-chloropropane (DBCP), ethylene-dibromide (EDB), trichloroethylene (TCE), 1,2,3-trichloropropane (TCP), tetrachloroethylene (PCE), 1,1-dichloroethane (DCE), nitrate, and from naturally occurring arsenic, iron, manganese, and radon concentrations; low water well yields in some parts of the City; limited aquifer storage capacity from over-utilization; limited recharge activities; and, intensive urban or semi-urban development occurring up-gradient from the Fresno Metropolitan Area.

The City of Fresno is actively addressing these issues through citywide metering and updating water use targets and the water shortage contingency plan in the City's Urban Water Management Plan (UWMP). The Fresno Metropolitan Water Resource Management Plan, which has been adopted and the accompanying Final EIR (SCH #95022029) certified. The purpose of these management plans is to provide safe, adequate, and dependable water supplies in order to adequately meet existing and the future needs of the metropolitan area in an economical manner; protect groundwater quality from further degradation and overdraft; and, provide a plan of reasonably implementable measures and facilities. City water wells, pump stations, recharge facilities, water treatment and distribution systems have been expanded incrementally to mitigate increased water demands and respond to groundwater quality challenges.

In response to the need for a comprehensive long-range water supply and distribution strategy, the Fresno General Plan recognizes regional water resource planning efforts, such as, the Kings Basin's Integrated Regional Water Management Plan, the Fresno-Area Regional Groundwater Management Plan, and City of Fresno Metropolitan Water Resource Management Plan and cites the findings of the City of Fresno 2010 UWMP. The purpose of these management plans is to provide safe, adequate, and dependable water supplies on order to adequately meet existing and future needs of the Kings Basin regions and the Fresno-Clovis metropolitan area in an economical manner; protect groundwater quality from further degradation and overdraft; and, provide a plan of reasonably implementable measures and facilities.

The 2010 Urban Water Management Plan, Figure 4-3 (incorporated by reference) illustrates the City of Fresno's goals to achieve a 'water balance' between supply and demand while decreasing reliance upon and use of groundwater. To achieve these goals the City is implementing a host of strategies, including:

- Intentional groundwater recharge through reclamation at the City's groundwater recharge facility at Leaky Acres (located northwest of Fresno-Yosemite international Airport), refurbish existing streams and canals to increase percolation, and recharge at Fresno Metropolitan Flood Control District's (FMFCD) storm water basins;
- Increase use of existing surface water entitlements from the Kings River, United States Bureau of Reclamation and Fresno Irrigation

District for treatment at the Northeast Surface Water Treatment Facility (NESWTF) and construct a new Southeast Surface Water Treatment Facility (SESWTF); and

- Recycle wastewater at the Fresno-Clovis Regional Wastewater Reclamation Facility (RWRF) for treatment and re-use for irrigation, and to percolation ponds for groundwater recharge. Further actions include the General Plan, Policy RC-6-d to prepare, adopt and implement a City of Fresno Recycled Water Master Plan.

The City has indicated that groundwater wells, pump stations, recharge facilities, water treatment and distribution systems shall be expanded incrementally to mitigate increased water demands. One of the primary objectives of Fresno's future water supply plans detailed in Fresno's Metropolitan Water Resources Management Plan, 2010 & 2015 UWMPs is to balance groundwater operations through a host of strategies. Through careful planning, Fresno has designed a comprehensive plan to accomplish this objective by increasing utilization of surface water supplies through expansion of surface water treatment facilities, intentional recharge, and conservation, thereby reducing groundwater pumping. The City continually monitors impacts of land use changes and development project proposals on water supply facilities by assigning fixed demand allocations to each parcel by land use as currently zoned or proposed to be pre-zoned.

Until 2004, groundwater was the sole source of water for the City. In June 2004, the 30 Million Gallon Per Day (MGD) Northeast Surface Water Treatment Facility ("NESWTF") began providing Fresno with water treated to drinking water standards and in May 2018, the 54 MGD Southeast Surface Water Treatment Facility ("SESWTF") became operational. In order to meet demands anticipated by the growth implicit in the 2025 Fresno General Plan further construction of surface water treatments facilities and recycled water facilities will be required. Surface water is used to replace lost groundwater through Fresno's intentional recharge program at the City-owned Leaky Acres, Nielsen Recharge Facility, and smaller facilities in Southeast Fresno. Fresno holds contracts to surface water supplies from Millerton Lake and contractual rights to surface water from Pine Flat Reservoir. In 2010, Fresno renewed its contract with the United States Bureau of Reclamation, which entitles the City to 60,000 acre-feet per year of Class 1 water into the extended future. This water supply has further increased the reliability of Fresno's water supply.

Also, during the period 2005 to 2014, Fresno updated its Metropolitan Water Resources Management Plan designed to ensure the Fresno metro area has a reliable water supply through 2025. The plan implements a conjunctive use program, combining groundwater, treated surface water, intentional recharge and an enhanced water conservation program.

The use of groundwater will continue to be an important part of the City's supply but will not be relied upon as heavily as has historically been the case. The 2015 UWMP shows that groundwater pumped by the City has decreased from approximately 148,006 AF/year in 2008 to approximately 83,360 AF/year in 2015. With the 54-MGD SESWTF (expandable to 80-MGD) coming online in 2018 it is anticipated further groundwater pumping reductions will be realized. The projected total estimated groundwater yield for the 2040 is approximately 148,900 AF/year, inclusive of intentional recharge (Table 6-3, 2015 UWMP). In order to meet future demand projections, the City is planning to rely on expanding their delivery and treatment of surface water supplies and groundwater recharge activities.

The City has been adding to and upgrading its water supplies through capital improvements, including adding pipelines to distribute treated surface water as previously discussed. Additionally, in 2009, the treatment capacity of the Fresno/Clovis Regional Wastewater Reclamation Facility was improved. The City has recently been providing tertiary treatment at some of its wastewater treatment plants to supply tertiary treated recycled water for landscape irrigation to new growth areas and the North Fresno Wastewater Reclamation Facilities Satellite Plant was developed to serve the Copper River development and golf course in the northern part of Fresno.

In addition, the General Plan policies require the City to maintain a comprehensive conservation program to help reduce per capita water usage, and includes conservation programs such as landscaping standards for drought tolerance, irrigation control devices, leak detection and retrofits, water audits, public education and implementing US Bureau of Reclamation Best Management Practices for water conservation to maintain surface water entitlements.

The City also has implemented an extensive water conservation program which is detailed in Fresno's current UWMP and additional conservation is anticipated as more of the City's residential customers become metered. The City implemented a residential water meter program; installing and metering water service for all single-family residential customers in the City by 2013. In terms of water conservation efforts, the recent completion of the residential meter installation project realized the single largest reduction of water use. Prior to initializing the meter installation project water use in the City was at a high of 168,122 AF/year in 2008 (Table 4-1, 2015 UWMP). At completion of the meter installation project water use dropped to 135,595 AF/year. Although implementation of this project occurred during the economic downturn, water use has remained at or below this value, except in 2013 when there was a noticeable jump in use. The implementation of the metering project yielded a water savings of approximately 30,000 AF/year.

In order for the City to develop an SGMA compliance plan for this proposed development Project, a Water Demand Analysis has been calculated which yielded the following:

In accordance with Fresno Municipal Code (FMC) Section 6-501, the estimated peak hour water demands for the proposed Project shall be based on 1.51 Gallons per Minute (GPM) for multifamily residential units. In addition, the Fire Protection Water Demand shall be added to the overall Project water demand at 1,500 gpm. The sum of the Peak Hour and Fire Protection Water Demands shall establish the total instantaneous water supply flow required for the Project, inclusive of fire protection. Furthermore, the commercial and industrial land uses have been previously analyzed in the MEIR and the scope of the development is not substantially changing.

The City's General Plan designates the Project Site as Light Industrial, Community Commercial and Residential Urban Neighborhood and is being proposed to be changed from Residential Urban Neighborhood to Residential High Density. Urban Neighborhood and High Density residential is intended for multi-family dwellings but still allows for a mix of housing types including single-family houses. This land use plans for a compact community that includes community facilities and walkable access to parkland and commercial services; it also supports efficient, frequent transit service. A portion of multi-family residential districts fall into this designation. This land use primarily pertains to high density residential developments. The maximum FAR development standard does not apply to the proposed land use. The analysis included in the City's General Plan MEIR assumed that the site would be developed with Light Industrial, Community Commercial, and Residential Urban Neighborhood, not High Density Residential as proposed. However, approval of the rezone and general plan amendment would ensure that the zoning designation is consistent with the land use designation for the Project Site. Because the recently adopted 2015 UWMP analyzed the Fresno General Plan land use capacity, the water demand resulting from the proposed Project (i.e.,84.5 acre-feet per year) would be less than anticipated in the UWMP's Lower Income Household Projected Water Demands (Table 4-7). The Project would not significantly increase development beyond the level assumed for the site in the City's General Plan MEIR.

Due to the citywide improvements identified in the City's 2010 and 2015 UWMPs, the City's Metropolitan Water Resources Management Plan, and the City's comprehensive conservation programs, which depicts that the City will have adequate water supply until approximately 2025, the proposed Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Project construction would add additional impervious surfaces to the Project Site; however, various areas of the Project Site would remain largely pervious, which would allow infiltration to underlying groundwater. For example, the Project would include open space areas throughout the Project Site in accordance with City standards. Additionally, the Project includes ample landscaping areas that would remain pervious. The areas would continue to contribute to groundwater recharge following construction of the Project. Furthermore, the Project is not anticipated to significantly affect groundwater quality because sufficient stormwater infrastructure would be constructed as part of Project to detain and filter stormwater runoff and prevent long-term water quality degradation. Therefore, Project construction and operation would not substantially deplete or interfere with groundwater supply or quality.

In summary, the City of Fresno General Plan policies and initiatives aimed toward ensuring that the City has a reliable, long-range source of water through the implementation of measures to promote water conservation through standards, incentives and capital investments.

In regard to the above described hydrology and water quality impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described hydrology and water quality impact analysis criteria.

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

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

The Project Site is mostly flat and the Project would not substantially alter the existing drainage pattern of the site or area. The Project Site does not have a stream or river and is not near another body of water. The Project would not result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

As mentioned previously, a Stormwater Pollution Prevention Plan (SWPPP) will be implemented during Project construction. SWPPPs include mandated erosion control measures, which are developed to prevent significant impacts related to erosion caused by runoff during construction. The impact is *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described hydrology and water quality impact analysis criteria.

**ii. Substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?**

The Project would not result in substantial surface runoff or contribute to flooding on- or off-site. While there is the potential for runoff to occur during Project construction, implementation of required SWPPP BMPs will reduce any impacts related to stormwater runoff, including flooding, to less than significant. The Project will have a *less than significant impact*.

In conclusion, the Project will result in a less than significant impact concerning the above described hydrology and water quality impact analysis criteria.

**iii. Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

The storm drainage plan will be supported by engineering calculations to ensure that the

Project does not 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.

The proposed storm drainage plan includes an engineered network of storm drain lines and landscaped bioswales. The potential development that may occur on site as a result of this Project includes dwelling units developed will have wash basins, showers, low flow toilets, hose connections, a clothes washer, and a dishwasher, the commercial/office structures will have similar appliances/wash stations included also. The proposed Project would result in the construction of residential housing, commercial, and light industrial/offices that would generate an estimated 339 people, according to the 2019 Department of Finance population estimates.

Private development participates in the City's ability to meet water supply goals and initiatives through payment of fees established by the city for construction of recharge facilities, the construction of recharge facilities directly by the Project, or participation in augmentation/enhancement/enlargement of the recharge capability of Fresno Metropolitan Flood Control District storm water ponding basins. While the proposed Project may be served by conventional groundwater pumping and distribution systems, full development of the Fresno General Plan boundaries may necessitate utilization of treated surface water due to inadequate groundwater aquifer recharge capabilities. The Department of Public Utilities works with Fresno Metropolitan Flood Control District to utilize suitable FMFCD ponding (drainage) basins for the groundwater recharge program and works with Fresno Irrigation District to ensure that the City's allotment of surface water is beneficially used for intentional groundwater recharge.

The Project will be required to comply with all requirements of the Fresno Metropolitan Flood Control District. The developer will be required to provide improvements which will convey surface drainage to Master Plan inlets and which will provide a path for major storm conveyance. When development permits are issued, the subject site will be required to pay drainage fees pursuant to the Drainage Fee Ordinance. Based on correspondence from the Flood Control District provided on July 6, 2020, it has confirmed that the Flood Control District system can accommodate the Project. The Master Plan system has been designed such that during a two-year event flow will not exceed the height of the 6-inch curb. Should wedge curb (4.5 inch height) be used, the same criteria shall apply whereby flow remains below the top of curb.

If surface water runoff or event flows exceed volumes for which the Master Plan drainage system is designed to accommodate and the existing Master Plan storm drainage facilities do not have capacity to serve the proposed land use to avoid flooding, then the developer will be required to mitigate the impacts of the increased runoff from the proposed use to a rate that would be expected if developed in accordance with the Master Plan. The developer may either make improvements to the existing pipeline system to provide additional capacity or may use some type of permanent peak reducing facility in order to eliminate adverse impacts on the existing system. Should the developer choose to construct a permanent peak-reducing facility, such a system would be required to reduce runoff accordingly. Implementation of the mitigation measures may be deferred until time of development.

The project's compliance with the regulatory requirements of Fresno Metropolitan Flood Control District will assure that the impact of the Project on existing or planned stormwater drainage systems is less than significant. Because compliance with such regulatory requirements are an element of the Project, such requirements are not imposed as CEQA mitigation measures.

The Project will result in less than significant impacts to water quality due to potentially polluted runoff generated during construction activities. Construction would include excavation, grading, and other earthwork that may occur across most of the 12.18 acre Project Site. During storm events, exposed construction areas across the Project Site may cause runoff to carry pollutants, such as chemicals, oils, sediment, and debris. In addition, minor soil erosion may be a result of future grading activities. However, implementation of a SWPPP will be required for the Project. A SWPPP identifies all potential sources of pollution that could affect stormwater discharges from the Project Site and identifies BMPs related to stormwater runoff. There may be chemicals or surfactants used during Project maintenance or operations, so discharge could impact water quality standards. However, the impact will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described hydrology and water quality impact analysis criteria.

**iv. Impede or redirect flood flows?**

The proposed Project would not direct excess surface waters, impede or redirect any potential flood flows. The impact will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described hydrology and water quality impact analysis criteria.

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

Occupancy of this site will generate wastewater containing human waste, which is required to be conveyed and treated by the Fresno-Clovis Regional Wastewater Treatment and Reclamation Facility. There will not be any onsite wastewater treatment system. The proposed Project will be required to install sewer mains and branches, and to pay connection and sewer facility fees to provide for reimbursement of preceding investments in sewer trunks to connect this site to a publicly owned treatment works.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), a portion of the subject site is located in the 200-year floodplain, therefore, it does not necessitate appropriate floodplain management action.

The Project is located inland and not near an ocean or large body of water, therefore, would not be affected by a tsunami. Since the Project is located in an area that is not susceptible to inundation, the Project would not risk release of pollutants due to Project inundation. As such, the impact will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described hydrology and water quality impact analysis criteria.

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

Implementation of the Fresno General Plan policies, the Kings Basin Integrated Regional Water Management Plan, City of Fresno Urban Water Management Plan, Fresno-Area Regional Groundwater Management Plan, and City of Fresno Metropolitan Water Resource Management Plan and the applicable policies of the City's MEIR, will address the issues of providing an adequate, reliable, and sustainable water supply for the Project's urban domestic and public safety consumptive purposes. City of Fresno, Water Division has reviewed the Project for compliance with water quality and groundwater management. Further, the City's General Plan policies and initiatives to ensure the City promotes water conservation. Therefore, the Project will not conflict with the implementation of a water quality control plan or sustainable groundwater management.

In regard to the above described hydrology and water quality impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described hydrology and water quality impact analysis criteria.

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

**DISCUSSION**

**a) Physically divide an established community?**

The Project Site is located within the southern portion of the City of Fresno and is within proximity to residential, commercial, and industrial uses. The City's existing General Plan designates the approximate 12.18 acres Project Site as Light Industrial (±5.90 acres), Community Commercial (±2.15 acres), and Residential – High Density (±3.50 acres). The existing zoning designations are consistent with the General Plan land use designations. They include Light Industrial (IL), Community Commercial (CC), and Residential Multi-Family, Urban Neighborhood (RM-2).The Project proposes to amend the General Plan land use designations of the Project Site to Light Industrial (±2.2 acres), Community Commercial (±6.5 acres), and Residential - High Density (±3.4 acres) and corresponding Rezone in order to maintain consistency with the amended General Plan land use designations. In addition to the reconfiguration of zones to match the proposed General Plan Amendment. It should be noted that the Rezone will also change the existing RM-2 zone to the RM-3 zone in order to maintain consistency with the prescribed General Plan Amendment and densities of the Project. Approval of the General Plan Amendment and Rezone would ensure that the zoning designation is consistent with the General Plan designations for the Project Site. Upon approval of the requested entitlements, the proposed Project would not conflict with any land use plan, policy or regulation.

The Residential – High Density land use designation allows for densities between 30 to 45 units per acre, which will require the development multi-family projects. The Community Commercial land use designation is intended for commercial development that primarily serves local needs such as convenience shopping and small offices and allows a Maximum Floor Area Ratio (FAR) of 1.0. Light Industrial accommodates a diverse range of light industrial uses, including limited manufacturing and processing, research, and development fabrication, utility equipment and service yards, wholesaling, warehousing, and distribution activities. Light Industrial allows for a FAR of 1.5. The land uses intended for the Project Site provide for a compact community that includes community facilities, walkable access to parkland, commercial services and residential housing; it also supports efficient, frequent transit service. The Residential – High Density designation is assigned for targeted areas with complementary land uses adjacently located. In addition, to the previous planning entitlements, the Project will also be subject to subsequent Development Permit Applications for each of the proposed developments has they occur in order to maintain certainty that the Project will abide by the development standards pursuant to the Fresno Municipal Code.

Furthermore, the Project has proposed to subdivide the parcels into 12 individual parcels that contain specific uses.

- Parcel A (1.49 AC) – 4,000 square foot gasoline service station with 1,400 square foot of retail space (5,400 square feet total) and 3,400 square foot carwash. The gasoline station would have 8 pumps and the car wash would be a drive through facility.
- Parcel B (0.68 AC) – 2,866 square foot fast food restaurant with a drive through window.
- Parcel C (1.33 AC) – Single building with 7,500 square feet of retail space.
- Parcel D (0.97 AC) – 5,225 square foot high-turnover restaurant and 1,600 square foot coffee shop.
- Parcel E (0.94 AC) – 11,700 square foot medical building.
- Parcel F (0.87 AC) – 9,000 square foot retail building.
- Parcel G (0.78 AC) – 10,400 square foot bank/office building.
- Parcel H (1.23 AC) – 12,000 square foot retail building (portion).
- Parcel I (0.36 AC) – 3,000 square foot office building (portion).
- Parcel J (0.39 AC) – 5,000 square foot retail building.
- Parcel K (0.28 AC) – 4,000 square foot day care.
- Parcel L (2.86 AC) – 170,000 square foot multi-family building with 150 units.

Parcels A and B are to be planned and zoned Light Industrial uses. Parcels C through J are to be planned and zoned for Community Commercial uses. Parcel L, K, and a portion of H will would be planned and zoned for High Density/RM-3 uses.

As proposed, the Project will be consistent with the following Fresno General Plan goals:

<u>Fresno General Plan Goals, Objectives and Policies</u>

- Promote and protect unique neighborhoods and mixed use areas throughout Fresno that respect and support various ethnic, cultural, and historic enclaves; provide a range of housing options, including furthering affordable housing opportunities; and convey a unique

character and lifestyle attractive to Fresnans. Support unique areas
character and lifestyle attractive to Fresnans. Support unique areas
through more specific planning processes that directly engage community members in creative and innovative design efforts.

- Facilitate the development of vertical and horizontal mixed-uses to blend residential, commercial, and public land uses on one or adjacent sites. Ensure land use compatibility between mixed-use districts in Activity Centers and the surrounding residential neighborhoods.
- Provide for a diversity of districts, neighborhoods, housing types (including affordable housing), residential densities, job opportunities, recreation, open space, and educational venues that appeal to a broad range of people throughout the city.
- Make full use of existing infrastructure, and investment in improvements to increase competitiveness and promote economic growth.
- Promote orderly land use development in pace with public facilities and services needed to serve development.
- Develop Complete Neighborhoods and districts with an efficient and diverse mix of residential densities, building types, and affordability which are designed to be healthy, attractive, and centered by schools, parks, and public and commercial services to provide a sense of place and that provide as many services as possible within walking distance.

These goals contribute to the establishment of a comprehensive city-wide land use planning strategy to meet economic development objectives, achieve efficient and equitable use of resources and infrastructure, and create an attractive living environment in accordance with Objective LU-1 of the Fresno General Plan.

Objective LU-2 and 5 are intended to establish a plan for infill development that provides a diverse housing stock that will support balanced urban growth, and make efficient use of resources and public facilities to meet the needs of current and future residents. The Project includes a range of apartment types, unit sizes, restaurants, retail, a financial institution, and offices. The General Plan includes Policy LU-5-a, which promotes low density residential uses only where there are established neighborhoods. Existing low density residential uses surround the proposed Project Site. Likewise, Policy LU-5-g allows new development in or adjacent to established neighborhoods that is compatible in scale and character with the surrounding area by promoting a transition in scale and architectural character between new buildings and established neighborhoods, as well as integrating pedestrian circulation and vehicular routes. The proposed Project Site is adjacent to an existing residential subdivision to the north and east, approximately 390 feet east of a mobile home park, 80 feet east of various commercial uses, and 100 feet north of light industrials uses within Fresno County. The Project remains largely consistent with the General Plan, with the caveat of the residential alteration from Urban

Neighborhood to Residential – High Density. This change in zoning will increase the amount of potential dwelling units by 44. The Project is consistent with the nearby land uses and does not substantially increase the intensity of the site, which has been previously analyzed under MEIR SCH No. 2012111015.

This Project supports the above-mentioned goals and policies in that the density of the proposed development conforms to the requested land use designation (Residential – High Density) and the maximum allowed FAR of the Community Commercial and Light Industrial parcels are also consistent with the Fresno General Plan. The proposed mixed-use Project is consistent with the developed surrounding residential land uses to the north and east, the light industrial land uses to the south, and the commercial land uses to the west and would not physically divide an established community.

In regard to the above described land use and planning impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described land use and planning impact analysis criteria.

**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?**

The proposed Project is located in an area that is planned for light industrial, commercial, and multi-family residential development by the City. The construction of this Project will not conflict with any conservation plans because it is not located within any conservation plan areas. It is determined that the proposed 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 Fresno. Furthermore, the proposed Project, including the design and improvement of the Project Site, is found; (1) To be consistent with the goals, objectives and policies of the applicable City of Fresno General Plan; (2) To be suitable for the type and density of development; (3) To be safe from potential cause or introduction of serious public health problems; and, (4) To not conflict with any public interests in the Project Site or adjacent lands. The authorization request for the proposed plan amendments regarding General Plan Amendment and Rezoning is expected to be approved. The proposed Project will have a *less than significant impact*.

In conclusion, the Project will result in a less than significant impact concerning the above described land use and planning impact analysis criteria.

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

**DISCUSSION**

**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?**

The Project Site is not located in an area designated for mineral resource preservation or recovery, therefore, 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 and provide *no impact*.

In conclusion, the Project will result in no impacts concerning the above described mineral resources impact analysis criteria.

**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?**

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.

In conclusion, the Project will result in a less than significant impact concerning the above described mineral resources impact analysis criteria.

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

**DISCUSSION**

**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 in other applicable local, state, or federal standards?**

Generally, the three primary sources of substantial noise that affect the City of Fresno and its residents are transportation-related and consist of major streets and regional highways; airport operations at the Fresno Yosemite International, the Fresno-Chandler Downtown, and the Sierra Sky Park Airports; and railroad operations along the BNSF Railway and the Union Pacific Railroad lines.

In developed areas of the community, noise conflicts often occur when a noise sensitive land use is located adjacent or in proximity to a noise generator. Noise in these situations frequently stems from on-site operations, use of outdoor equipment, uses where large numbers of persons assemble, and vehicular traffic. Some land uses, such as residential dwellings, hospitals, office buildings and schools, are considered noise sensitive receptors and involve land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise.

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 proposed with the Project, the medical offices are located within the southeast portion and the multi-family residential is located in the northwest portion of the Project Site.

Potential noise sources at the Project Site would occur primarily from roadway noise on the Project Site roadways. The commercial uses proposed as a part of this Project, will not generate a significant amount of noise, due to the type of uses proposed and the hours of operation will comply with City of Fresno standards. The City of Fresno Noise Element of the Fresno General Plan establishes a land use compatibility criterion of 65 dB DNL for exterior noise levels in outdoor areas of noise-sensitive land uses as the normally acceptable range. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation. Out of the components of the proposed Project. Furthermore, the Noise Element also requires that interior noise levels attributable to indoor noise sources not exceed 45 dB DNL for residential uses. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

Existing sensitive receptors are single family homes adjacent to the Project Site to the north and east. During the construction phase of the Project, noise generating activities will be present, however, it will be temporary in nature and any machinery used as a part of the construction of the Project will be muffled. In addition, all adjacent single family homes are within the vicinity of roadway (local, super arterial, and collector). E. Jensen Avenue is designated as a Super Arterial and S. Maple Avenue is designated as a Collector. Thus, inherently exposing those properties to an elevated level of ambient noise. The Project will be required to provide screening measures when the a Project is located near differing land use, in order to shield the adjacent land uses, such as providing a 6-foot-high screen wall as detailed in Chapter 15, Article 20, Section 15-2008 – Screening between differing land uses of the Fresno Municipal Code (FMC).

For stationary noise sources, the noise element establishes noise compatibility criteria in terms of the exterior hourly equivalent sound level ($L_{eq}$) and maximum sound level ($L_{max}$). The standards are more restrictive during the nighttime hours, defined as 10:00 p.m. to 7:00 a.m. The standards may be adjusted upward (less restrictive) if the existing ambient noise level without the source of interest already exceeds these standards. The Noise Element standards for stationary noise sources are: (1) 50 dBA $L_{eq}$ for the daytime and 45 dBA $L_{eq}$ for the nighttime hourly equivalent sound levels; and, (2) 70 dBA $L_{max}$ for the daytime and 65 dBA $L_{max}$ for the nighttime maximum sound levels.

Noise created by any proposed stationary noise sources or existing stationary noise sources which undergo modification that may increase noise levels shall be mitigated so as not to exceed the noise level standards of Table 5.11-8 of the MEIR at noise sensitive land uses. If the existing ambient noise levels equal or exceed these levels, mitigation is required to limit noise to the ambient noise level plus 5 dB.

The current Project Site is vacant, with an abandoned drainage basin in the northwest portion of the site. Therefore, it is reasonable to assume that the proposed Project will result in an increase in temporary and/or periodic ambient noise levels on the Project Site above existing levels. However, these noise levels will not exceed those generated by adjacent existing or planned land uses, when implementing screening measures required pursuant to the City of Fresno's development standards.

The City of Fresno Noise Element of the General Plan sets noise compatibility standards for transportation noise sources in terms of the Day-Night Average Level (Ldn). Implementing Policy NS-1-a of the noise element establishes a land use compatibility criterion as 65 dB Ldn for exterior noise exposure within outdoor activity areas of residential and other noise-sensitive uses. Outdoor activity areas generally include backyards of single-family residences, individual patios or decks of multi-family developments and common outdoor recreation areas of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

Additionally, implementing Policy NS-1-h of the noise element requires that interior noise levels attributable to exterior transportation noise sources not exceed 45 dB Ldn. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

<u>Short-term Noise and Vibration Impacts</u>

The construction of a Project involves both short-term, construction related noise, and long-term noise potentially generated by increases in area traffic, nearby stationary sources, or other transportation sources. The FMC allows for construction noise in excess of standards if it complies with the section below (Chapter 10, Article 1, Section 10-109 – Exemptions). It states that the provisions of Article 1 – Noise Regulations of the FMC shall not apply to:

> Construction, repair or remodeling work accomplished pursuant to a building, electrical, plumbing, mechanical, or other construction permit issued by the city or other governmental agency, or to site preparation and grading, provided such work takes place between the hours of 7:00 a.m. and 10:00 p.m. on any day except Sunday.

Thus, construction activity would be exempt from City of Fresno noise regulations, as long as such activity is conducted pursuant to an applicable construction permit and occurs between 7:00 a.m. and 10:00 p.m., excluding Sunday. Therefore, short-term construction impacts associated with the exposure of persons to or the generation of noise levels in excess of standards established in the general plan or noise ordinance or applicable standards of other agencies would be less than significant.

Long Term Noise Impacts

The proposed Project is a mixed use development including residential uses, commercial, and light industrial. The immediate vicinity (adjacent to the Project Site) consists of existing residential uses. Additionally, all surrounding properties are within the vicinity of local, collector and super arterial streets which increase the ambient noise of the Project Site and its surroundings. Nearly directly across S. Maple Avenue from the Project Site there are several commercial uses, specifically a gas station with ancillary businesses. Gas stations typically receive high volumes of traffic. Another gas station with a service store (Handi Stop Mini Mart) is 0.3 miles west of the gas station location, however, the gas station near the Project Site, offers more pump stations, has a larger store, a carwash, and two other commercial businesses. The Handi Stop Mini Mart and the gas station directly adjacent to the Project site are two examples of gas stations that are near the Project site and adjacent to residential uses. It is important to emphasize that the larger of the two examples (the adjacent gas station) is a larger facility compared to the Handi Stop Mini Mart. Given the fact that gas stations have a high-turnover rate, and the more pumps available, the more patrons will be visiting, therefore, that would set a higher level of ambient noise within that particular area. Consequently, that is the reason why the light industrial (gas station) use was located at the southwestern corner of the Project site. This will allow the proposed Project's gas station to operate in an area already accustom to a particular ambient noise level and be located in the furthest possible area of the Project site from the existing single-family homes.

As mentioned in the City of Fresno's General Plan MEIR, Noise Section, as the City moves to achieve its ultimate goal of "buildout", locating new uses within the Planning Area, along with construction, would result in increased traffic volumes, thus incrementally increasing noise levels in some area. As previously mentioned, Jensen and Maple Avenues front the Project to the west and south. They are considered a Super Arterial and Collector, respectively. The City's General Plan did not estimate the existing noise levels of this particular intersection. However, the Project proposes to locate a multi-family apartment complex (Sensitive Noise receptors, designated by the General Plan) in the northern portion of the property, adjacent to existing single family dwellings, in order to reduce any perceived noise impacts generated from the intersection. This means that the proposed multi-family structure is approximately 444 feet north of the intersection and therefore, any cumulative impacts measured would be at a less than significant level. Furthermore, the structures proposed near the intersection will act like as a buffer and attenuate noise produced by the intersection of E. Jensen Avenue and S. Maple Avenue. Additionally, as required by the Title 24 California Building Code, construction standards will be incorporated, further reducing any impacts from outside noise sources.

*Exterior Noise Exposure*
Traffic noise exposure levels associated with vehicular traffic is not expected to exceed the City's exterior noise level standard at any of the closest proposed sensitive receptors along S. Maple Avenue and E. Jensen Avenue. According to the Fresno General Plan, major travel corridors have an estimated ambient noise level and range within the Planning Area.

The distance between the closest residential building and medical offices to the each of the corresponding roads, proposed as part of the Project are within the approximate 65 db to 60 db range of E. Jensen Avenue as illustrated in Figure NS-3 Future Noise Contours (Vehicle) of the Fresno General Plan. Furthermore, S. Maple Avenue does not designate noise levels for the section of road that abuts the Project Site. However, Maple Avenue is considered a four lane collector road and in a norther section of Maple Avenue, the Project Site would be outside of the 65 db to 60 db range. Therefore, the sensitive uses proposed as a part of the Project are within the acceptable exterior noise level range identified in the Fresno General Plan MEIR.

*Interior Noise Exposure*
The City of Fresno interior noise level standard is 45 dB Ldn. During development of the Project, construction methods complying with current building code requirements will reduce exterior noise levels, to an acceptable level, if windows and doors are closed. This will be sufficient for compliance with the City's 45 dB Ldn interior standard at all proposed lots. A requirement that it be possible for windows and doors to remain closed for sound insulation means that air conditioning or mechanical ventilation will be required.

<u>Conclusion</u>

Although the Project will create additional activity in the area, the Project will be required to comply with all noise policies and development standards identified within the Fresno General Plan and MEIR as well as the noise ordinance of the Fresno Municipal Code. Through compliance with the policies and development standards, the interior and exterior noise levels would comply with the City's noise standards and impacts will be *less than significant*. Furthermore, the Project may produce an elevated ambient noise level during construction, however, those impacts are temporary, and no operational noise will be generated that exceeds the adopted noise levels identified for neighboring land uses.

In regard to the above described noise impact evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described noise impact analysis criteria.

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

The primary vibration-generating activities associated with the proposed Project would happen during construction when activities such as grading, utilities placement, and road construction occur. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 25 to 50 feet or further from the Project Site. At this distance, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours. Therefore, short-term construction impacts associated with the exposure of persons to or the generation of construction would be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described noise impact analysis criteria.

**c) 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 expose people residing or working in the project site to excessive noise levels?**

Both Fresno Chandler Executive Airport and the Fresno Yosemite International Airport are more than 4 miles away from the Project Site. The Fresno Chandler Executive Airport is 4.2 miles northwest and the Fresno Yosemite International Airport is 4.5 miles north of the Project Site as the crow flies. Furthermore, the proposed Project is outside noise level contours identified in both airport's Land Use Plans. The proposed Project would, therefore, not expose people residing or working in the Project Site to excessive noise levels associated with such airport facilities.

In conclusion, the Project will result in a less than significant impact concerning the above described noise impact analysis criteria.

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

**DISCUSSION**

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

According to the 2019 US Department of Finance population estimates, the population in Fresno is 536,683 people, and the average persons per household is 3.20. If the current 3.53 acres of RM-2 zoned area of the Project Site were to be fully built out in accordance with the current land use minimum and maximum of 16 dwelling units per acre and 30 units per acre; then the maximum allowable dwelling units would be 106 dwelling units. Therefore, the potential population derived from the Project Site, if the current conditions remained, would be 339 people. The 2017 Fresno Housing Element estimated the minimum capacity for the existing 3.53 acres of Residential Urban Neighborhood at 57 dwelling units. With the proposed Tentative Parcel Map and Conditional Use Permit, the only use that is proposed that will induce population growth is the proposed 150-unit multi-family housing building. The Project proposes to increase the estimated minimum dwelling units of the site by 93 dwelling units. This improves the City's housing supply by exceeding the minimum dwelling unit estimation. The proposed Project would result in the construction of the residential housing, among the other uses, and that would generate an estimated 480 people. The difference between the two outcomes is approximately 141 people. This is less than an estimated 0.001 percent growth in Fresno. An estimated 0.001 percent growth in Fresno is not considered substantial growth in

Fresno or the region and it is consistent with the assumed growth in the General Plan. The 480 people may come from Fresno or surrounding communities. The proposed Project would not include upsizing of offsite infrastructure or roadways. The Project will be reviewed by the Department of Public Works and installation of new infrastructure would be specific to the uses proposed as a part of the Development Permit Application. Implementation of the proposed Project would not induce substantial population growth in an area, either directly or indirectly. This is a *less than significant impact*.

In conclusion, the Project will result in a less than significant impact concerning the above described population and housing impact analysis criteria.

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

The surrounding parcels are primarily developed with single-family residential homes, light industrial uses, and commercial uses. As mentioned in the Land Use and Planning Section, the City's General Plan designates the approximate 12.18 acres Project Site as Light Industrial (±5.90 acres), Community Commercial (±2.15 acres), and Residential – Urban Neighborhood (±3.53 acres). The Project Site proposes to amend the General Plan land use designations of the Project Site to Light Industrial (±2.2 acres), Community Commercial (±6.5 acres), and Residential High Density (±3.4 acres). The existing zoning designations are consistent with the General Plan land use designations. They include Community Commercial (CC), Light Industrial (IL), and Residential Multi-Family, Urban Neighborhood (RM-2). In addition to the reconfiguration of zones to match the proposed General Plan Amendment. The Rezone will also change the existing RM-2 zone to the RM-3 zone in order to maintain consistency with the prescribed General Plan Amendment and densities of the Project. With the inclusion and reconfiguration of the Residential High-Density, this will allow for an approximate 151 dwelling units. The analysis included in the City's General Plan MEIR assumed that a portion of the site would be developed with Residential – Urban Neighborhood. The new proposed residential use is Residential High-Density. Approval of the Rezone and General Plan Amendment would ensure that the zoning designation is consistent with the land use designation for the Project Site.

The proposed Project will not displace any existing housing. The Project will not result in displacement of any persons as there are no residential units on the Project Site. As such, no impact associated with displacement of housing or people would occur.

In conclusion, the Project will result in no impacts concerning the above described population and housing impact analysis criteria.

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

**DISCUSSION**

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

i. **Fire protection?**

The Project Site is located approximately 1.47 miles as the crow flies (or 1.90 road miles) northwest from Fire Station 8 and approximately 600 feet Fresno County Fire Station

87.The City of Fresno Fire Department operates its facilities under the guidance set by the National Fire Protection Association in NFPA 1710, the Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operation to the Public by Career Fire Departments. NFPA 1710 sets standards for turnout time, travel time, and total response time for fire and emergency medical incidents, as well as other standards for operation and fire service. The Fire Department has established the objectives set forth in NFPA 1710 as department objectives to ensure the public health, safety, and welfare. Demand for fire service generated by the Project is within planned services levels of the Fire Department and the applicant will pay any required impact fees at the time building permits are obtained.

According to the Fresno General Plan MEIR, development impact fees are currently collected for the provision of capital facilities for fire facilities that will provide for future facilities as the City's population increases. Recognizing that there would be an increased demand for fire and emergency medical response, the General Plan Update includes several policies to support the activities of the Fresno Fire Department. The policies and objectives from the General Plan will ensure that the proposed Project does not significantly affect fire protection.

Additional fire service requirements for development of the proposed Project will include installation of public fire hydrants and the provision of adequate fire flows per Public Works Standards. Review for compliance with fire and life safety requirements for proposed residences are reviewed by both the Fire Department and the Building and Safety Services Section of the Planning and Development Department when a submittal for building plan review is made as required by the California Building Code.

In regard to the above described public services impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described public services impact analysis criteria.

**ii. Police protection?**

City police protection services are also available to serve the proposed Project with no new facilities required for police protection. The nearest Police Station is approximately 1.3 miles as the crow flies (1.75 road miles). The Project will be subject to the payment of development impact fees as it related to police protection services.

In regard to the above described public services impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described public services impact analysis criteria.

### iii. Schools?

The proposed uses, in particular the residential, result in generation of students, which would impact the District's student classroom capacity. New development proposed is subject to development fee rates in effect at the time of payment and are currently $3.79 per square foot for residential development. Fees will be calculated pursuant to rates effective at the time of payment and new development on the property will be subject to the development fee prior to issuance of a building permit. Presumably, the Project will be served by the Calwa Elementary School and Aynesworth Elementary School due to the proximity between them and the Project Site. Any increase to the student population will be offset by the funds collected via the School Impact fees. Fees will be paid during the building permit process. The proposed Project does not result in the construction of new school facilities. Impacts will be *less than significant*.

In conclusion, the Project will result in a less than significant impact concerning the above described public services impact analysis criteria.

### iv. Parks?

The proposed Project does include uses that would increase the use of park and recreation facilities in the area. The nearest park (Calwa Recreation and Park District Park) is approximately 2,150 feet as the crow flies northwest (or 2,700 feet by road) of the Project. The multifamily portion of the Project would include communal open space areas throughout the parcel in accordance with City standards. The communal open space area could function as a recreational amenity for the proposed residences. The City of Fresno maintains a park goal to provide five acres of city park space per 1,000 residents. To meet this park goal, the Project would require up to approximately 2.4 acres of park uses for the 480 residents. Because the Project does not meet this goal directly, the applicant would be required to pay the required park impact fees prior to building permit issuance. Furthermore, according to the Fresno Development Code section 15-1004.D, there are specific requirements that detail the parameters of private and communal open space requirements for properties within the Residential High Density zone district. These development policies will be a requirement as a condition of approval for the overall Project and the Project will be required to comply with these policies in order to secure building permits.

Demand for parks generated by the Project is within planned services levels of the City of Fresno Parks and Community Services Department and the applicant will pay any required impact fees at the time building permits are obtained.

In regard to the above described public services impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described public services impact analysis criteria.

### v. Other public facilities?

Development of the property requires compliance with grading and drainage standards of the City of Fresno. The Department of Public Utilities (DPU) has determined that adequate sanitary sewer and water capacity are available to serve the Project Site subject to implementation of the Fresno General Plan policies and the construction and installation of public facilities and infrastructure in accordance with DPU standards, specifications and policies. As mentioned in the Hydrology section, water infrastructure and service are provided by the City of Fresno. During project review, the Project will be required to propose water infrastructure connections to the nearest water main maintained by the City of Fresno. In addition, water mains will be extended within the Project Site to provide service to each parcel created; and, subject to payment of applicable water charges.

For sanitary sewer service, these infrastructure improvements and facilities include typical requirements for construction and extension of sanitary sewer mains and branches within the interior of the Project Site. The proposed Project will also be required to provide payment of sewer connection charges.

Implementation of the Fresno General Plan policies along with the implementation of the Water Resources Management Plan, would ensure drainage impacts are less than significant. Installation of these services with meters to the proposed buildings and payment of applicable Water Capacity Charges will provide an adequate, reliable, and sustainable water supply for the Project's urban domestic and public safety consumptive purposes.

According to the FEMA FIRM, only a small portion of the subject site is located outside the 200-year floodplain zone and within the area of minimal flood hazard. All conditions/development standards applied to the Project will reduce the probability of the subject site becoming effected by a storm event. The Project Site is mostly flat and the Project would not substantially alter the existing drainage pattern of the site or area. The Project Site does not have a stream or river. The Project would not result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. The storm drainage plan will be supported by engineering calculations to ensure that the Project does not 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.

In regard to the above described public services impact analysis criteria, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described public services impact analysis criteria.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XVI. 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? | | | X | |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | | | X | |

**DISCUSSION**

**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?**

Although the proposed Project does include uses that would increase the use of park and recreation facilities in the area, the proposed Project will not result in the physical deterioration of existing parks or recreational facilities. As noted previously, the Project would include open space areas for use by the residents throughout the Project Site in accordance with City standards. The open space area could function as a recreational amenity for the proposed residences, therefore, diminishing the reliance on outside recreation facilities. Impacts will be less than significant.

In accordance with Figure MT-2: Paths and Trails of the Fresno General Plan, a Class 1 Bicycle and Pedestrian trail will be required to be dedicated and improved on the north side of East Jensen Avenue along the frontage of the proposed project. The proposed bicycle and pedestrian trail will serve the nearby neighborhood and provide for an expanded non-motorized network. The proposed project will have a less than significant impact on the deterioration of the proposed recreational amenity.

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In conclusion, the Project will result in a less than significant impact concerning the above described recreation resources impact analysis criteria.

**b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?**

Demand for parks generated by the Project would be minimal and is within planned services levels of the City of Fresno Parks and Community Services Department. The applicant will pay any required impact fees at the time building permits are obtained or receive credits for construction as may be memorialized within a development agreement. Impacts will be less than significant.

As previously mentioned this initial study, a Class 1 Bicycle and Pedestrian trail will be required to be dedicated and improved on the north side of East Jensen Avenue along the frontage of the proposed project. The required trail will not have an adverse physical effect on the environment due to its design and location are consistent with Public Works standards and the Fresno General Plan.

In conclusion, the Project will result in a less than significant impact concerning the above described recreation resources impact analysis criteria.

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

Setting:

A Traffic Impact Analysis (Appendix D) was completed by JLB Traffic Engineering, Inc. (JLB) for the Project Site dated February 3, 2020. The existing peak hour turning movement volume counts and segment volume counts were conducted at the study intersections and segments in October-November 2019 and January 2020, while schools in the vicinity of the proposed Project were in sessions. The intersections include in the study are:

- Chestnut Avenue / Florence Avenue
- Maple Avenue / Grove Avenue
- Maple Avenue / Jensen Avenue
- Project Driveway 1 / Jensen Avenue (right-in, right out)
- Project Driveway 2 / Jensen Avenue (left-in, right-in and right-out)
- Project Driveway 3 / Jensen Avenue (right-in, right-out)
- Chestnut Avenue / Jensen Avenue
- Maple Avenue / Annadale Avenue
- Maple Avenue / North Avenue
- State Route 99 at Jensen Avenue Interchange

Chestnut Avenue is an existing north-south four-lane divided arterial in the vicinity of the proposed Project Site. In this area, Chestnut Avenue exists as a four-lane divided arterial between Ashlan Avenue and the State Route 180 interchange, a six-lane divided arterial between the State Route 180 interchange and Belmont Avenue, a four-lane divided arterial between Belmont Avenue and Central Avenue, a two-lane undivided arterial south of Central Avenue through the City of Fresno SOI. The City of Fresno 2035 General Plan Circulation Element designates Chestnut Avenue as four-lane divided arterial between Ashlan Avenue and North Avenue.

Florence Avenue is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project Site. In this area, Florence Avenue exists as a two-lane undivided local roadway east of Cedar Avenue through Chestnut Avenue. The City of Fresno 2035 General Plan Circulation Element designates Florence Avenue as local roadway between Cedar Avenue and Chestnut Avenue.

Maple Avenue is an existing north-south four-lane undivided collector adjacent to the proposed Project Site. In this area, Maple Avenue exists as a two-lane collector divided by a two-way left-turn lane between Dakota Avenue and Shields Avenue, a four-lane undivided collector between Shields Avenue and Normal Avenue, a two-lane collector divided by a two-way left-turn lane between Normal Avenue and Olive Avenue, a four-lane undivided collector between Olive Avenue and Edgar Avenue, and a three-lane undivided collector between Edgar Avenue and North Avenue. The City of Fresno 2035 General Plan Circulation Element designates Maple Avenue as a four-lane collector between Dakota Avenue and North Avenue.

Grove Avenue is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project Site. In this area, Grove Avenue exists as a two-lane undivided local roadway between Maple Avenue and Sierra Vista Avenue. The City of Fresno 2035 General Plan Circulation Element designates Grove Avenue as a local roadway between Maple Avenue and Sierra Vista Avenue.

Jensen Avenue is an existing east-west four-lane divided super arterial adjacent to the proposed Project Site. In this area, Jensen Avenue is a two-lane undivided arterial between Marks Avenue and Fig Avenue and a four-lane divided arterial east of Fig Avenue throughout the City of Fresno SOI. The City of Fresno 2035 General Plan Circulation Element designates Jensen Avenue as a four-lane divided arterial between Marks Avenue and the State Route 99 interchange, a four-lane divided super arterial between the State Route 99 interchange and Orange Avenue, and a six-lane divided super arterial between Orange Avenue and Highland Avenue.

Annadale Avenue is an east-west two-lane undivided local roadway in the vicinity of the proposed Project Site. In this area, Annadale Avenue exists a two-lane undivided local roadway between Cedar Avenue and Maple Avenue. The City of Fresno 2035 General Plan Circulation Element designates Maple Avenue as a two-lane local roadway between

Cedar Avenue and Maple Avenue.

North Avenue is an east-west two-lane undivided arterial in the vicinity of the proposed Project Site. In this area, North Avenue is a two-lane undivided arterial between Marks Avenue and the State Route 41 interchange, a four-lane arterial divided by a two-way left-turn lane between the State Route 41 interchange and Orange Avenue, a two-lane undivided arterial between Orange Avenue and Minnewawa Avenue, and a two-lane undivided local roadway between Minnewawa Avenue and Temperance Avenue. The City of Fresno 2035 General Plan Circulation Element designates North Avenue as a two-lane arterial between Marks Avenue and Fig Avenue, a four-lane arterial between Fig Avenue and Clovis Avenue, and a two-lane arterial between Clovis Avenue and Temperance Avenue.

<u>Project Access:</u>

Based on the latest Project Site plan, access to and from the Project Site will be from five proposed access points located along Maple Avenue and Jensen Avenue. Three proposed access points are located along the east side of Maple Avenue approximately 180, 400 and 575 feet north of Jensen Avenue. All access points along Maple Avenue are proposed as full access. The remaining two proposed access points are located along the north side of Jensen Avenue approximately 200 feet and 590 feet east of Maple Avenue. Driveways along Jensen Avenue will be right-in and right-out only with the exception of the driveway furthest from the intersection which will also allow left-turn in. Pursuant to the City of Fresno policy, super arterials, such as Jensen Avenue, allow for limited access points as approved by the City Traffic Engineer. The Project proposes to implement two access points from Jensen Avenue, including one three-quarter access point and one right-in, right-out access point.

During the preparation of this analysis, JLB staff worked with the site plan design team to provide recommendations to the placement of the project driveways. Early versions of the project site plan had the proposed driveway (left-in, right-in, right-out) along Jensen Avenue closer to Maple Avenue. However, based on the SimTraffic Queuing Reports prepared for the traffic impact analysis, JLB recommended that driveway be moved further east to the placement presented in the latest Project Site plan. Since the changes to the Project Site plan have been incorporated, JLB is in support of the location of the proposed driveways and types of access. According to Section 15-2018.b, the Project will be required to provide adequate visibility of a driveway crossing a street lot line. The City shall evaluate the Project’s landscaping and improvement plans in compliance with Section 15-0218.b for all driveway entrances to the Project site to ensure corner sight distance maintain appropriate visibility. .

Internally within the Project Site, it is recommended that a STOP sign for northbound traffic be installed as part of the Project at the northern terminus of the driveway aisle that serves Project Driveway 2. This should help improve traffic safety across this internal intersection while also reducing speeds.

Transit Services

Fresno Area Express (FAX) is the transit operator in the City of Fresno. At present, there is one (1) FAX transit route that operates adjacent to the proposed Project Site. FAX Route 41, which runs on Maple Avenue, operates at 30-minute intervals on weekdays and weekends. Its nearest stop to the Project Site is located along the west side of Maple Avenue approximately 150 feet north of Jensen Avenue. This route provides a direct connection to Manchester Transit Center, Duncan Polytechnic High School, Cedar Clinton Library, McLane High School, California Christian College, University of the Pacific, and Mosqueda Community Center. Retention of the existing and expansion of future transit routes is dependent on transit ridership demand and available funding.

Bikeways:

Currently, Class II Bike Lanes exist in the vicinity of the proposed Project Site along Chestnut Avenue and Maple Avenue. The City of Fresno 2017 Active Transportation Plan recommends that Class II Bike Lanes be implemented on: 1) Florence Avenue between Cedar Avenue and Chestnut Avenue, 2) Chestnut Avenue north of North Avenue, 3) Maple Avenue north of North Avenue, 4) Jensen Avenue through the City of Fresno SOI, 4) Annadale Avenue between Cedar Avenue and Maple Avenue, and 5) North Avenue through the City of Fresno SOI. Furthermore, the City of Fresno 2017 Active Transportation Plan recommends that Class I Bike Paths be implemented along: 1) the north side of Jensen Avenue between Golden State Boulevard and Highland Avenue and 2) the west side of Chestnut Avenue between Jensen Avenue and North Avenue. Therefore, it is recommended that the Project implement a Class II Bike Lane along its frontage to Maple Avenue and a Class I Bike Path along its frontage to Jensen Avenue.
In accordance with Figure MT-2: Paths and Trails of the Fresno General Plan, a Class I Bicycle and Pedestrian trail will be required to be dedicated and improved on the north side of Jensen Avenue along the frontage of the proposed Project.

Walkways:

Currently, walkways exist in the vicinity of the proposed Project Site along Florence Avenue, Chestnut Avenue, Maple Avenue and Grove Avenue. The City of Fresno 2017 Active Transportation Plan recommends that walkways be implemented on: 1) Florence Avenue between Cedar Avenue and Chestnut Avenue, 2) Chestnut Avenue north of North Avenue, 3) Maple Avenue north of North Avenue, 4) Grove Avenue between Maple Avenue and Sierra Vista Avenue, 5) Jensen Avenue through the City of Fresno SOI, 6) Annadale Avenue between Cedar Avenue and Maple Avenue, and 7) North Avenue west of Willow Avenue. The City of Fresno 2017 Active Transportation Plan identifies the area bound by Maple Avenue, Church Avenue, Sierra Vista Avenue and Grove Avenue as an underserved neighborhood and an area with large numbers of missing sidewalks. Therefore, it is recommended that the Project implement walkways per City of Fresno standards that are ADA compliant along its frontages to Maple Avenue and Jensen

Avenue.

**DISCUSSION**

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

The City's General Plan includes the objective, at MT-8, of providing transit options that serve existing and future concentrations of residences, employment, recreation and civic uses and are feasible, efficient safe, and minimize environmental impacts.

This objective incorporates several implementing policies, among them the relevant policy is MT-8-c, New Development Facilitating transit, which provides that the City is to continue to review development proposals in transportation corridors to ensure they are designed to facilitate transit, and to coordinate all projects that have residential or employment densities suitable for transit services so they are located along existing or planned transit corridors or that otherwise have the potential for transit orientation to FAX and to consider FAX's comments in decision making.

As noted above, there is a FAX transit route that operates adjacent to the proposed Project Site. FAX Route 41, which runs on Maple Avenue, operates at 30-minute intervals on weekdays and weekends. Its nearest stop to the Project Site is located along the west side of Maple Avenue approximately 150 feet north of Jensen Avenue. Based on these circumstance the Project would not conflict with relevant policies addressing transit systems.

The City's General Plan includes the objective, at MT-4, of establishing and maintaining a continuous, safe, and easily accessible bikeway system throughout the metropolitan area to reduce vehicle use, improve air quality and the quality of life, and provide public health benefits. The General Plans Figure MT-2 also illustrates conceptual alignments of existing and proposed path and trails, which includes a Class I Bicycle/Pedestrian Paths along Jensen Avenue in these environs. However, Figure MT-1 notes that the actual details of the proposed bike network is located in the Active Transportation Plan.

As noted above, the City of Fresno 2017 Active Transportation Plan recommends that a Class I Bike Path be implement along the north side of Jensen Avenue between Golden State Boulevard and Highland Avenue. The Project's design already includes a Class I Bike Path along its Jensen Avenue Frontage.

The City's General Plan includes the objective, at MT-5, of establishing a well-integrated network of pedestrian facilities to accommodate safe, convenient, practical and inviting travel by walking, including for those with physical mobility and vision impairments.

This objective incorporates several implementing policies, among them the relevant policy is MT-5-b, Sidewalk Requirements, which provides that the City is to assure access for pedestrians and people with disabilities in new residential developments per adopted city policies, consistent with the California Building Code and the Americans Disabilities Act. The Project's site plan incorporates sidewalks that are ADA compliant along its frontages to Maple Avenue and Jensen Avenue. Based on this circumstance the Project would not conflict with relevant policies addressing pedestrian circulation.

Regarding consistency with circulation elements concerning roadways, Maple Avenue is an existing north-south four-lane undivided collector adjacent to the proposed Project Site. Jensen Avenue is an existing east-west four-lane divided super arterial adjacent to the proposed Project Site. The design of the access to the Project from these adjacent roadways is consistent with applicable policies. Regarding the Project's transportation related impacts for roadways adopted in the General Plan, those matters, and the relevant analysis standards and implementation of assurances regarding compliance with such standards, are detailed below.

In conclusion, with mitigation measure TRANSPO-1, incorporated, the Project will result in a less than significant impact concerning the above described circulation standards impact analysis criteria.

*Additional Mitigation Measures (Project Specific)*

**TRANSPO-1:** Require installation of a Class II Bike Path along the Project's Maple Frontage.

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

Vehicle Miles Traveled:

Senate Bill (SB 743) requires that relevant CEQA analysis of transportation impacts be conducted using a metric known as vehicle miles traveled (VMT) instead of Levels of Service (LOS). VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto our roads, the project may cause a significant transportation impact. On June 25, 2020, the City adopted CEQA Guidelines for Vehicle Miles Traveled Thresholds, dated June 18, 2020, and effective on July 1, 2020.

The State CEQA Guidelines were amended to implement SB 743, by adding Section 15064.3. Among its provisions, Section 15064.3 confirms that, except with respect to transportation projects, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, LOS measures of impacts on traffic facilities is no longer a relevant CEQA criteria for transportation impacts.

CEQA Guidelines Section 15064.3(b)(4) states that "[a] lead agency has discretion to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate used to estimate vehicle miles traveled and any revision to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section."

On June 25, 2020, the City of Fresno adopted CEQA Guidelines for Vehicle Miles Traveled Thresholds pursuant to Senate Bill 743 to be effective of July 1, 2020. The thresholds described therein are referred to herein as the City of Fresno VMT Thresholds. The City of Fresno VMT Thresholds document was prepared and adopted consistent with the requirements of CEQA Guidelines Sections 15064.3 and 15064.7. The December 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) published by the Governor's Office of Planning and Research (OPR), was utilized as a reference and guidance document in the preparation of the Fresno VMT Thresholds.

The City of Fresno VMT Thresholds adopted a screening standard and criteria that can be used to screen out qualified projects that meet the adopted criteria from needing to prepare a detailed VMT analysis.

However, the City of Fresno VMT Thresholds Section 3.1 regarding Development Projects states that if a project constitutes a General Plan Amendment or a Rezone, none of the screening criteria may apply, and that the City must evaluate such projects on a case-by-case basis. Here the Project includes both a General Plan Amendment and a Rezone and does not meet the screening criteria. As such, a quantitative VMT analysis is required.

For projects that are not screened out, a quantitative analysis of VMT impacts must be prepared and compared against the adopted VMT thresholds of significance. The Fresno VMT Thresholds document includes thresholds of significance for development projects, transportation projects, and land use plans. These thresholds of significance were developed using the County of Fresno as the applicable region, and the required reduction of VMT (as adopted in the Fresno VMT Thresholds) corresponds to Fresno County's contribution to the statewide GHG emission reduction target. In order to reach the statewide GHG reduction target of 15%, Fresno County must reduce its GHG emissions by 13%. The method of reducing GHG by 13% is to reduce VMT by 13% as well.

The City's adopted thresholds for development projects correspond to the regional thresholds set by the Fresno Council of Governments (COG). As such, the adopted threshold of significance for residential and non-residential (except retail) development projects is a 13% reduction, which means that projects that generate VMT in excess of a

13% reduction from the existing regional VMT per capita or per employee would have a significant environmental impact. For retail projects, the adopted threshold is any net increase in VMT per employee compared to existing VMT per employee.

Quantitative assessments of the VMT generated by a development project are determined using the COG Activity Based Model (ABM), which is a tour-based model.

The City of Fresno VMT Thresholds state that for mixed use projects the VMT can be estimated based on each component of the project, independently, after taking credit for internal trip capture. It also confirms that mixed use projects must use the Fresno COG's Activity Based Model. The VMT per capita (for the residential component) and the total VMT (for the retail component) is then compared against the relevant threshold.

JLB requested from Fresno COG to run its ABM model to determine the Project's VMT for these land uses. Based on the Fresno COG VMT output the residential, non-retail commercial, and retail commercial are projected to yield less than significant impacts to VMT. Based on the ABM model output, the Project's VMT for the residential component was calculated to be 10.31 VMT per capita which is less than the City of Fresno maximum threshold of 14.01 VMT per capita. Similarly, the Fresno COG VMT output for the non-retail commercial component was calculated to be 21.06 VMT per employee which is less than the City of Fresno maximum threshold of 22.27 VMT per employee. On the other hand, the VMT threshold for retail commercial is no net increase in regional VMT by the Project when compared to the No Project. At present the Fresno County No Project Regional VMT is an average of 23,544,527, while the Fresno County with Project Regional VMT is 23,406,520. Therefore, the retail commercial component of the Project results in a Fresno County Regional VMT which is less than the Fresno County No Project Regional VMT. As a result, the residential, non-retail commercial, and retail commercial components will not have a significant impact to VMT.

In conclusion, the Project will result in a less than significant impact concerning consistency with CEQA Guidelines section 15064.3(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)?**

The design of the proposed development has been evaluated and determined to be consistent with respect to compliance with City of Fresno standards, specification and policies. The site plan appears to provide adequate circulation and access to each of the proposed structures/parcels. There should not be an issue with queuing at an access point. There is a Fast Food drive through proposed on the Project Site, however, it was oriented as to not induce an access issue to do queue of cars. The Project would not increase hazards due to a geometric design feature or incompatible use. This is *a less than significant impact*.

In conclusion, the Project will result in result in a less than significant impact concerning the above described transportation impact analysis criteria.

**d) Result in inadequate emergency access?**

The Project is not located near an airport; therefore, it will not change air traffic levels. The proposed internal streets will not create hazards or conflict with emergency access. The Project includes five points of vehicular access along to the site, two along Jensen Avenue and three along Maple Avenue. Rights-of-way improvements will allow for pedestrian access to the site via Jensen Avenue and Maple Avenue. These five accesses would be available in case of an emergency. Therefore, the Project would result in a *less than significant impact* associated with emergency access.

In conclusion, the Project will result in result in a less than significant impact concerning the above described transportation impact analysis criteria.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XVII. TRIBAL CULTURAL RESOURCES** – Would the project: | | | | |
| a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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: | | X | | |
| i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or, | | X | | |
| ii) A resource determined by the lead agency, in its discretion and supported by substantial evi-dence, to be significant pursuant to criteria set forth in subdivision (c) of PRC section 5024.1. In applying the criteria set forth in subdivision (c) of PRC section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | | X | | |

**DISCUSSION**

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

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

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.**

The State requires lead agencies to consider the potential effects of proposed projects and consult with California Native American tribes during the local planning process for the purpose of protecting Traditional Tribal Cultural Resources through the CEQA Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed Project. Such significant cultural resources are either sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe which is either on or eligible for inclusion in the California Historic Register or local historic register, or, the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a)(1-2)).

Additional information may also be available from the California Native American Heritage Commission's Sacred Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3(c) contains provisions specific to confidentiality.

Pursuant to AB 52, the Table Mountain Rancheria of California and Dumna Wo Wah Tribal Government were invited to consult under AB 52. The City of Fresno mailed notices of the proposed Project to each of these tribes on July 1, 2020 which included the required 30-day time period for tribes to request consultation, which ended on July 31, 2020. To date, no tribal group has responded to the City's notices for this Project.

Please note: As detailed by Executive Order N-54-20, signed April 22,2020, deadlines for filing, noticing, and posting of CEQA documents with county clerk offices have been suspended for 60 days. Additionally, the Executive Order suspends for 60 days certain tribal consultation timeframes required by AB 52.

The site is currently vacant with the exception a storm drain basin located in the northern portion of the Project. If any artifacts are inadvertently discovered during ground-disturbing activities, existing federal, State, and local laws and regulations as well as the mitigation measures of the Fresno General Plan MEIR will require construction activities to cease until such artifacts are properly examined and determined not to be of significance by a qualified cultural resources professional.

In regard to the above described Tribal cultural impact evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, with MEIR Cultural Resource Mitigation measures CUL-1 through CUL-3 mitigation incorporated, the Project will result in a less than significant impact concerning the above described geologic and soils impact analysis criteria.

*Mitigation Measures identified in MEIR*

**CUL-1:** If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines and the City's Historic Preservation Ordinance.

If the resources are determined to be unique historical resources as defined under Section 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these. Any historical artifacts recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-germ preservation to allow future scientific study.

**CUL-2:** Subsequent to a preliminary City review of the Project grading plans, if there is evidence that a Project will include excavation or construction activities within previously undisturbed soils, a field survey and literature search for prehistoric archaeological resources shall be conducted. The following procedures shall be followed.

If prehistoric resources are not found during either the field survey or literature search, excavation and/or construction activities can commence. In the event that buried prehistoric archaeological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with CEQA Guidelines Section 15064.5.

If the resources are determined to be unique prehistoric archaeological resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any prehistoric archaeological artifacts recovered as a result of mitigation shall be provided to a City approved institution or person who is capable of pro viding long term preservation to allow future scientific study.

If prehistoric resources are found during the field survey or literature review, the resources shall be inventoried using appropriate State record forms and submit the forms to the Southern San Joaquin Valley Information Center. The resources shall be evaluated for significance. If the resources are found to be significant, measures shall be identified by the qualified archaeologist. Similar to above, appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

In addition, appropriate mitigation for excavation and construction activities in the vicinity of the resources found during the field survey or literature review shall include an archaeological monitor. The monitoring period shall be determined by the qualified archaeologist. If additional prehistoric archaeological resources are found during excavation and/or construction activities, the procedure identified above for the discovery of unknown resources shall be followed.

**CUL-3:** In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains.

Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.

| ENVIRONMENTAL ISSUES | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| **XIX. UTILITIES AND SERVICE SYSTEMS** – Would the project: | | | | |
| a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effect? | | | X | |
| b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | | | X | |
| c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | | | X | |
| d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | | | X | |
| e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | | | X | |

## DISCUSSION

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

The proposed Project will require construction of new infrastructure to connect to the existing utility infrastructure. This will include water, wastewater, and storm water drainage connections. Additionally, the Project will include connections for electric power, natural gas, and telecommunications facilities. The review of proposed connections and the existing capacity will be under the review of the corresponding department within the City of Fresno and project-specific requirements will be administered. The installation of this infrastructure will not require any major upsizing or other offsite construction activities that would cause a significant impact due to the fact that the City's General Plan has allocated the resources in order to serve the Project Site. The General Plan Amendment intends to only reconfigure the existing land uses. The new infrastructure would be connected to existing infrastructure that is adjacent to the Project Site.

Impacts to storm drainage facilities have been previously discussed under the Hydrology and Water Quality section included within this analysis herein above. While the proposed Project will result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of such facilities will not cause significant environmental effects.

The proposed Project would be subject to the payment of any applicable connection charges and/or fees and extension of services in a manner which is compliant with the Department of Public Utilities standards, specifications, and policies.

Sanitary sewer, once developed will be incorporated into the City of Fresno, water delivery and sewer collection/treatment services are also subject to payment of applicable connection charges and/or fees; compliance with the Department of Public Utilities standards, specifications, and policies; the rules and regulations of the California Public Utilities Commission and California Health Services; and, implementation of the City-wide program for the completion of incremental expansions to facilities for planned water supply, treatment, and storage.

In regard to the above described utilities and service system evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described utilities and service system impact analysis criteria.

**b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?**

The City of Fresno Department of Public Utilities, Water Division reviewed the proposed Project. As discussed under the Hydrology and Water Quality section of this Initial Study, the City has determined that adequate water supply exists to serve the proposed Project. During, the permit review process, the Project will be required to show the proposed water infrastructure connections to the nearest City owned water main. In addition, water mains will be extended within the proposed lot to provide service to each parcel created; and, subject to payment of applicable water fees. The applicant will be required to comply with all requirements of the City of Fresno Department of Public Utilities to reduce the Project's water impacts *less than significant*.

In regard to the above described utilities and service system evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described utilities and service system impact analysis criteria.

**c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

The City of Fresno acts as the Regional Sewer Agency and is responsible for operating the Fresno/Clovis Regional Wastewater Reclamation Facility (RWRF) and the North Fresno Wastewater Treatment Facility (NFWTF). The Regional Facility provides wastewater treatment for a service area that includes most of the Cities of Fresno and Clovis, and some unincorporated areas of Fresno County. According to the City's General Plan MEIR, the Regional Facility received and treated approximately 72,302 acre-feet (AF) of wastewater during 2011, representing an annual average daily flow of approximately 64.5 million gallons per day (MGD). The quantity of wastewater received and treated by the Regional Facility has been declining since 2006, when it peaked at a total of approximately 80,801 AF, representing an annual average daily flow of approximately 72.1 MGD. The permitted wastewater treatment capacity of the Regional Facility is currently 80.0 MGD as an annual monthly average flow, and 88.0 MGD as a maximum monthly average flow. The City is currently evaluating upgrades and modifications to the existing Regional Facility that may result in a capacity rating increase of 15.0 MGD. The City of Clovis owns 9.3 MGD of wastewater treatment capacity at the Regional Facility, and the City of Fresno owns the remaining capacity.

The NFWTF was constructed in late 2006 to provide wastewater treatment service for residential and commercial development in the surrounding area of north Fresno. The permitted capacity of the NFWRF is 0.71 MGD, as an average monthly flow, and 1.07 MGD, as a maximum daily flow. The City's master plan for the NFWRF calls for ultimate expansion to an average monthly flow capacity of 1.07 MGD upon full development of the NFWRF service area.

The General Plan MEIR concludes that impacts associated with wastewater treatment facilities and capacity resulting from buildout of the General Plan, including the proposed Project Site, would be *less than significant* with implementation of Mitigation Measures USS-1 (which requires development and implementation of a wastewater master plan update) and USS-2 (which requires evaluation of the wastewater system and construction of expansions at the Regional Facility and NFWRF).

The City of Fresno Department of Public Utilities has reviewed the Project and determined that sanitary sewer facilities are available to provide service to the site, subject to the required conditions of approval. The conditions of approval include payment of the applicable sanitary sewer fees, which would eventually be used to provide funding for the improvements at the RWRF and NFWTF in order to expand capacity (as required by Mitigation Measure USS-2 of the MEIR). The proposed Project will not result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments. Furthermore, that the Project is proposing a reduction of the light industrial land use, which is on average more intensive of a land use in comparison to the other land uses on the Project Site, when regarding the consumption of services. This will result in an overall reduction in services required for the site, that has been previously incorporated in the analysis of the City's General Plan MEIR. As such, the Project would generate less wastewater than was anticipated for the site by the MEIR.

In regard to the above described utilities and service system evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described utilities and service system impact analysis criteria.

**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?**

The City of Fresno Department of Public Utilities, Solid Waste Division has reviewed the Project for compliance with any federal, state, and local management and reduction statutes and regulations related to solid waste. According to the City's General Plan MEIR, garbage disposed of in the City of Fresno is taken to Cedar Avenue Recycling and Transfer Station. Once trash has been off-loaded at the transfer station, it is sorted and non-recyclable solid waste is loaded onto large trucks and taken to the American Avenue Landfill located approximately six miles southwest of Kerman. American Avenue Landfill is owned and operated by Fresno County and began operations in 1992 for both public and commercial solid waste haulers. The American Avenue Landfill is a sanitary landfill, meaning that it is a disposal site for non-hazardous solid waste spread in layers, compacted to the smallest practical volume, and covered by material applied at the end of each operating day.

The American Avenue Landfill (i.e. American Avenue Disposal Site 10-AA-0009) has a maximum permitted capacity of 32,700,000 cubic yards and a remaining capacity of 29,358,535 cubic yards, with an estimated closure date of August 31, 2031. The maximum permitted throughput is 2,200 tons per day. Other landfills within the County of Fresno include the Clovis Landfill with a maximum remaining permitted capacity of 7,740,000 cubic yards, a maximum permitted throughput of 2,000 tons per day, and an estimated closure date of 2047. There is also the Coalinga Landfill with a maximum remaining capacity of 1,930,062 cubic yards, a maximum permitted throughput of 200 tons per day, and an estimated closure date of 2029.

The following chart within the City's General Plan MEIR, illustrates the estimated solid waste generation by specific land uses, thusly, estimating the capacity at plan buildout.

**Table 5.15-3**
**Estimated Waste Generation**

| Land use | Existing Development units or msf | Buildout Development under General Plan and Development Code Update or msf | Incremental Increase units or msf | Solid Waste Generation Rate | Estimated Existing Solid Waste Generated | Estimated Buildout Solid Waste Generated under General Plan and Development Code Update | Estimated Incremental Increase in Solid Waste Generated |
|---|---|---|---|---|---|---|---|
| Single Family Residential | 118,897 units | 179,523 units | 60,626 units | 10 lbs per/unit/day | 1,188,970 lbs/day (595 tons/day) | 1,795,230 lbs/day (898 tons/day) | 606,260 lbs/day (303 tons/day) |
| Multiple-family Residential | 67,943 units | 152,481 units | 84,538 units | 7lbs/unit/day | 475,601 lbs/day. (238 tons/day) | 1,067,367 lbs/day (534 tons/day) | 591,766 lbs/day (296 tons/day) |
| Commercial/Office/Public Facility | 66.4 msf | 129.7 msf | 63.6 msf | 6 lbs/1,000 sq ft | 398,400 lbs/day (199 tons/day) | 778,200 lbs/day (389 tons/day) | 379,800 lbs/day (190 tons/day) |
| Mixed Use | 0.1 msf | 20.9 msf | 20.8 msf | 6 lbs/1,000 sq ft | 600 lbs/day (1 ton/day) | 125,400 lbs/day (63 tons/day) | 124,800 lbs/day (62 tons/day) |
| Industrial | 72.8 msf | 113.3 msf | 40.5 msf | 6 lbs/1,000 sq ft | 436,800 lbs/day (218 tons/day) | 679,800 lbs/day (340 tons/day) | 243,000 lbs/day (122 tons/day) |
| **Total** | | | | | **1,251 tons per day** | **2,224 tons per day** | **973 tons per day** |

Source: City of Fresno General Plan MEIR Utilities Service System Section

The following table depicts the proposed uses of the project site and the estimated solid waste that will be generated.

**Table 19-3**
**Project Estimated Solid Waste Generation**

| Proposed Uses | Square footage/Dwelling Units | Estimated Solid Waste Generation |
|---|---|---|
| Day Care | 4,000 sqft | 24 lbs per day |
| Four Story Multi-Family Building | 150 dwelling units | 1,050 lbs per day |
| Office Space | 5,000 sqft | 30 lbs per day |
| Service Station | 4,000 sqft | 24 lbs per day |
| Car Wash | N/A | N/A |
| Fast Food | 5,000 sqft | 30 lbs per day |
| Retail(C) | 12,000 sqft | 72 lbs per day |
| Retail (C1) | 3,000 sqft | 18 lbs per day |
| Retail (D2) | 4,000 sqft | 24 lbs per day |
| Bank (D1) | 6,000 sqft | 36 lbs per day |
| Retail (E) | 8,470 sqft | 51 lbs per day |
| Retail (I) | 5,500 sqft | 33 lbs per day |
| Coffee Shop | 2,000 sqft | 12 lbs per day |
| Medical Office Building | 11,450 sqft | 69 lbs per day |
| **Total** | | **1,473 lbs per day or 0.73 tons per day** |

Using the solid waste generation rates included in the City's General Plan MEIR, the proposed Project will generate 1,473 pounds of waste per day (or 269 tons per year). The Project Site will be serviced by the solid waste division, and the solid waste generated by the Project would be sent to the American Avenue Landfill. As noted above, the estimated closure date of the American Avenue Landfill is 2031. Additional capacity also exists at the Clovis Landfill and Coalinga Landfill. The 330 tons per year would not result in exceedance of the local capacity infrastructure. Therefore, the Project will comply with any statutes and regulations related to solid waste.

In regard to the above described utilities and service system evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described utilities and service system impact analysis criteria.

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

Setting

There are no State Responsibility Areas (SRAs) within the vicinity of the Project Site. The Project Site is not categorized as a "Very High" Fire Hazard Severity Zone (FHSZ) by CalFire. Although this CEQA topic only applies to areas within an SRA or Very High FHSZ, out of an abundance of caution, these checklist questions are analyzed below.

**DISCUSSION**

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

The Project Site will connect to an existing network of City streets. The proposed circulation improvements include six vehicle access points; all of which would be available during an emergency. The Project would not impair implementation of or physically interfere with 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?**

The risk of wildfire is related to a variety of parameters, including fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). Steep slopes contribute to fire hazard by intensifying the effects of wind and making fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. The Project Site is located in an area that is predominately urban, which is not considered at a significant risk of wildlife.

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?**

The Project includes development of infrastructure (water, sewer, and storm drainage) required to support the proposed industrial, commercial, and industrial uses. The Project Site is surrounded by existing urban development. Also, dry utilities are already located on the Project Site situated on power poles, the utilities bisect the property West to East. As a part of the development requirements, these utilities will be expected to be undergrounded. The Project would not require the installation or maintenance of infrastructure that may exacerbate fire risk.

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?**

The proposed Project would require the installation of storm drainage infrastructure to ensure that storm waters properly drain from the Project Site and does not result in downstream flooding or major drainage changes. A storm drainage plan would be designed and engineered to ensure proper construction of storm drainage infrastructure to control runoff and prevent flooding, erosion, and sedimentation.

Runoff from the Project Site is vacant; therefore, no grading has occurred. As a part of the development review process, a grading plan will be reviewed in order to determine the best scenario for site drainage. Presumably, the site will drain from the northeast onto facilities located in the S. Maple Avenue and E. Jensen Avenue rights-of-way. Any further storm drain requirements will be processed by the Fresno Metropolitan Flood Control District and constructed per the District's standards. Additionally, the majority of the Project Site is located within FEMA Zone X (.02 percent annual chance flood hazard) and the remainder FEMA Zone X (area of minimal flood hazard), indicating that the site is located not within a 100-year flood hazard zone. Further, because the site is essentially flat and located in an existing urbanized area of the City, downstream landslides would not occur.

Landslides include rockfalls, deep slope failure, and shallow slope failure. Factors such as the geological conditions, drainage, slope, vegetation, and others directly affect the potential for landslides. One of the most common causes of landslides is construction activity that is associated with road building (i.e. cut and fill). The Project Site is relatively flat; therefore, the potential for a landslide in the Project Site is essentially non-existent.

In conclusion, the Project will result in a less than significant impact concerning the above described wildfire risk impact analysis criteria.

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

**DISCUSSION**

**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 an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?**

The proposed Project is considered to be proposed at a size and scope which is neither a direct or indirect detriment to the quality of the environment through reductions in habitat, populations, or examples of local history (through either individual or cumulative impacts).

The proposed Project does not have the potential to degrade the quality of the environment or reduce the habitat of wildlife species and will not threaten plant communities or endanger any floral or faunal species. Furthermore, the Project has no potential to eliminate important examples of major periods in history.

In conclusion, the Project will result in a less than significant impact concerning the above described Mandatory Findings of Significance impact analysis criteria.

Impacts that the Project may cause have been analyzed and deemed *less than significant with the inclusion of mitigation measures*.

**b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past project s, the effects of other current projects, and the effects of probable future projects.)**

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

The Project is consistent with applicable environmental policies and mitigation measures are required in several impact areas to reduce any potential significant impacts to less than significant. Additionally, due to the planned buildout of the area and existing and future land constraints, the General Plan anticipates that future development will increase the density within adjacent areas. Development is planned to occur in the immediate area projected by the City's General Plan and analyzed in the General Plan EIR. For the reasons stated here and in the Initial Study, it has been determined that this Project does not have cumulatively considerable impacts.

In summary, given the mitigation measures required of the proposed Project and the analysis detailed in the preceding Initial Study, the proposed Project:

- Does not have environmental impacts which will cause substantial adverse effects on human beings, either directly nor indirectly.
- Does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish/wildlife or native plant species (or cause their population to drop below self-sustaining levels), does not threaten to eliminate a native plant or animal community, and does not

threaten or restrict the range of a rare or endangered plant or animal.

- Does not eliminate important examples of elements of California history or prehistory.
- Does not have impacts which would be cumulatively considerable even though individually limited.

In regard to the above described Mandatory Findings of Significance evaluation standards, no substantial changes have occurred with respect to the circumstances under which the MEIR was certified. Further, there is no new information that was not known and could not have been known at the time the MEIR was certified, relevant to such circumstances.

In conclusion, the Project will result in a less than significant impact concerning the above described Mandatory Findings of Significance impact analysis criteria.

# Appendix A
# Air Quality and Greenhouse Gas Impact Assessment

# BDM Builders Mixed-Use Development

## Air Quality & Greenhouse Gas Impact Assessment
## May 2020


**Prepared by:**
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**BDM Builders Mixed-Use Development**
**Air Quality & Greenhouse Gas Impact Assessment**

## Study Team


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# Executive Summary

This Air Quality & Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts that may result from the proposed BDM Builders Mixed-Use Development (Project) located on the northeast corner of Maple Avenue and Jensen Avenue in the City of Fresno. The Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. The Project will undergo a General Plan Amendment with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3).

The City of Fresno is located in one of the most polluted air basins in the country – 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 Fresno 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 (tons/year)

| Summary Report | CO | $NO_X$ | ROG | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ | CO2e |
|---|---|---|---|---|---|---|---|
| Project Site Construction Emissions Per Year | 4.09 | 4.69 | 2.43 | 0.01 | 0.64 | 0.36 | 759.20 |
| 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 Emissions Model

## Long-Term Emissions

Long-Term emissions from the project are generated by mobile source (vehicle) emissions from the Project site and area sources such as water heaters and 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 applicable SJVAPCD emission thresholds for criteria pollutants with the exception of emissions related to NOx. Operational emissions for the Project exceed the SJVAPCD's NOx threshold by 14.64 tons per year. A vast majority of the NOx Emissions are generated by mobile sources.

## Table E-2
### Project Operational Emissions (tons/year)

| Summary Report | CO | $NO_X$ | ROG | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ | CO2e |
|---|---|---|---|---|---|---|---|
| Project Operational Emissions Per Year | 15.62 | 24.64 | 3.14 | 0.08 | 3.46 | 1.00 | 8711.84 |
| SJVAPCD Level of Significance | 100 | 10 | 10 | 27 | 15 | 15 | None |
| Does the Project Exceed Standard? | No | Yes | No | No | No | No | No |

Source: CalEEMod Emissions Model

### 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 proposed Project will not generate odorous emissions given the nature or characteristics of the development 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. Table 5 includes Food Processing Facilities, which is a type of food service establishment that is a commercial operation that processes food for human consumption. Fiore Di Pasta is located to the east, within 1 mile of the proposed Project. Fiore Di Pasta manufactures quality pasta products and produces high quality, custom fresh/frozen pastas, sauces, entrees, and organic food products. Given the presence of the residential uses located directly north of the Fiore Di Pasta site, it is not anticipated that the site would generate odorous emissions that would impact the proposed Project.

### 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

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 Fresno COG region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. Fresno COG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Fresno 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).

The City of Fresno GHG Plan, adopted December 2014, is a comprehensive municipal and community strategy to reduce GHG emissions within the City of Fresno and is consistent with the goals and strategies outlined in CARB regulations. As noted in the GHG Plan, the Project's compliance with applicable City of Fresno General Plan policies and GHG Plan strategies would result in less than significant impacts for greenhouse gas emissions. The GHG Plan identifies numerous strategies needed to achieve reduction targets for 2020 and beyond. Those strategies are categorized as follows:

- Land Use and Transportation
- Transportation Facilities Strategies
- Transportation Demand Strategies
- Energy Conservation Strategies for New and Existing Buildings
- Waste Diversion and Recycling and Energy Recovery
- Strategies for Existing Development
- Municipal Strategies

The GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3), it should be noted that the proposed land uses on the Project site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one (1) Gas Station/Carwash, one (1) bank, and 4,000+ dwelling units located within 1.5 miles of the Project site. As noted previously, the Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Of the uses proposed on the Project site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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 approximately 13% 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 | 8,737.14 MT/yr |

Source: CalEEMod Emissions Model

## 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. 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. Fresno COG 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 Fresno's General Plan, which was adopted December 18, 2014. While the Project will undergo a GPA with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3), it should be noted that the proposed land uses on the Project site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one (1) Gas Station/Carwash, one (1) bank, and 4,000+ dwelling units located within 1.5 miles of the Project site. As noted previously, the Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Of the uses proposed on the Project site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue. 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?

Fresno County is nonattainment for Ozone (1 hour and 8 hour) and PM10 (State standards) and PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plan, 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 will not conflict with or obstruct implementation of any air quality plans. Therefore, the Project will not conflict with or obstruct implementation of the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Results of the CALINE analysis (Section 3.3.2) show that the intersections of Maple Avenue and North Avenue are not expected to generate CO concentrations that would exceed the Federal or State 1-hour and 8-hour standards. The Project will not 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. Moreover, the Project will not result in Project-specific or site-specific significant adverse impacts from the net increase of any criteria pollutant within the Project study area. Accordingly, no mitigation measures are 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 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 recommended buffer distances. 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. 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 applicable SJVAPCD emission thresholds for criteria pollutants with the exception of emissions related to NOx. Operational emissions for the Project exceed the SJVAPCD's NOx threshold by 14.64 tons per year. A vast majority of the NOx Emissions are generated by mobile sources.

**Mitigation Measure AQ-1: Comply with SJVAPCD's Indirect Source Review Rule (Rule 9510)**
Operation of the proposed project shall comply with SJVAPCD's ISR rule (Rule 9510). Measures that may be implemented to reduce NOx operational emissions may include, but are not limited to, the following:

- Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.
- Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50% tree coverage within 10 years of construction using low ROG emitting, low maintenance native drought-resistant trees.
- Plant drought tolerant native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer.
- Utilize high-efficiency gas or solar water heaters, beyond that required by current building codes.
- Install low water consumption landscape. Use native plants that do not require watering after they are well established or minimal watering during the summer months and are low ROG

emitting.

- Install parking spaces for alternatively fueled vehicles, beyond that required by current building codes.
- Use low-VOC content paints during construction and long-term facility maintenance. To the extent possible construction materials that are prefinished or that do not require the application of architectural coatings should be used.
- Install energy-saving systems in rooms that reduce energy usage associated with HVAC systems and appliances when rooms are not occupied, except where such systems would pose a safety or health concern.
- Provide a pedestrian access network that internally links all uses and connects all existing or planned external streets and pedestrian facilities contiguous with the project site.
- Provide on-site bicycle parking beyond those required by current building standards and related facilities to support long-term use (lockers, or a locked room with standard racks and access limited to bicyclists only).
- Implement traffic calming improvements as appropriate (e.g., marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, median islands, mini-circles, tight corner radii, etc.)

**<u>Mitigation Measure AQ-2:</u> Implement a Voluntary Emissions Reduction Agreement (VERA) with the SJVAPCD to Reduce Operational Emissions of ROG, NOX, and PM10**
A VERA shall be entered into with the SJVAPCD to reduce operational emissions NOx to less than 10 tons/year. Operational emissions of NOx shall be reduced in excess of the reductions required per compliance with SJVAPCD's ISR Rule (Refer to Mitigation Measure AQ-1). Emission reductions may be achieved by use of newer, low-emission equipment, implementation of on-site or off-site mitigation, and/or the funding of offsite mitigation, through participation in the SJVAPCD's off-site mitigation program. The VERA shall be reviewed and approved by the SJVAPCD prior to issuance of construction/grading permits by the City of Fresno. Documentation confirming compliance with the VERA shall be submitted to the City of Fresno Planning Department prior to issuance of final discretionary approval. Development and implementation of the VERA shall be fully funded by the Project. With approval by SJVAPCD, the VERA may also be used to demonstrate compliance with emission reductions required by SJVAPCD's ISR Rule (Rule 9510).

**<u>Level of Significance after Mitigation</u>**

With implementation of Mitigation Measure AQ-1 and AQ-2, Project operational emissions of NOx would be reduced below the SJVAPCD's significance thresholds. With mitigation, this impact would be considered less than significant.

✓ Result in other emissions such as those leading to odors adversely affecting a substantial number of people?

The proposed Project will not generate odorous emissions given the nature or characteristics of the development 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. Odorous emissions can be generated by Food Processing Facilities, which is a type of food service establishment that is a commercial operation that processes food for human consumption. Fiore Di Pasta is located to the east, within 1 mile of the proposed Project. Fiore Di Pasta manufactures quality pasta products and produces high quality, custom fresh/frozen pastas, sauces, entrees, and organic food products. Given the presence of the residential uses located directly north of the Fiore Di Pasta site, it is not anticipated that the site would generate odorous emissions that would impact the proposed 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 GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno, it should be noted that the proposed land uses on the Project site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one (1) Gas Station/Carwash, one (1) bank, and 4,000+ dwelling units located within 1.5 miles of the Project site. As noted previously, the Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Of the uses proposed on the Project site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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 approximately 13% less than the threshold identified by the SCAQMD.

Based on the assessment above, the Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, any impacts would be less than significant. 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?

The City of Fresno GHG Plan, adopted December 2014, is a comprehensive municipal and community strategy to reduce GHG emissions within the City of Fresno and is consistent with the goals and strategies outlined in CARB regulations. As noted in the GHG Plan, the Project's compliance with applicable City of Fresno General Plan policies and GHG Plan strategies would result in less than significant impacts for greenhouse gas emissions. The GHG Plan identifies numerous strategies needed to achieve reduction targets for 2020 and beyond. Those strategies are categorized as follows:

- Land Use and Transportation
- Transportation Facilities Strategies
- Transportation Demand Strategies
- Energy Conservation Strategies for New and Existing Buildings
- Waste Diversion and Recycling and Energy Recovery
- Strategies for Existing Development
- Municipal Strategies

The GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno, it should be noted that the proposed land uses on the Project site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one (1) Gas Station/Carwash, one (1) bank, and 4,000+ dwelling units located within 1.5 miles of the Project site. As noted previously, the Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Of the uses proposed on the Project site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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 further the achievement of City of Fresno'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 & Greenhouse Gas Impact Assessment has been prepared for the purpose of identifying potential project-specific or site-specific air quality impacts that may result from the proposed BDM Builders Mixed-Use Development (Project) located on the northeast corner of Maple Avenue and Jensen Avenue in the City of Fresno. The Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. The Project will undergo a General Plan Amendment with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3).

The Project lies within the central portion of the San Joaquin Valley, in the City of Fresno. Figures 1 and 2 show the location of the Project along with major roadways and highways. Site access will be provided at three (3) driveways along Maple Avenue and three (3) driveways along Jensen Avenue.

The City of Fresno is located in one of the most polluted air basins in the country – 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 Fresno 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 Fresno 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.

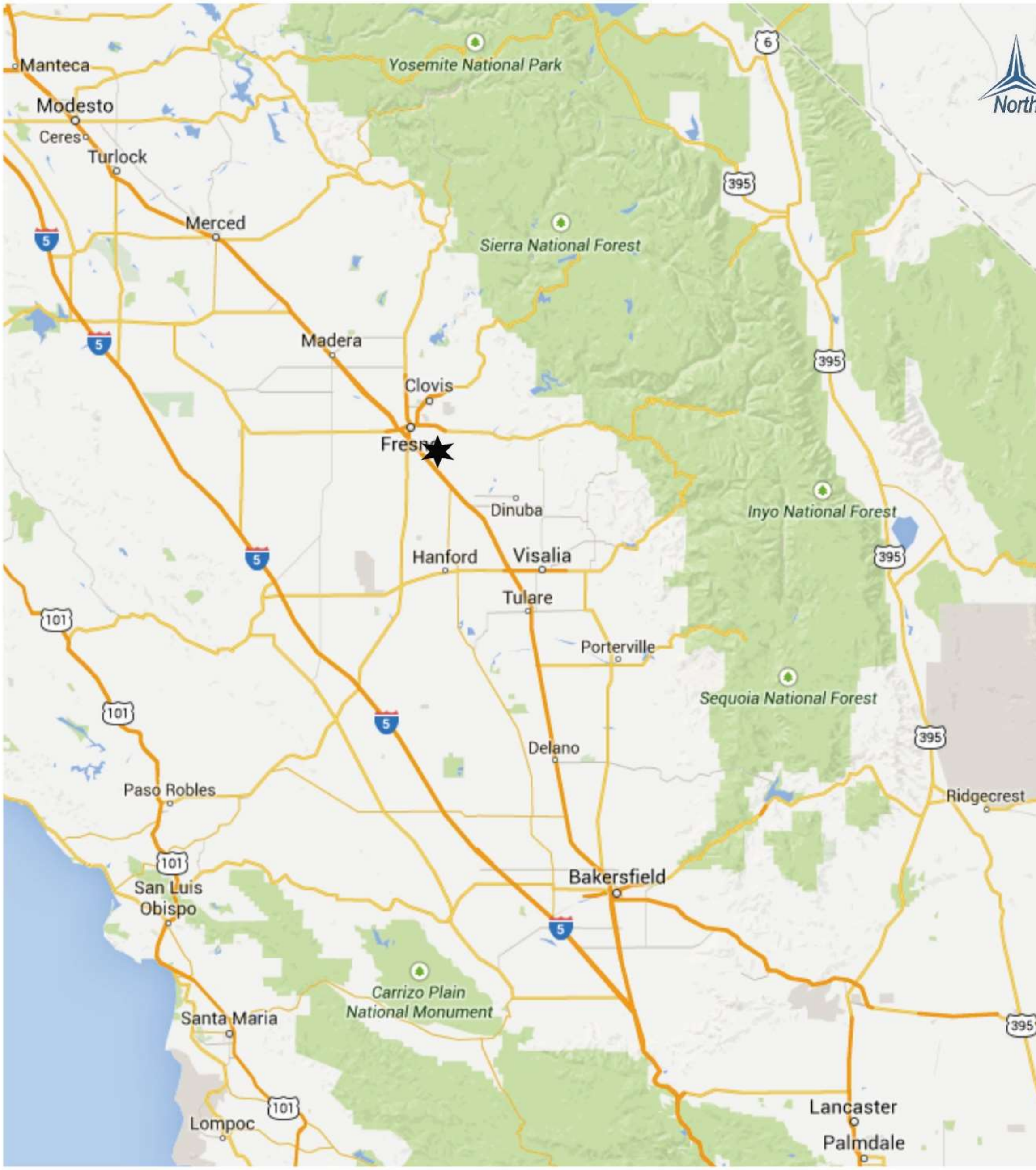
CAA Section 176(c) (42 U.S.C. 7506(c)) and EPA transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and Transportation Improvement Program (TIP) be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the Metropolitan planning 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. The previous ozone standard was set in 2010 at 0.075 ppm.

The City of Fresno is located in a nonattainment area for the 8-hour ozone standard, 1997, 2006 and 2012 PM2.5 standards, and has a maintenance plan for PM10 standard.

**BDM Builders Mixed-Use Development**
**Regional Location**

**Figure 1**

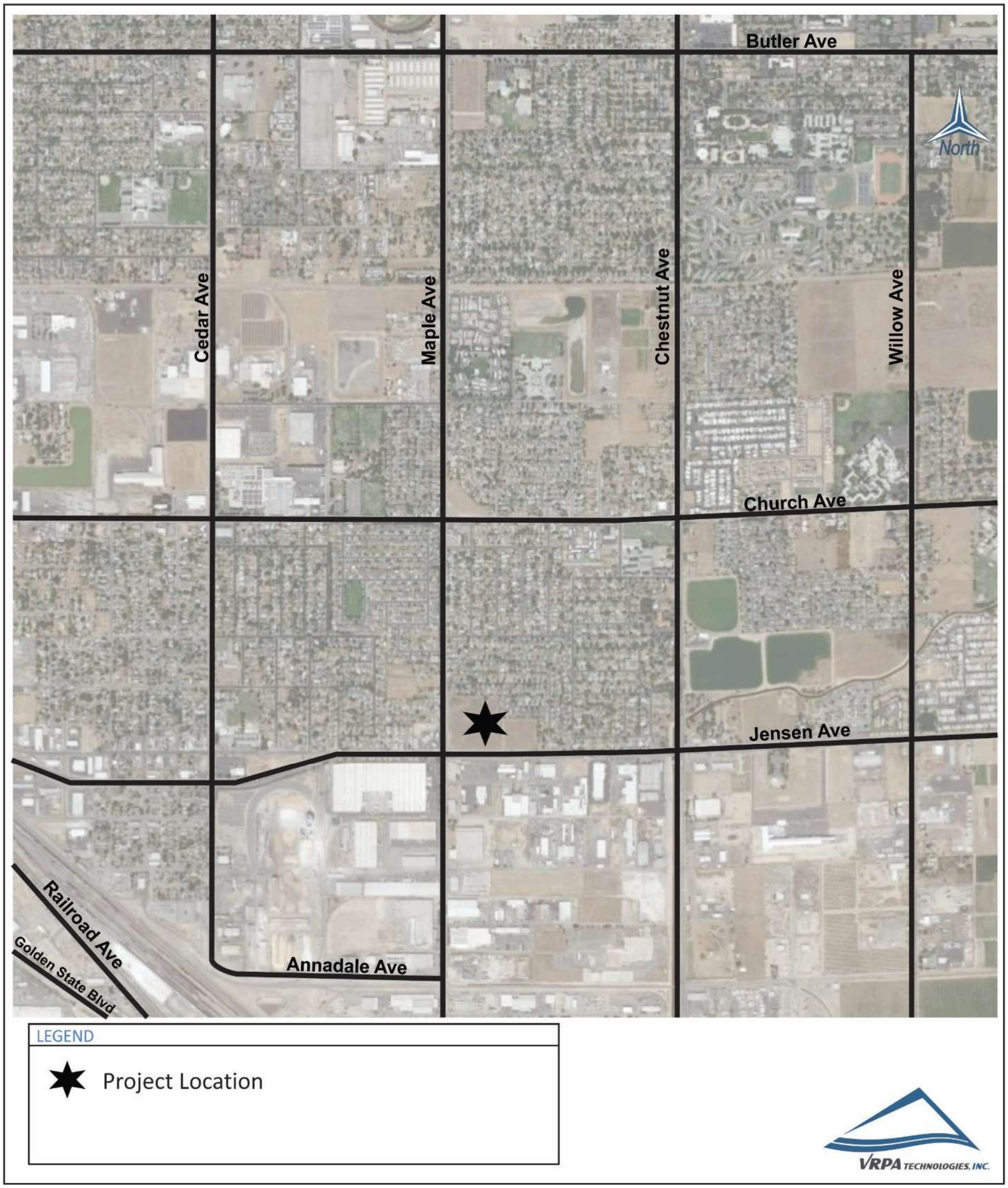



**LEGEND**

★ Project Location

**BDM Builders Mixed-Use Development**
**Project Location**

**Figure 2**



### 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 Fresno Council of Governments (Fresno COG) 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.

CARB, in consultation with MPOs, has provided each affected region with reduction targets for Greenhouse Gases (GHGs) emitted by passenger cars and light trucks in the region for the years 2020 and 2035. For the Fresno Council of Governments (Fresno COG) region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. Fresno COG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Fresno County region would achieve the prescribed emissions targets. CARB Executive Order G-19-092 (October 2019) accepts FCOG's determination that the SCS adopted by the FCOG Board of Directors on July 26, 2018, would achieve the 2020 and 2035 GHG emissions reduction targets established by CARB when implemented.

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.

Fresno County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Figure 3. In addition to Fresno County, the SJVAB includes Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare 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.

- ✓ **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:

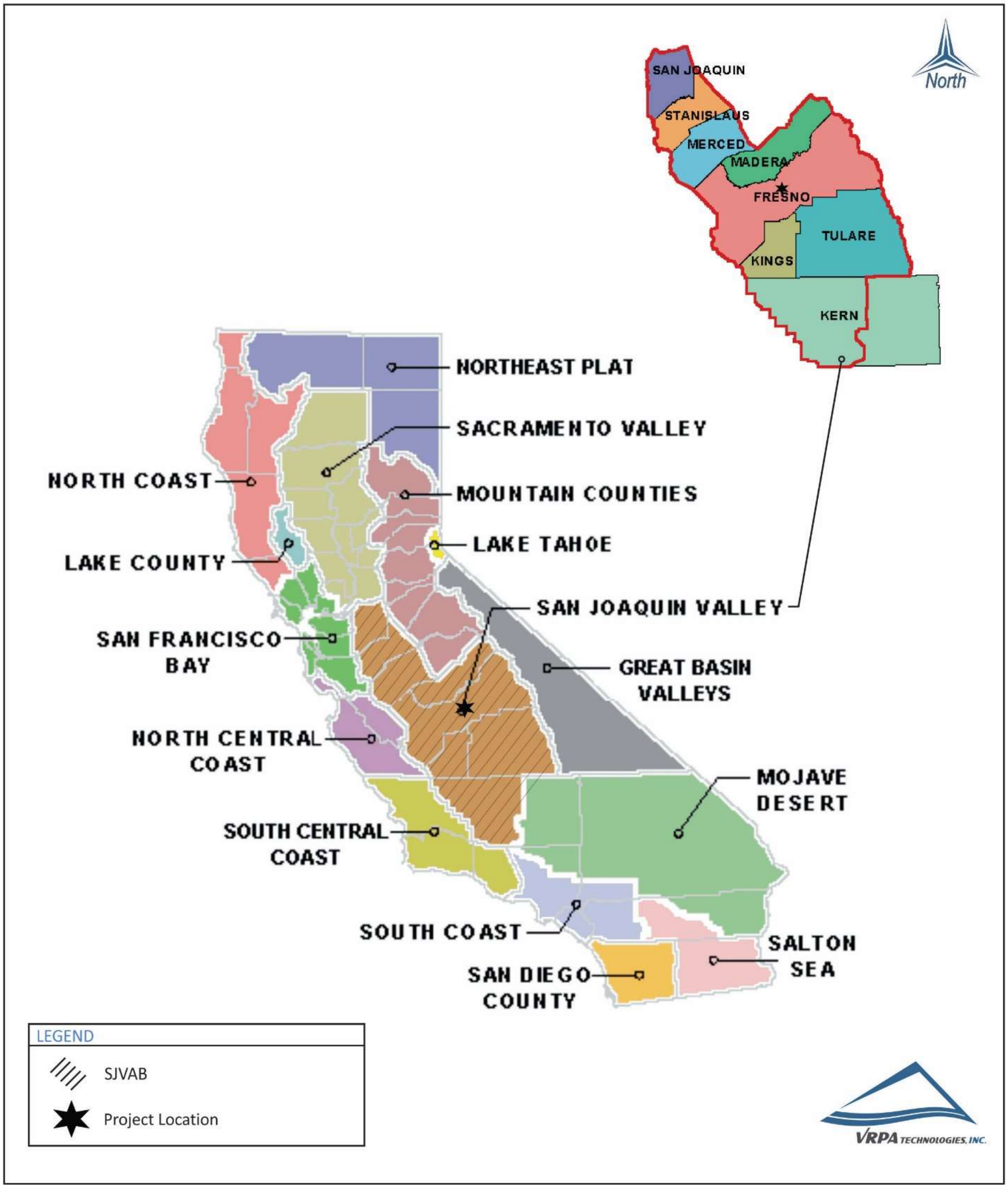
- More stringent emission standards for some new urban bus engines, beginning with 2002 model year engines.
- Zero-emission bus demonstration and purchase requirements applicable to transit agencies
- Reporting requirements under which transit agencies must demonstrate compliance with the urban transit 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.

**BDM Builders Mixed-Use Development**
**San Joaquin Valley Air Basin**

**Figure 3**



## 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.

- ✓ **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. For the Fresno COG region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. CARB Executive Order G-19-092 (October 2019) accepts FCOG's determination that the SCS adopted by the FCOG Board of Directors on July 26, 2018, would achieve the 2020 and 2035 GHG emissions reduction targets established by CARB when implemented.

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 Fresno 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 Fresno 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 medical office development projects larger than 20,000 square feet to reduce smog-forming and particulate emissions generated by their projects. The proposed Project includes the development of approximately 145,000 square feet of medical office space and will be required to comply with this rule.

### 1.2.7 *Local Plans*

- **City of Fresno 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 Fresno's General Plan (Adopted December 18, 2014) identifies numerous policies geared towards the improvement of air quality in the City of Fresno. They include policy number LU-2-a, which promotes development of vacant, underdeveloped, and redevelopable land uses within the City Limits where urban services are available considering the establishment and implementation of supportive regulations and programs. The proposed Project will be developed on a vacant parcel within city limits.

✓ **City of Fresno Greenhouse Gas Reduction Plan**

The City of Fresno Greenhouse Gas Reduction Plan (GHG Plan), adopted December 2014, was created to guide the development and enhancement of actions designed to reduce the City of Fresno's GHG emissions. The GHG Plan is a comprehensive municipal and community strategy to reduce GHG emissions within the City of Fresno, consistent with the goals and strategies outlined in the CARB regulations identified above. The GHG Plan identifies how reduction strategies will be implemented over time.

The City of Fresno recently circulated the *Fresno General Plan Public Review Draft Program Environmental Impact Report (State Clearinghouse Number: 2019050005)*, dated March 2020, which includes an update to the GHG Plan referenced above. The GHG Plan Update evaluates the GHG reduction targets included in the GHG Plan adopted in December 2014 and proposes new targets consistent with State policies.

# 2.0 Environmental Setting

This section describes existing air quality within the San Joaquin Valley Air Basin and in Fresno 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

Fresno 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 the 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 Climatic Conditions

Fresno 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 Fresno 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, Fresno 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 Fresno 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 Fresno 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 Fresno 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 Fresno County, including areas north and west of the San Joaquin Valley, can cause or generate emissions that are transported into Fresno 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 Fresno 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 Fresno 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 Clovis' Villa Avenue Monitoring Station. The stations monitor particulates, ozone, and nitrogen dioxide. Monitoring data for the most recent three years on record is summarized in Table 2.

Table 3 identifies Fresno 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 Clovis' N Villa Avenue Monitoring Station

| Pollutant | Time Averaging | 2016 Maximums | 2017 Maximums | 2018 Maximums | Standards National | Standards State |
|---|---|---|---|---|---|---|
| Ozone ($O_3$) | 1 hour | 0.113 ppm | 0.138 ppm | 0.121 ppm | - | 0.09 ppm |
| Ozone ($O_3$) | 8 hour | 0.095 ppm | 0.100 ppm | 0.094 ppm | 0.070 ppm | 0.070 ppm |
| Nitrogen Dioxide ($NO_2$) | 1 hour | 49.8 ppb | 58.8 ppb | 64.5 ppb | 100 ppb | 0.18 ppm |
| Nitrogen Dioxide ($NO_2$) | Annual Average | * | 10.0 ppb | 9.0 ppb | 0.053 ppm | 0.030 ppm |
| Particulates ($PM_{10}$) | 24 hour | 76.2 µg/$m^3$ | 103.2 µg/$m^3$ | 114.6 µg/$m^3$ | 150 µg/$m^3$ | 50 µg/$m^3$ |
| Particulates ($PM_{10}$) | Federal Annual Arithmetic Mean | 32.7 µg/$m^3$ | * | 39.6 µg/$m^3$ | - | 20 µg/$m^3$ |
| Particulates ($PM_{2.5}$) | 24 hour | 50.4 µg/$m^3$ | 69.5 µg/$m^3$ | 82.3 µg/$m^3$ | 35 µg/$m^3$ | - |
| Particulates ($PM_{2.5}$) | Federal Annual Arithmetic Mean | 11.6 µg/$m^3$ | 13.6 µg/$m^3$ | 15.6 µg/$m^3$ | 12 µg/$m^3$ | 12 µg/$m^3$ |

Source: California Air Resources Board (ADAM) Air Pollution Summaries

* Means there was insufficient data available to determine the value.

## Table 3
### Fresno 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, 2019

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 Fresno 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 Fresno 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 Fresno County in attainment of Federal standards and nonattainment for State standards. The CARB found PM2.5 standards in Fresno 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 Fresno 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.[1]

✓ ***Health Effects***

NOx is an ozone precursor that combines with Reactive Organic Gases (ROG) to form ozone.

1 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 Fresno 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 Fresno 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 Fresno 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 Fresno 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).<br><br>- 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.<br><br>- 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.<br><br>- 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 2019

### 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.

**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 2019

### 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 ($CO_2$):** 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 ($CH_4$):** 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 ($N_2O$):** 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 Fresno 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 activities that occur as a result of Project operations. Impacts are evaluated both on the basis of CEQA Appendix G criteria and SJVAPCD significance criteria. The impacts to be evaluated will be those involving construction 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 2019

### 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.

### 3.1.2 *California Line Source Dispersion Model (CALINE)*

CALINE is a dispersion model for predicting air pollutant levels near highways and arterial streets. It is the standard modeling program used by Caltrans to assess carbon monoxide impacts near transportation facilities. The model is based on the Gaussian diffusion equation and employs a mixing zone concept to characterize pollutant dispersion from automobiles over the roadway.

## 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.

## Table 7
### Project Construction Emissions (tons/year)

| Summary Report | CO | $NO_X$ | ROG | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ | CO2e |
|---|---|---|---|---|---|---|---|
| Project Site Construction Emissions Per Year | 4.09 | 4.69 | 2.43 | 0.01 | 0.64 | 0.36 | 759.20 |
| 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 Emissions Model

## 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 Fresno 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 applicable SJVAPCD emission thresholds for criteria pollutants with the exception of emissions related to NOx. Operational emissions for the Project exceed the SJVAPCD's NOx threshold by 14.64 tons per year. A vast majority of the NOx Emissions are generated by mobile sources.

## Table 8
### Project Operational Emissions (tons/year)

| Summary Report | CO | $NO_X$ | ROG | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ | CO2e |
|---|---|---|---|---|---|---|---|
| Project Operational Emissions Per Year | 15.62 | 24.64 | 3.14 | 0.08 | 3.46 | 1.00 | 8711.84 |
| SJVAPCD Level of Significance | 100 | 10 | 10 | 27 | 15 | 15 | None |
| Does the Project Exceed Standard? | No | Yes | No | No | No | No | No |

Source: CalEEMod Emissions Model

### 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 warranted to ensure that standards are maintained. Also, an analysis is required to ensure that localized concentrations don't reach potentially unhealthful levels that could affect sensitive receptors (residents, school children, hospital patients, the elderly, etc.).

Typically, high CO concentrations are associated with roadways or intersections operating at an unacceptable Level of Service (LOS). CO "Hot Spot" modeling is required if a traffic study reveals that a project will reduce the LOS on one or more streets to E or F or if the project will worsen an existing LOS F.

To analyze the Cumulative Year 2035 Plus Project "worst case" CO concentrations at study roadway segments, the analysis methodology considered the highest annual maximum CO concentration reported in 2013, using 1.0 PPM as an estimate of the background concentration for the 8-hour standard and 2.2 PPM for the 1-hour standard (source: CARB annual publications). Other modeling assumptions include a wind speed of .5 m/s, flat topography, 1,000-meter mixing height, and a 5-degree wind deviation.

Traffic forecasts for the Cumulative Year 2035 Plus Project conditions were used in the CALINE analysis to determine CO concentrations under worst case conditions. Intersections that are anticipated to operate at LOS E or F in the Cumulative Year 2035 Plus Project scenario after implementation of recommended improvements were analyzed to determine CO concentrations.

Results of the CALINE analysis are shown in Table 9. Detailed CALINE analysis worksheets are included in Appendix B of this report. Results of the Analysis show that the intersection of Maple Avenue and North Avenue are not expected to generate CO concentrations that would exceed the Federal or State 1-hour and 8-hour standards.

**Table 9**
**Cumulative Year 2035 Plus Project**
**Local Roadway Air Quality Segment Analysis**
**(1 Hour and 8 Hour CO Concentration – PPM)**

| Air Quality Standard | Cumulative Year 2035 Plus Project | |
|---|---|---|
| | Maple Avenue / North Avenue | |
| | 1 hr | 8 hr |
| | 5.0 | 2.2 |
| Federal | 35.0 | 9.0 |
| Exceedance? (Y/N) | N | N |
| State | 20.0 | 9.0 |
| Exceedance? (Y/N) | N | N |

✓ **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.

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.

The first step in evaluating the potential for impacts to sensitive receptors for TACs from the Project is to perform a screening level analysis. 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 or common sources shown in Table 4. 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 medical office 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 proposed Project will not generate odorous emissions given the nature or characteristics of the development 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. Table 5 includes Food Processing Facilities, which is a type of food service establishment that is a commercial operation that processes food for human consumption. Fiore Di Pasta is located to the east, within 1 mile of the proposed Project. Fiore Di Pasta manufactures quality pasta products and produces high quality, custom fresh/frozen pastas, sauces, entrees, and organic food products. Given the presence of the residential uses located directly north of the Fiore Di Pasta site, it is not anticipated that the site would generate odorous emissions that would impact the proposed 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 Fresno COG region, CARB set targets at five (5) percent per capita decrease in 2020 and a ten (10) percent per capita decrease in 2035 from a base year of 2005. Fresno COG's 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) projects that the Fresno 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).

The City of Fresno GHG Plan, adopted December 2014, is a comprehensive municipal and community strategy to reduce GHG emissions within the City of Fresno and is consistent with the goals and strategies outlined in CARB regulations. As noted in the GHG Plan, the Project's compliance with applicable City of Fresno General Plan policies and GHG Plan strategies would result in less than significant impacts for greenhouse gas emissions. The GHG Plan identifies numerous strategies needed to achieve reduction targets for 2020 and beyond. Those strategies are categorized as follows:

- Land Use and Transportation
- Transportation Facilities Strategies
- Transportation Demand Strategies
- Energy Conservation Strategies for New and Existing Buildings
- Waste Diversion and Recycling and Energy Recovery
- Strategies for Existing Development
- Municipal Strategies

The GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3), it should be noted that the proposed land uses on the Project site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one (1) Gas Station/Carwash, one (1) bank, and 4,000+ dwelling units located within 1.5 miles of the Project site. As noted previously, the Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Of the uses proposed on the Project site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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)[2]. Though the Project is under SJVAPCD jurisdiction, the SCAQMD GHG threshold provides some perspective on the GHG emissions generated by the Project. Table 10 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is approximately 13% less than the threshold identified by the SCAQMD.

## Table 10
### Project Operational Greenhouse Gas Emissions

| Summary Report | $CO_2e$ |
|---|---|
| Project Operational Emissions Per Year | 8,737.14 MT/yr |

Source: CalEEMod Emissions Model

2 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.

# 4.0 Impact Determinations and Recommended Mitigation

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in significant adverse impacts on the environment. 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. 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. Fresno COG 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 Fresno's General Plan, which was adopted December 18, 2014. While the Project will undergo a GPA with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3), it should be noted that the proposed land uses on the Project site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one (1) Gas Station/Carwash, one (1) bank, and 4,000+ dwelling units located within 1.5 miles of the Project site. As noted previously, the Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Of the uses proposed on the Project site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue. 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*

Fresno County is nonattainment for Ozone (1 hour and 8 hour) and PM10 (State standards) and PM2.5. The SJVAPCD has prepared the 2016 and 2013 Ozone Plan, 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 will not conflict with or obstruct implementation of any air quality plans. Therefore, the Project will not conflict with or obstruct implementation of the 2016 and 2013 Ozone Plan, 2007 PM10 Maintenance Plan, and 2012 PM2.5 Plan.

Results of the CALINE analysis (Section 3.3.2) show that the intersections of Maple Avenue and North Avenue are not expected to generate CO concentrations that would exceed the Federal or State 1-hour and 8-hour standards. The Project will not 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. Moreover, the Project will not result in

Project-specific or site-specific significant adverse impacts from the net increase of any criteria pollutant within the Project study area. Accordingly, no mitigation measures are 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 TAC's 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 recommended buffer distances (depicted in Table 4) 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 or common sources shown in Table 4. 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.

<u>Short-Term Impacts</u>

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 8. Therefore, construction emissions associated with the Project are considered less than significant.

<u>Long-Term Impacts</u>

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 applicable SJVAPCD emission thresholds for criteria pollutants with the exception of emissions related to NOx. Operational emissions for the Project exceed the SJVAPCD's NOx threshold by 14.64 tons per year. A vast majority of the NOx Emissions are generated by mobile sources.

**<u>Mitigation Measure AQ-1:</u> Comply with SJVAPCD's Indirect Source Review Rule (Rule 9510)**
Operation of the proposed project shall comply with SJVAPCD's ISR rule (Rule 9510). Measures

that may be implemented to reduce NOx operational emissions may include, but are not limited to, the following:

- ✓ Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.
- ✓ Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50% tree coverage within 10 years of construction using low ROG emitting, low maintenance native drought-resistant trees.
- ✓ Plant drought tolerant native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer.
- ✓ Utilize high-efficiency gas or solar water heaters, beyond that required by current building codes.
- ✓ Install low water consumption landscape. Use native plants that do not require watering after they are well established or minimal watering during the summer months and are low ROG emitting.
- ✓ Install parking spaces for alternatively fueled vehicles, beyond that required by current building codes.
- ✓ Use low-VOC content paints during construction and long-term facility maintenance. To the extent possible construction materials that are prefinished or that do not require the application of architectural coatings should be used.
- ✓ Install energy-saving systems in rooms that reduce energy usage associated with HVAC systems and appliances when rooms are not occupied, except where such systems would pose a safety or health concern.
- ✓ Provide a pedestrian access network that internally links all uses and connects all existing or planned external streets and pedestrian facilities contiguous with the project site.
- ✓ Provide on-site bicycle parking beyond those required by current building standards and related facilities to support long-term use (lockers, or a locked room with standard racks and access limited to bicyclists only).
- ✓ Implement traffic calming improvements as appropriate (e.g., marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, median islands, mini-circles, tight corner radii, etc.)

**<u>Mitigation Measure AQ-2:</u> Implement a Voluntary Emissions Reduction Agreement (VERA) with the SJVAPCD to Reduce Operational Emissions of ROG, NOX, and PM10**

A VERA shall be entered into with the SJVAPCD to reduce operational emissions NOx to less than 10 tons/year. Operational emissions of NOx shall be reduced in excess of the reductions required per compliance with SJVAPCD's ISR Rule (Refer to Mitigation Measure AQ-1). Emission reductions may be achieved by use of newer, low-emission equipment, implementation of on-site or off-site mitigation, and/or the funding of offsite mitigation, through participation in the SJVAPCD's off-site mitigation program. The VERA shall be reviewed and approved by the SJVAPCD prior to issuance of construction/grading permits by the City of Fresno. Documentation confirming compliance with the VERA shall be submitted to the City of Fresno Planning Department prior to issuance of final discretionary approval. Development and implementation of the VERA shall be fully funded by the Project. With approval by SJVAPCD, the VERA may also be used to demonstrate compliance with emission reductions required by SJVAPCD's ISR Rule (Rule 9510).

Level of Significance after Mitigation

With implementation of Mitigation Measure AQ-1 and AQ-2, Project operational emissions of NOx would be reduced below the SJVAPCD's significance thresholds. With mitigation, this impact would be 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 proposed Project will not generate odorous emissions given the nature or characteristics of the development 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. Table 5 includes Food Processing Facilities, which is a type of food service establishment that is a commercial operation that processes food for human consumption. Fiore Di Pasta is located to the east, within 1 mile of the proposed Project. Fiore Di Pasta manufactures quality pasta products and produces high quality, custom fresh/frozen pastas, sauces, entrees, and organic food products. Given the presence of the residential uses located directly north of the Fiore Di Pasta site, it is not anticipated that the site would generate odorous emissions that would impact the proposed 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 GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3), it should be noted that the proposed land uses on the Project site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one (1) Gas Station/Carwash, one (1) bank, and 4,000+ dwelling units located within 1.5 miles of the Project site. As noted previously, the Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Of the uses proposed on the Project site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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 10 shows the yearly GHG emissions generated by the Project as determined by the CalEEMod model, which is approximately 13% less than the threshold identified by the SCAQMD.

Based on the assessment above, the Project will not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, any impacts would be less than significant. 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*

The City of Fresno GHG Plan, adopted December 2014, is a comprehensive municipal and community strategy to reduce GHG emissions within the City of Fresno and is consistent with the goals and strategies outlined in CARB regulations. As noted in the GHG Plan, the Project's compliance with applicable City of Fresno General Plan policies and GHG Plan strategies would result in less than significant impacts for greenhouse gas emissions. The GHG Plan identifies numerous strategies needed to achieve reduction targets for 2020 and beyond. Those strategies are categorized as follows:

- Land Use and Transportation
- Transportation Facilities Strategies
- Transportation Demand Strategies
- Energy Conservation Strategies for New and Existing Buildings
- Waste Diversion and Recycling and Energy Recovery
- Strategies for Existing Development
- Municipal Strategies

The GHG Plan determined that projects within a SCS Plan area that are consistent with the land use and development densities as well as design standards for the project area would be considered to have a less than significant impact on climate change. While the Project will undergo a GPA with the City of Fresno, it should be noted that the proposed land uses on the Project site will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments. Presently, there is one (1) Gas Station/Carwash, one (1) bank, and 4,000+ dwelling units located within 1.5 miles of the Project site. As noted previously, the Project will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Of the uses proposed on the Project site, only two (2) uses (gas station and bank) currently exist within the Project's vicinity. As noted in the Traffic Impact Analysis (TIA) prepared for the Project, the proposed Project will be used to serve an expanding population of southern Fresno. The nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler

Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest shopping center for travelers south of Jensen Avenue.

As a result, the Project is considered to have a less than significant impact on climate change since it will not conflict with or obstruct implementation of the GHG Plan and applicable SCS Plan area. The Project will cause a reduction of GHG emissions since it will attract trips from neighboring land uses that would otherwise travel longer distances to other commercial and office developments.

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 further the achievement of City of Fresno's greenhouse gas reduction goals. Therefore, any impacts would be less than significant.

# APPENDIX A

# CalEEMod Emissions Worksheets

**BDM Builders Mixed-Use Development**

**Fresno County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Convenience Market With Gas Pumps | 16.00 | Pump | 0.05 | 2,258.80 | 0 |
| Fast Food Restaurant with Drive Thru | 3.00 | 1000sqft | 0.07 | 3,000.00 | 0 |
| Fast Food Restaurant w/o Drive Thru | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Regional Shopping Center | 32.00 | 1000sqft | 0.73 | 32,000.00 | 0 |
| Fast Food Restaurant with Drive Thru | 2.00 | 1000sqft | 0.05 | 2,000.00 | 0 |
| Medical Office Building | 14.50 | 1000sqft | 0.33 | 14,500.00 | 0 |
| Bank (with Drive-Through) | 6.00 | 1000sqft | 0.14 | 6,000.00 | 0 |
| General Office Building | 5.00 | 1000sqft | 0.11 | 5,000.00 | 0 |
| Apartments Low Rise | 150.00 | Dwelling Unit | 9.38 | 150,000.00 | 429 |
| Day-Care Center | 4.00 | 1000sqft | 0.09 | 4,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 45 |
| **Climate Zone** | 3 | | | **Operational Year** | 2024 |
| **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 -

Vehicle Trips - Trip Rates Adjusted to account for internal capture and pass-by trips in accordance with the TIS

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblProjectCharacteristics | OperationalYear | 2018 | 2024 |
| tblVehicleTrips | ST_TR | 7.16 | 5.00 |
| tblVehicleTrips | ST_TR | 86.32 | 60.40 |
| tblVehicleTrips | ST_TR | 204.47 | 143.13 |
| tblVehicleTrips | ST_TR | 6.21 | 4.35 |
| tblVehicleTrips | ST_TR | 696.00 | 487.20 |
| tblVehicleTrips | ST_TR | 722.03 | 505.40 |
| tblVehicleTrips | ST_TR | 2.46 | 1.72 |
| tblVehicleTrips | ST_TR | 8.96 | 6.27 |
| tblVehicleTrips | ST_TR | 49.97 | 34.98 |
| tblVehicleTrips | SU_TR | 6.07 | 4.25 |
| tblVehicleTrips | SU_TR | 31.90 | 22.33 |
| tblVehicleTrips | SU_TR | 166.88 | 116.82 |
| tblVehicleTrips | SU_TR | 5.83 | 4.08 |
| tblVehicleTrips | SU_TR | 500.00 | 350.00 |
| tblVehicleTrips | SU_TR | 542.72 | 379.90 |
| tblVehicleTrips | SU_TR | 1.05 | 0.74 |
| tblVehicleTrips | SU_TR | 1.55 | 1.09 |
| tblVehicleTrips | SU_TR | 25.24 | 17.67 |
| tblVehicleTrips | WD_TR | 6.59 | 3.80 |
| tblVehicleTrips | WD_TR | 148.15 | 70.02 |
| tblVehicleTrips | WD_TR | 542.60 | 143.75 |
| tblVehicleTrips | WD_TR | 74.06 | 33.33 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | WD_TR | 716.00 | 242.36 |
| tblVehicleTrips | WD_TR | 496.12 | 427.60 |
| tblVehicleTrips | WD_TR | 11.03 | 11.33 |
| tblVehicleTrips | WD_TR | 36.13 | 24.36 |
| tblVehicleTrips | WD_TR | 42.70 | 26.43 |
| tblWoodstoves | NumberCatalytic | 9.38 | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 9.38 | 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 | | | | | |
| 2020 | 0.2693 | 2.5069 | 1.9257 | 3.9100e-003 | 0.2899 | 0.1202 | 0.4101 | 0.1223 | 0.1120 | 0.2342 | 0.0000 | 345.3673 | 345.3673 | 0.0774 | 0.0000 | 347.3019 |
| 2021 | 2.1611 | 2.1837 | 2.1625 | 4.6300e-003 | 0.1243 | 0.1027 | 0.2269 | 0.0335 | 0.0965 | 0.1299 | 0.0000 | 410.0946 | 410.0946 | 0.0721 | 0.0000 | 411.8978 |
| **Total** | **2.4304** | **4.6907** | **4.0882** | **8.5400e-003** | **0.4142** | **0.2229** | **0.6370** | **0.1557** | **0.2084** | **0.3641** | **0.0000** | **755.4618** | **755.4618** | **0.1495** | **0.0000** | **759.1997** |

**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 | | | | | |
| 2020 | 0.2693 | 2.5069 | 1.9257 | 3.9100e-003 | 0.2899 | 0.1202 | 0.4101 | 0.1223 | 0.1120 | 0.2342 | 0.0000 | 345.3670 | 345.3670 | 0.0774 | 0.0000 | 347.3016 |
| 2021 | 2.1611 | 2.1837 | 2.1625 | 4.6300e-003 | 0.1243 | 0.1027 | 0.2269 | 0.0335 | 0.0965 | 0.1299 | 0.0000 | 410.0943 | 410.0943 | 0.0721 | 0.0000 | 411.8975 |
| **Total** | **2.4304** | **4.6907** | **4.0882** | **8.5400e-003** | **0.4142** | **0.2229** | **0.6370** | **0.1557** | **0.2084** | **0.3641** | **0.0000** | **755.4612** | **755.4612** | **0.1495** | **0.0000** | **759.1991** |

| | **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 | 1.0923 | 0.0689 | 1.1380 | 4.2000e-004 | | 0.0107 | 0.0107 | | 0.0107 | 0.0107 | 0.0000 | 66.8019 | 66.8019 | 3.0000e-003 | 1.1900e-003 | 67.2318 |
| Energy | 0.0277 | 0.2435 | 0.1509 | 1.5100e-003 | | 0.0191 | 0.0191 | | 0.0191 | 0.0191 | 0.0000 | 714.5454 | 714.5454 | 0.0252 | 9.1500e-003 | 717.9001 |
| Mobile | 2.0215 | 24.3280 | 14.3274 | 0.0819 | 3.3856 | 0.0401 | 3.4257 | 0.9280 | 0.0375 | 0.9655 | 0.0000 | 7,662.0046 | 7,662.0046 | 0.9948 | 0.0000 | 7,686.8734 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 72.1186 | 0.0000 | 72.1186 | 4.2621 | 0.0000 | 178.6709 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.5687 | 37.1305 | 42.6992 | 0.5736 | 0.0139 | 61.1683 |
| **Total** | **3.1415** | **24.6404** | **15.6162** | **0.0839** | **3.3856** | **0.0699** | **3.4555** | **0.9280** | **0.0674** | **0.9954** | **77.6874** | **8,480.4825** | **8,558.1698** | **5.8587** | **0.0242** | **8,711.8445** |

## 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 | 1.0923 | 0.0689 | 1.1380 | 4.2000e-004 | | 0.0107 | 0.0107 | | 0.0107 | 0.0107 | 0.0000 | 66.8019 | 66.8019 | 3.0000e-003 | 1.1900e-003 | 67.2318 |
| Energy | 0.0277 | 0.2435 | 0.1509 | 1.5100e-003 | | 0.0191 | 0.0191 | | 0.0191 | 0.0191 | 0.0000 | 714.5454 | 714.5454 | 0.0252 | 9.1500e-003 | 717.9001 |
| Mobile | 2.0215 | 24.3280 | 14.3274 | 0.0819 | 3.3856 | 0.0401 | 3.4257 | 0.9280 | 0.0375 | 0.9655 | 0.0000 | 7,662.0046 | 7,662.0046 | 0.9948 | 0.0000 | 7,686.8734 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 72.1186 | 0.0000 | 72.1186 | 4.2621 | 0.0000 | 178.6709 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.5687 | 37.1305 | 42.6992 | 0.5736 | 0.0139 | 61.1683 |
| **Total** | **3.1415** | **24.6404** | **15.6162** | **0.0839** | **3.3856** | **0.0699** | **3.4555** | **0.9280** | **0.0674** | **0.9954** | **77.6874** | **8,480.4825** | **8,558.1698** | **5.8587** | **0.0242** | **8,711.8445** |

| | 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 | Architectural Coating | Architectural Coating | 10/29/2021 | 11/25/2021 | 5 | 20 | |
| 2 | Building Construction | Building Construction | 8/7/2020 | 9/30/2021 | 5 | 300 | |
| 3 | Demolition | Demolition | 5/15/2020 | 6/11/2020 | 5 | 20 | |
| 4 | Grading | Grading | 6/26/2020 | 8/6/2020 | 5 | 30 | |
| 5 | Paving | Paving | 10/1/2021 | 10/28/2021 | 5 | 20 | |
| 6 | Site Preparation | Site Preparation | 6/12/2020 | 6/25/2020 | 5 | 10 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 75**

**Acres of Paving: 0**

**Residential Indoor: 303,750; Residential Outdoor: 101,250; Non-Residential Indoor: 106,138; Non-Residential Outdoor: 35,379; Striped Parking Area: 0 (Architectural Coating – sqft)**

**<u>OffRoad Equipment</u>**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Demolition | Excavators | 3 | 8.00 | 158 | 0.38 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| 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 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Demolition | Rubber Tired Dozers | 2 | 8.00 | 247 | 0.40 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 26.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 132.00 | 28.00 | 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 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.8998 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.1900e-003 | 0.0153 | 0.0182 | 3.0000e-005 | | 9.4000e-004 | 9.4000e-004 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 2.5533 | 2.5533 | 1.8000e-004 | 0.0000 | 2.5576 |
| **Total** | **1.9020** | **0.0153** | **0.0182** | **3.0000e-005** | | **9.4000e-004** | **9.4000e-004** | | **9.4000e-004** | **9.4000e-004** | **0.0000** | **2.5533** | **2.5533** | **1.8000e-004** | **0.0000** | **2.5576** |

## 3.2 Architectural Coating - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0400e-003 | 6.3000e-004 | 6.5600e-003 | 2.0000e-005 | 2.0800e-003 | 1.0000e-005 | 2.0900e-003 | 5.5000e-004 | 1.0000e-005 | 5.6000e-004 | 0.0000 | 1.7374 | 1.7374 | 4.0000e-005 | 0.0000 | 1.7385 |
| **Total** | **1.0400e-003** | **6.3000e-004** | **6.5600e-003** | **2.0000e-005** | **2.0800e-003** | **1.0000e-005** | **2.0900e-003** | **5.5000e-004** | **1.0000e-005** | **5.6000e-004** | **0.0000** | **1.7374** | **1.7374** | **4.0000e-005** | **0.0000** | **1.7385** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.8998 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.1900e-003 | 0.0153 | 0.0182 | 3.0000e-005 | | 9.4000e-004 | 9.4000e-004 | | 9.4000e-004 | 9.4000e-004 | 0.0000 | 2.5533 | 2.5533 | 1.8000e-004 | 0.0000 | 2.5576 |
| **Total** | **1.9020** | **0.0153** | **0.0182** | **3.0000e-005** | | **9.4000e-004** | **9.4000e-004** | | **9.4000e-004** | **9.4000e-004** | **0.0000** | **2.5533** | **2.5533** | **1.8000e-004** | **0.0000** | **2.5576** |

## 3.2 Architectural Coating - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0400e-003 | 6.3000e-004 | 6.5600e-003 | 2.0000e-005 | 2.0800e-003 | 1.0000e-005 | 2.0900e-003 | 5.5000e-004 | 1.0000e-005 | 5.6000e-004 | 0.0000 | 1.7374 | 1.7374 | 4.0000e-005 | 0.0000 | 1.7385 |
| **Total** | **1.0400e-003** | **6.3000e-004** | **6.5600e-003** | **2.0000e-005** | **2.0800e-003** | **1.0000e-005** | **2.0900e-003** | **5.5000e-004** | **1.0000e-005** | **5.6000e-004** | **0.0000** | **1.7374** | **1.7374** | **4.0000e-005** | **0.0000** | **1.7385** |

## 3.3 Building Construction - 2020

**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 | 0.1113 | 1.0073 | 0.8846 | 1.4100e-003 | | 0.0587 | 0.0587 | | 0.0551 | 0.0551 | 0.0000 | 121.5952 | 121.5952 | 0.0297 | 0.0000 | 122.3369 |
| **Total** | **0.1113** | **1.0073** | **0.8846** | **1.4100e-003** | | **0.0587** | **0.0587** | | **0.0551** | **0.0551** | **0.0000** | **121.5952** | **121.5952** | **0.0297** | **0.0000** | **122.3369** |

## 3.3 Building Construction - 2020

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.4900e-003 | 0.1822 | 0.0291 | 4.2000e-004 | 9.7400e-003 | 9.7000e-004 | 0.0107 | 2.8100e-003 | 9.2000e-004 | 3.7400e-003 | 0.0000 | 39.6438 | 39.6438 | 4.9000e-003 | 0.0000 | 39.7663 |
| Worker | 0.0299 | 0.0190 | 0.1926 | 5.3000e-004 | 0.0554 | 3.6000e-004 | 0.0558 | 0.0147 | 3.3000e-004 | 0.0151 | 0.0000 | 47.9514 | 47.9514 | 1.2800e-003 | 0.0000 | 47.9835 |
| **Total** | **0.0354** | **0.2011** | **0.2217** | **9.5000e-004** | **0.0651** | **1.3300e-003** | **0.0665** | **0.0175** | **1.2500e-003** | **0.0188** | **0.0000** | **87.5952** | **87.5952** | **6.1800e-003** | **0.0000** | **87.7498** |

**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 | 0.1113 | 1.0073 | 0.8846 | 1.4100e-003 | | 0.0586 | 0.0586 | | 0.0551 | 0.0551 | 0.0000 | 121.5951 | 121.5951 | 0.0297 | 0.0000 | 122.3367 |
| **Total** | **0.1113** | **1.0073** | **0.8846** | **1.4100e-003** | | **0.0586** | **0.0586** | | **0.0551** | **0.0551** | **0.0000** | **121.5951** | **121.5951** | **0.0297** | **0.0000** | **122.3367** |

## 3.3 Building Construction - 2020

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.4900e-003 | 0.1822 | 0.0291 | 4.2000e-004 | 9.7400e-003 | 9.7000e-004 | 0.0107 | 2.8100e-003 | 9.2000e-004 | 3.7400e-003 | 0.0000 | 39.6438 | 39.6438 | 4.9000e-003 | 0.0000 | 39.7663 |
| Worker | 0.0299 | 0.0190 | 0.1926 | 5.3000e-004 | 0.0554 | 3.6000e-004 | 0.0558 | 0.0147 | 3.3000e-004 | 0.0151 | 0.0000 | 47.9514 | 47.9514 | 1.2800e-003 | 0.0000 | 47.9835 |
| **Total** | **0.0354** | **0.2011** | **0.2217** | **9.5000e-004** | **0.0651** | **1.3300e-003** | **0.0665** | **0.0175** | **1.2500e-003** | **0.0188** | **0.0000** | **87.5952** | **87.5952** | **6.1800e-003** | **0.0000** | **87.7498** |

## 3.3 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1853 | 1.6996 | 1.6161 | 2.6200e-003 | | 0.0935 | 0.0935 | | 0.0879 | 0.0879 | 0.0000 | 225.8463 | 225.8463 | 0.0545 | 0.0000 | 227.2085 |
| **Total** | **0.1853** | **1.6996** | **1.6161** | **2.6200e-003** | | **0.0935** | **0.0935** | | **0.0879** | **0.0879** | **0.0000** | **225.8463** | **225.8463** | **0.0545** | **0.0000** | **227.2085** |

## 3.3 Building Construction - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.2500e-003 | 0.3073 | 0.0468 | 7.7000e-004 | 0.0181 | 8.2000e-004 | 0.0189 | 5.2300e-003 | 7.9000e-004 | 6.0200e-003 | 0.0000 | 72.9309 | 72.9309 | 8.8000e-003 | 0.0000 | 73.1509 |
| Worker | 0.0513 | 0.0314 | 0.3246 | 9.5000e-004 | 0.1029 | 6.4000e-004 | 0.1035 | 0.0274 | 5.9000e-004 | 0.0279 | 0.0000 | 86.0008 | 86.0008 | 2.1200e-003 | 0.0000 | 86.0539 |
| **Total** | **0.0596** | **0.3387** | **0.3714** | **1.7200e-003** | **0.1210** | **1.4600e-003** | **0.1225** | **0.0326** | **1.3800e-003** | **0.0340** | **0.0000** | **158.9318** | **158.9318** | **0.0109** | **0.0000** | **159.2048** |

**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 | 0.1853 | 1.6996 | 1.6161 | 2.6200e-003 | | 0.0935 | 0.0935 | | 0.0879 | 0.0879 | 0.0000 | 225.8461 | 225.8461 | 0.0545 | 0.0000 | 227.2082 |
| **Total** | **0.1853** | **1.6996** | **1.6161** | **2.6200e-003** | | **0.0935** | **0.0935** | | **0.0879** | **0.0879** | **0.0000** | **225.8461** | **225.8461** | **0.0545** | **0.0000** | **227.2082** |

## 3.3 Building Construction - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.2500e-003 | 0.3073 | 0.0468 | 7.7000e-004 | 0.0181 | 8.2000e-004 | 0.0189 | 5.2300e-003 | 7.9000e-004 | 6.0200e-003 | 0.0000 | 72.9309 | 72.9309 | 8.8000e-003 | 0.0000 | 73.1509 |
| Worker | 0.0513 | 0.0314 | 0.3246 | 9.5000e-004 | 0.1029 | 6.4000e-004 | 0.1035 | 0.0274 | 5.9000e-004 | 0.0279 | 0.0000 | 86.0008 | 86.0008 | 2.1200e-003 | 0.0000 | 86.0539 |
| **Total** | **0.0596** | **0.3387** | **0.3714** | **1.7200e-003** | **0.1210** | **1.4600e-003** | **0.1225** | **0.0326** | **1.3800e-003** | **0.0340** | **0.0000** | **158.9318** | **158.9318** | **0.0109** | **0.0000** | **159.2048** |

## 3.4 Demolition - 2020

**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 | 0.0331 | 0.3320 | 0.2175 | 3.9000e-004 | | 0.0166 | 0.0166 | | 0.0154 | 0.0154 | 0.0000 | 33.9986 | 33.9986 | 9.6000e-003 | 0.0000 | 34.2386 |
| **Total** | **0.0331** | **0.3320** | **0.2175** | **3.9000e-004** | | **0.0166** | **0.0166** | | **0.0154** | **0.0154** | **0.0000** | **33.9986** | **33.9986** | **9.6000e-003** | **0.0000** | **34.2386** |

## 3.4 Demolition - 2020

**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 | 6.5000e-004 | 4.1000e-004 | 4.1700e-003 | 1.0000e-005 | 1.2000e-003 | 1.0000e-005 | 1.2100e-003 | 3.2000e-004 | 1.0000e-005 | 3.3000e-004 | 0.0000 | 1.0379 | 1.0379 | 3.0000e-005 | 0.0000 | 1.0386 |
| **Total** | **6.5000e-004** | **4.1000e-004** | **4.1700e-003** | **1.0000e-005** | **1.2000e-003** | **1.0000e-005** | **1.2100e-003** | **3.2000e-004** | **1.0000e-005** | **3.3000e-004** | **0.0000** | **1.0379** | **1.0379** | **3.0000e-005** | **0.0000** | **1.0386** |

**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 | 0.0331 | 0.3320 | 0.2175 | 3.9000e-004 | | 0.0166 | 0.0166 | | 0.0154 | 0.0154 | 0.0000 | 33.9986 | 33.9986 | 9.6000e-003 | 0.0000 | 34.2385 |
| **Total** | **0.0331** | **0.3320** | **0.2175** | **3.9000e-004** | | **0.0166** | **0.0166** | | **0.0154** | **0.0154** | **0.0000** | **33.9986** | **33.9986** | **9.6000e-003** | **0.0000** | **34.2385** |

## 3.4 Demolition - 2020

**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 | 6.5000e-004 | 4.1000e-004 | 4.1700e-003 | 1.0000e-005 | 1.2000e-003 | 1.0000e-005 | 1.2100e-003 | 3.2000e-004 | 1.0000e-005 | 3.3000e-004 | 0.0000 | 1.0379 | 1.0379 | 3.0000e-005 | 0.0000 | 1.0386 |
| **Total** | **6.5000e-004** | **4.1000e-004** | **4.1700e-003** | **1.0000e-005** | **1.2000e-003** | **1.0000e-005** | **1.2100e-003** | **3.2000e-004** | **1.0000e-005** | **3.3000e-004** | **0.0000** | **1.0379** | **1.0379** | **3.0000e-005** | **0.0000** | **1.0386** |

## 3.5 Grading - 2020

**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 | | | | | 0.1301 | 0.0000 | 0.1301 | 0.0540 | 0.0000 | 0.0540 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0668 | 0.7530 | 0.4794 | 9.3000e-004 | | 0.0326 | 0.0326 | | 0.0300 | 0.0300 | 0.0000 | 81.7264 | 81.7264 | 0.0264 | 0.0000 | 82.3872 |
| **Total** | **0.0668** | **0.7530** | **0.4794** | **9.3000e-004** | **0.1301** | **0.0326** | **0.1627** | **0.0540** | **0.0300** | **0.0840** | **0.0000** | **81.7264** | **81.7264** | **0.0264** | **0.0000** | **82.3872** |

## 3.5 Grading - 2020

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.3000e-003 | 8.2000e-004 | 8.3400e-003 | 2.0000e-005 | 2.4000e-003 | 2.0000e-005 | 2.4100e-003 | 6.4000e-004 | 1.0000e-005 | 6.5000e-004 | 0.0000 | 2.0758 | 2.0758 | 6.0000e-005 | 0.0000 | 2.0772 |
| **Total** | **1.3000e-003** | **8.2000e-004** | **8.3400e-003** | **2.0000e-005** | **2.4000e-003** | **2.0000e-005** | **2.4100e-003** | **6.4000e-004** | **1.0000e-005** | **6.5000e-004** | **0.0000** | **2.0758** | **2.0758** | **6.0000e-005** | **0.0000** | **2.0772** |

**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 | | | | | 0.1301 | 0.0000 | 0.1301 | 0.0540 | 0.0000 | 0.0540 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0668 | 0.7530 | 0.4794 | 9.3000e-004 | | 0.0326 | 0.0326 | | 0.0300 | 0.0300 | 0.0000 | 81.7263 | 81.7263 | 0.0264 | 0.0000 | 82.3871 |
| **Total** | **0.0668** | **0.7530** | **0.4794** | **9.3000e-004** | **0.1301** | **0.0326** | **0.1627** | **0.0540** | **0.0300** | **0.0840** | **0.0000** | **81.7263** | **81.7263** | **0.0264** | **0.0000** | **82.3871** |

## 3.5 Grading - 2020

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.3000e-003 | 8.2000e-004 | 8.3400e-003 | 2.0000e-005 | 2.4000e-003 | 2.0000e-005 | 2.4100e-003 | 6.4000e-004 | 1.0000e-005 | 6.5000e-004 | 0.0000 | 2.0758 | 2.0758 | 6.0000e-005 | 0.0000 | 2.0772 |
| **Total** | **1.3000e-003** | **8.2000e-004** | **8.3400e-003** | **2.0000e-005** | **2.4000e-003** | **2.0000e-005** | **2.4100e-003** | **6.4000e-004** | **1.0000e-005** | **6.5000e-004** | **0.0000** | **2.0758** | **2.0758** | **6.0000e-005** | **0.0000** | **2.0772** |

## 3.6 Paving - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0126 | 0.1292 | 0.1465 | 2.3000e-004 | | 6.7800e-003 | 6.7800e-003 | | 6.2400e-003 | 6.2400e-003 | 0.0000 | 20.0235 | 20.0235 | 6.4800e-003 | 0.0000 | 20.1854 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0126** | **0.1292** | **0.1465** | **2.3000e-004** | | **6.7800e-003** | **6.7800e-003** | | **6.2400e-003** | **6.2400e-003** | **0.0000** | **20.0235** | **20.0235** | **6.4800e-003** | **0.0000** | **20.1854** |

### 3.6 Paving - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.0000e-004 | 3.7000e-004 | 3.7800e-003 | 1.0000e-005 | 1.2000e-003 | 1.0000e-005 | 1.2100e-003 | 3.2000e-004 | 1.0000e-005 | 3.3000e-004 | 0.0000 | 1.0023 | 1.0023 | 2.0000e-005 | 0.0000 | 1.0030 |
| **Total** | **6.0000e-004** | **3.7000e-004** | **3.7800e-003** | **1.0000e-005** | **1.2000e-003** | **1.0000e-005** | **1.2100e-003** | **3.2000e-004** | **1.0000e-005** | **3.3000e-004** | **0.0000** | **1.0023** | **1.0023** | **2.0000e-005** | **0.0000** | **1.0030** |

**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 | 0.0126 | 0.1292 | 0.1465 | 2.3000e-004 | | 6.7800e-003 | 6.7800e-003 | | 6.2400e-003 | 6.2400e-003 | 0.0000 | 20.0235 | 20.0235 | 6.4800e-003 | 0.0000 | 20.1854 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0126** | **0.1292** | **0.1465** | **2.3000e-004** | | **6.7800e-003** | **6.7800e-003** | | **6.2400e-003** | **6.2400e-003** | **0.0000** | **20.0235** | **20.0235** | **6.4800e-003** | **0.0000** | **20.1854** |

## 3.6 Paving - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.0000e-004 | 3.7000e-004 | 3.7800e-003 | 1.0000e-005 | 1.2000e-003 | 1.0000e-005 | 1.2100e-003 | 3.2000e-004 | 1.0000e-005 | 3.3000e-004 | 0.0000 | 1.0023 | 1.0023 | 2.0000e-005 | 0.0000 | 1.0030 |
| **Total** | **6.0000e-004** | **3.7000e-004** | **3.7800e-003** | **1.0000e-005** | **1.2000e-003** | **1.0000e-005** | **1.2100e-003** | **3.2000e-004** | **1.0000e-005** | **3.3000e-004** | **0.0000** | **1.0023** | **1.0023** | **2.0000e-005** | **0.0000** | **1.0030** |

## 3.7 Site Preparation - 2020

**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 | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0204 | 0.2121 | 0.1076 | 1.9000e-004 | | 0.0110 | 0.0110 | | 0.0101 | 0.0101 | 0.0000 | 16.7153 | 16.7153 | 5.4100e-003 | 0.0000 | 16.8505 |
| **Total** | **0.0204** | **0.2121** | **0.1076** | **1.9000e-004** | **0.0903** | **0.0110** | **0.1013** | **0.0497** | **0.0101** | **0.0598** | **0.0000** | **16.7153** | **16.7153** | **5.4100e-003** | **0.0000** | **16.8505** |

### 3.7 Site Preparation - 2020

**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 | 3.9000e-004 | 2.5000e-004 | 2.5000e-003 | 1.0000e-005 | 7.2000e-004 | 0.0000 | 7.2000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6227 | 0.6227 | 2.0000e-005 | 0.0000 | 0.6232 |
| **Total** | **3.9000e-004** | **2.5000e-004** | **2.5000e-003** | **1.0000e-005** | **7.2000e-004** | **0.0000** | **7.2000e-004** | **1.9000e-004** | **0.0000** | **2.0000e-004** | **0.0000** | **0.6227** | **0.6227** | **2.0000e-005** | **0.0000** | **0.6232** |

**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 | | | | | 0.0903 | 0.0000 | 0.0903 | 0.0497 | 0.0000 | 0.0497 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0204 | 0.2121 | 0.1076 | 1.9000e-004 | | 0.0110 | 0.0110 | | 0.0101 | 0.0101 | 0.0000 | 16.7153 | 16.7153 | 5.4100e-003 | 0.0000 | 16.8505 |
| **Total** | **0.0204** | **0.2121** | **0.1076** | **1.9000e-004** | **0.0903** | **0.0110** | **0.1013** | **0.0497** | **0.0101** | **0.0598** | **0.0000** | **16.7153** | **16.7153** | **5.4100e-003** | **0.0000** | **16.8505** |

### 3.7 Site Preparation - 2020

**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 | 3.9000e-004 | 2.5000e-004 | 2.5000e-003 | 1.0000e-005 | 7.2000e-004 | 0.0000 | 7.2000e-004 | 1.9000e-004 | 0.0000 | 2.0000e-004 | 0.0000 | 0.6227 | 0.6227 | 2.0000e-005 | 0.0000 | 0.6232 |
| **Total** | **3.9000e-004** | **2.5000e-004** | **2.5000e-003** | **1.0000e-005** | **7.2000e-004** | **0.0000** | **7.2000e-004** | **1.9000e-004** | **0.0000** | **2.0000e-004** | **0.0000** | **0.6227** | **0.6227** | **2.0000e-005** | **0.0000** | **0.6232** |

## 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 | | | | | |
| Unmitigated | 2.0215 | 24.3280 | 14.3274 | 0.0819 | 3.3856 | 0.0401 | 3.4257 | 0.9280 | 0.0375 | 0.9655 | 0.0000 | 7,662.0046 | 7,662.0046 | 0.9948 | 0.0000 | 7,686.8734 |
| Mitigated | 2.0215 | 24.3280 | 14.3274 | 0.0819 | 3.3856 | 0.0401 | 3.4257 | 0.9280 | 0.0375 | 0.9655 | 0.0000 | 7,662.0046 | 7,662.0046 | 0.9948 | 0.0000 | 7,686.8734 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 570.00 | 750.00 | 637.50 | 1,773,496 | 1,773,496 |
| Bank (with Drive-Through) | 420.12 | 362.40 | 133.98 | 343,163 | 343,163 |
| Convenience Market With Gas Pumps | 2,300.00 | 2,290.08 | 1869.12 | 1,199,952 | 1,199,952 |
| Day-Care Center | 133.32 | 17.40 | 16.32 | 117,817 | 117,817 |
| Fast Food Restaurant w/o Drive Thru | 484.72 | 974.40 | 700.00 | 944,044 | 944,044 |
| Fast Food Restaurant with Drive Thru | 1,282.80 | 1,516.20 | 1139.70 | 1,210,605 | 1,210,605 |
| Fast Food Restaurant with Drive Thru | 855.20 | 1,010.80 | 759.80 | 807,070 | 807,070 |
| General Office Building | 56.65 | 8.61 | 3.70 | 100,902 | 100,902 |
| Medical Office Building | 353.22 | 90.92 | 15.81 | 523,654 | 523,654 |
| Regional Shopping Center | 845.76 | 1,119.36 | 565.44 | 1,481,192 | 1,481,192 |
| Total | 7,301.79 | 8,140.17 | 5,841.37 | 8,501,894 | 8,501,894 |

## 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 |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 48.40 | 15.90 | 35.70 | 86 | 11 | 3 |
| Bank (with Drive-Through) | 9.50 | 7.30 | 7.30 | 6.60 | 74.40 | 19.00 | 27 | 26 | 47 |
| Convenience Market With Gas | 9.50 | 7.30 | 7.30 | 0.80 | 80.20 | 19.00 | 14 | 21 | 65 |
| Day-Care Center | 9.50 | 7.30 | 7.30 | 12.70 | 82.30 | 5.00 | 28 | 58 | 14 |
| Fast Food Restaurant w/o Drive | 9.50 | 7.30 | 7.30 | 1.50 | 79.50 | 19.00 | 51 | 37 | 12 |
| Fast Food Restaurant with Drive | 9.50 | 7.30 | 7.30 | 2.20 | 78.80 | 19.00 | 29 | 21 | 50 |
| Fast Food Restaurant with Drive | 9.50 | 7.30 | 7.30 | 2.20 | 78.80 | 19.00 | 29 | 21 | 50 |
| General Office Building | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 77 | 19 | 4 |
| Medical Office Building | 9.50 | 7.30 | 7.30 | 29.60 | 51.40 | 19.00 | 60 | 30 | 10 |
| Regional Shopping Center | 9.50 | 7.30 | 7.30 | 16.30 | 64.70 | 19.00 | 54 | 35 | 11 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.501421 | 0.030018 | 0.171383 | 0.107490 | 0.013683 | 0.004097 | 0.033773 | 0.127911 | 0.002341 | 0.001406 | 0.004884 | 0.001058 | 0.000535 |

## 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 | | | | | |
| NaturalGas Mitigated | 0.0277 | 0.2435 | 0.1509 | 1.5100e-003 | | 0.0191 | 0.0191 | | 0.0191 | 0.0191 | 0.0000 | 274.1322 | 274.1322 | 5.2500e-003 | 5.0300e-003 | 275.7613 |
| NaturalGas Unmitigated | 0.0277 | 0.2435 | 0.1509 | 1.5100e-003 | | 0.0191 | 0.0191 | | 0.0191 | 0.0191 | 0.0000 | 274.1322 | 274.1322 | 5.2500e-003 | 5.0300e-003 | 275.7613 |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 440.4132 | 440.4132 | 0.0199 | 4.1200e-003 | 442.1389 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 440.4132 | 440.4132 | 0.0199 | 4.1200e-003 | 442.1389 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Convenience Market With Gas Pumps | 24259.5 | 1.3000e-004 | 1.1900e-003 | 1.0000e-003 | 1.0000e-005 | | 9.0000e-005 | 9.0000e-005 | | 9.0000e-005 | 9.0000e-005 | 0.0000 | 1.2946 | 1.2946 | 2.0000e-005 | 2.0000e-005 | 1.3023 |
| Day-Care Center | 100920 | 5.4000e-004 | 4.9500e-003 | 4.1600e-003 | 3.0000e-005 | | 3.8000e-004 | 3.8000e-004 | | 3.8000e-004 | 3.8000e-004 | 0.0000 | 5.3855 | 5.3855 | 1.0000e-004 | 1.0000e-004 | 5.4175 |
| Fast Food Restaurant w/o Drive Thru | 421200 | 2.2700e-003 | 0.0207 | 0.0173 | 1.2000e-004 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 22.4768 | 22.4768 | 4.3000e-004 | 4.1000e-004 | 22.6104 |
| Fast Food Restaurant with Drive Thru | 421200 | 2.2700e-003 | 0.0207 | 0.0173 | 1.2000e-004 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 22.4768 | 22.4768 | 4.3000e-004 | 4.1000e-004 | 22.6104 |
| Fast Food Restaurant with Drive Thru | 631800 | 3.4100e-003 | 0.0310 | 0.0260 | 1.9000e-004 | | 2.3500e-003 | 2.3500e-003 | | 2.3500e-003 | 2.3500e-003 | 0.0000 | 33.7153 | 33.7153 | 6.5000e-004 | 6.2000e-004 | 33.9156 |
| General Office Building | 65600 | 3.5000e-004 | 3.2200e-003 | 2.7000e-003 | 2.0000e-005 | | 2.4000e-004 | 2.4000e-004 | | 2.4000e-004 | 2.4000e-004 | 0.0000 | 3.5007 | 3.5007 | 7.0000e-005 | 6.0000e-005 | 3.5215 |
| Medical Office Building | 190240 | 1.0300e-003 | 9.3300e-003 | 7.8300e-003 | 6.0000e-005 | | 7.1000e-004 | 7.1000e-004 | | 7.1000e-004 | 7.1000e-004 | 0.0000 | 10.1519 | 10.1519 | 1.9000e-004 | 1.9000e-004 | 10.2123 |
| Regional Shopping Center | 343680 | 1.8500e-003 | 0.0169 | 0.0142 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 18.3401 | 18.3401 | 3.5000e-004 | 3.4000e-004 | 18.4491 |
| Apartments Low Rise | 2.81244e+006 | 0.0152 | 0.1296 | 0.0552 | 8.3000e-004 | | 0.0105 | 0.0105 | | 0.0105 | 0.0105 | 0.0000 | 150.0828 | 150.0828 | 2.8800e-003 | 2.7500e-003 | 150.9746 |
| Bank (with Drive-Through) | 125700 | 6.8000e-004 | 6.1600e-003 | 5.1800e-003 | 4.0000e-005 | | 4.7000e-004 | 4.7000e-004 | | 4.7000e-004 | 4.7000e-004 | 0.0000 | 6.7078 | 6.7078 | 1.3000e-004 | 1.2000e-004 | 6.7477 |
| **Total** | | **0.0277** | **0.2436** | **0.1509** | **1.5200e-003** | | **0.0191** | **0.0191** | | **0.0191** | **0.0191** | **0.0000** | **274.1322** | **274.1322** | **5.2500e-003** | **5.0200e-003** | **275.7613** |

## 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 | | | | | |
| Convenience Market With Gas Pumps | 24259.5 | 1.3000e-004 | 1.1900e-003 | 1.0000e-003 | 1.0000e-005 | | 9.0000e-005 | 9.0000e-005 | | 9.0000e-005 | 9.0000e-005 | 0.0000 | 1.2946 | 1.2946 | 2.0000e-005 | 2.0000e-005 | 1.3023 |
| Day-Care Center | 100920 | 5.4000e-004 | 4.9500e-003 | 4.1600e-003 | 3.0000e-005 | | 3.8000e-004 | 3.8000e-004 | | 3.8000e-004 | 3.8000e-004 | 0.0000 | 5.3855 | 5.3855 | 1.0000e-004 | 1.0000e-004 | 5.4175 |
| Fast Food Restaurant w/o Drive Thru | 421200 | 2.2700e-003 | 0.0207 | 0.0173 | 1.2000e-004 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 22.4768 | 22.4768 | 4.3000e-004 | 4.1000e-004 | 22.6104 |
| Fast Food Restaurant with Drive Thru | 421200 | 2.2700e-003 | 0.0207 | 0.0173 | 1.2000e-004 | | 1.5700e-003 | 1.5700e-003 | | 1.5700e-003 | 1.5700e-003 | 0.0000 | 22.4768 | 22.4768 | 4.3000e-004 | 4.1000e-004 | 22.6104 |
| Fast Food Restaurant with Drive Thru | 631800 | 3.4100e-003 | 0.0310 | 0.0260 | 1.9000e-004 | | 2.3500e-003 | 2.3500e-003 | | 2.3500e-003 | 2.3500e-003 | 0.0000 | 33.7153 | 33.7153 | 6.5000e-004 | 6.2000e-004 | 33.9156 |
| General Office Building | 65600 | 3.5000e-004 | 3.2200e-003 | 2.7000e-003 | 2.0000e-005 | | 2.4000e-004 | 2.4000e-004 | | 2.4000e-004 | 2.4000e-004 | 0.0000 | 3.5007 | 3.5007 | 7.0000e-005 | 6.0000e-005 | 3.5215 |
| Medical Office Building | 190240 | 1.0300e-003 | 9.3300e-003 | 7.8300e-003 | 6.0000e-005 | | 7.1000e-004 | 7.1000e-004 | | 7.1000e-004 | 7.1000e-004 | 0.0000 | 10.1519 | 10.1519 | 1.9000e-004 | 1.9000e-004 | 10.2123 |
| Regional Shopping Center | 343680 | 1.8500e-003 | 0.0169 | 0.0142 | 1.0000e-004 | | 1.2800e-003 | 1.2800e-003 | | 1.2800e-003 | 1.2800e-003 | 0.0000 | 18.3401 | 18.3401 | 3.5000e-004 | 3.4000e-004 | 18.4491 |
| Apartments Low Rise | 2.81244e+006 | 0.0152 | 0.1296 | 0.0552 | 8.3000e-004 | | 0.0105 | 0.0105 | | 0.0105 | 0.0105 | 0.0000 | 150.0828 | 150.0828 | 2.8800e-003 | 2.7500e-003 | 150.9746 |
| Bank (with Drive-Through) | 125700 | 6.8000e-004 | 6.1600e-003 | 5.1800e-003 | 4.0000e-005 | | 4.7000e-004 | 4.7000e-004 | | 4.7000e-004 | 4.7000e-004 | 0.0000 | 6.7078 | 6.7078 | 1.3000e-004 | 1.2000e-004 | 6.7477 |
| **Total** | | **0.0277** | **0.2436** | **0.1509** | **1.5200e-003** | | **0.0191** | **0.0191** | | **0.0191** | **0.0191** | **0.0000** | **274.1322** | **274.1322** | **5.2500e-003** | **5.0200e-003** | **275.7613** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 757137 | 220.2598 | 9.9600e-003 | 2.0600e-003 | 221.1229 |
| Bank (with Drive-Through) | 53940 | 15.6918 | 7.1000e-004 | 1.5000e-004 | 15.7533 |
| Convenience Market With Gas Pumps | 18861 | 5.4869 | 2.5000e-004 | 5.0000e-005 | 5.5084 |
| Day-Care Center | 28880 | 8.4015 | 3.8000e-004 | 8.0000e-005 | 8.4344 |
| Fast Food Restaurant w/o Drive Thru | 58900 | 17.1347 | 7.7000e-004 | 1.6000e-004 | 17.2018 |
| Fast Food Restaurant with Drive Thru | 58900 | 17.1347 | 7.7000e-004 | 1.6000e-004 | 17.2018 |
| Fast Food Restaurant with Drive Thru | 88350 | 25.7020 | 1.1600e-003 | 2.4000e-004 | 25.8027 |
| General Office Building | 46600 | 13.5565 | 6.1000e-004 | 1.3000e-004 | 13.6096 |
| Medical Office Building | 135140 | 39.3138 | 1.7800e-003 | 3.7000e-004 | 39.4678 |
| Regional Shopping Center | 267200 | 77.7315 | 3.5100e-003 | 7.3000e-004 | 78.0361 |
| **Total** | | **440.4132** | **0.0199** | **4.1300e-003** | **442.1389** |

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 757137 | 220.2598 | 9.9600e-003 | 2.0600e-003 | 221.1229 |
| Bank (with Drive-Through) | 53940 | 15.6918 | 7.1000e-004 | 1.5000e-004 | 15.7533 |
| Convenience Market With Gas Pumps | 18861 | 5.4869 | 2.5000e-004 | 5.0000e-005 | 5.5084 |
| Day-Care Center | 28880 | 8.4015 | 3.8000e-004 | 8.0000e-005 | 8.4344 |
| Fast Food Restaurant w/o Drive Thru | 58900 | 17.1347 | 7.7000e-004 | 1.6000e-004 | 17.2018 |
| Fast Food Restaurant with Drive Thru | 58900 | 17.1347 | 7.7000e-004 | 1.6000e-004 | 17.2018 |
| Fast Food Restaurant with Drive Thru | 88350 | 25.7020 | 1.1600e-003 | 2.4000e-004 | 25.8027 |
| General Office Building | 46600 | 13.5565 | 6.1000e-004 | 1.3000e-004 | 13.6096 |
| Medical Office Building | 135140 | 39.3138 | 1.7800e-003 | 3.7000e-004 | 39.4678 |
| Regional Shopping Center | 267200 | 77.7315 | 3.5100e-003 | 7.3000e-004 | 78.0361 |
| **Total** | | **440.4132** | **0.0199** | **4.1300e-003** | **442.1389** |

# 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 | 1.0923 | 0.0689 | 1.1380 | 4.2000e-004 | | 0.0107 | 0.0107 | | 0.0107 | 0.0107 | 0.0000 | 66.8019 | 66.8019 | 3.0000e-003 | 1.1900e-003 | 67.2318 |
| Unmitigated | 1.0923 | 0.0689 | 1.1380 | 4.2000e-004 | | 0.0107 | 0.0107 | | 0.0107 | 0.0107 | 0.0000 | 66.8019 | 66.8019 | 3.0000e-003 | 1.1900e-003 | 67.2318 |

## 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 | 0.1900 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.8622 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 6.5700e-003 | 0.0561 | 0.0239 | 3.6000e-004 | | 4.5400e-003 | 4.5400e-003 | | 4.5400e-003 | 4.5400e-003 | 0.0000 | 64.9811 | 64.9811 | 1.2500e-003 | 1.1900e-003 | 65.3673 |
| Landscaping | 0.0336 | 0.0128 | 1.1141 | 6.0000e-005 | | 6.1700e-003 | 6.1700e-003 | | 6.1700e-003 | 6.1700e-003 | 0.0000 | 1.8208 | 1.8208 | 1.7500e-003 | 0.0000 | 1.8646 |
| **Total** | **1.0923** | **0.0689** | **1.1380** | **4.2000e-004** | | **0.0107** | **0.0107** | | **0.0107** | **0.0107** | **0.0000** | **66.8019** | **66.8019** | **3.0000e-003** | **1.1900e-003** | **67.2318** |

### 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 | 0.1900 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.8622 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 6.5700e-003 | 0.0561 | 0.0239 | 3.6000e-004 | | 4.5400e-003 | 4.5400e-003 | | 4.5400e-003 | 4.5400e-003 | 0.0000 | 64.9811 | 64.9811 | 1.2500e-003 | 1.1900e-003 | 65.3673 |
| Landscaping | 0.0336 | 0.0128 | 1.1141 | 6.0000e-005 | | 6.1700e-003 | 6.1700e-003 | | 6.1700e-003 | 6.1700e-003 | 0.0000 | 1.8208 | 1.8208 | 1.7500e-003 | 0.0000 | 1.8646 |
| **Total** | **1.0923** | **0.0689** | **1.1380** | **4.2000e-004** | | **0.0107** | **0.0107** | | **0.0107** | **0.0107** | **0.0000** | **66.8019** | **66.8019** | **3.0000e-003** | **1.1900e-003** | **67.2318** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Unmitigated | 42.6992 | 0.5736 | 0.0139 | 61.1683 |
| Mitigated | 42.6992 | 0.5736 | 0.0139 | 61.1683 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 9.7731 / 6.1613 | 24.7580 | 0.3194 | 7.7200e-003 | 35.0451 |
| Bank (with Drive-Through) | 0.237738 / 0.14571 | 0.5980 | 7.7700e-003 | 1.9000e-004 | 0.8482 |
| Convenience Market With Gas Pumps | 0.167315 / 0.102548 | 0.4209 | 5.4700e-003 | 1.3000e-004 | 0.5970 |
| Day-Care Center | 0.171558 / 0.44115 | 0.7737 | 5.6200e-003 | 1.4000e-004 | 0.9556 |
| Fast Food Restaurant w/o Drive Thru | 0.607067 / 0.038749 | 1.1877 | 0.0198 | 4.8000e-004 | 1.8253 |
| Fast Food Restaurant with Drive Thru | 1.51767 / 0.0968725 | 2.9691 | 0.0496 | 1.1900e-003 | 4.5632 |
| General Office Building | 0.888669 / 0.544668 | 2.2354 | 0.0291 | 7.0000e-004 | 3.1707 |
| Medical Office Building | 1.81947 / 0.346565 | 3.7942 | 0.0594 | 1.4300e-003 | 5.7061 |
| Regional Shopping Center | 2.37032 / 1.45278 | 5.9624 | 0.0775 | 1.8700e-003 | 8.4572 |
| **Total** | | **42.6992** | **0.5737** | **0.0139** | **61.1683** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 9.7731 / 6.1613 | 24.7580 | 0.3194 | 7.7200e-003 | 35.0451 |
| Bank (with Drive-Through) | 0.237738 / 0.14571 | 0.5980 | 7.7700e-003 | 1.9000e-004 | 0.8482 |
| Convenience Market With Gas Pumps | 0.167315 / 0.102548 | 0.4209 | 5.4700e-003 | 1.3000e-004 | 0.5970 |
| Day-Care Center | 0.171558 / 0.44115 | 0.7737 | 5.6200e-003 | 1.4000e-004 | 0.9556 |
| Fast Food Restaurant w/o Drive Thru | 0.607067 / 0.038749 | 1.1877 | 0.0198 | 4.8000e-004 | 1.8253 |
| Fast Food Restaurant with Drive Thru | 1.51767 / 0.0968725 | 2.9691 | 0.0496 | 1.1900e-003 | 4.5632 |
| General Office Building | 0.888669 / 0.544668 | 2.2354 | 0.0291 | 7.0000e-004 | 3.1707 |
| Medical Office Building | 1.81947 / 0.346565 | 3.7942 | 0.0594 | 1.4300e-003 | 5.7061 |
| Regional Shopping Center | 2.37032 / 1.45278 | 5.9624 | 0.0775 | 1.8700e-003 | 8.4572 |
| **Total** | | **42.6992** | **0.5737** | **0.0139** | **61.1683** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 72.1186 | 4.2621 | 0.0000 | 178.6709 |
| Unmitigated | 72.1186 | 4.2621 | 0.0000 | 178.6709 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 69 | 14.0064 | 0.8278 | 0.0000 | 34.7002 |
| Bank (with Drive-Through) | 5.6 | 1.1368 | 0.0672 | 0.0000 | 2.8163 |
| Day-Care Center | 5.2 | 1.0556 | 0.0624 | 0.0000 | 2.6151 |
| Fast Food Restaurant w/o Drive Thru | 23.04 | 4.6769 | 0.2764 | 0.0000 | 11.5869 |
| Fast Food Restaurant with Drive Thru | 57.59 | 11.6903 | 0.6909 | 0.0000 | 28.9621 |
| General Office Building | 4.65 | 0.9439 | 0.0558 | 0.0000 | 2.3385 |
| Medical Office Building | 156.6 | 31.7884 | 1.8786 | 0.0000 | 78.7544 |
| Regional Shopping Center | 33.6 | 6.8205 | 0.4031 | 0.0000 | 16.8975 |
| **Total** | | **72.1186** | **4.2621** | **0.0000** | **178.6709** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 69 | 14.0064 | 0.8278 | 0.0000 | 34.7002 |
| Bank (with Drive-Through) | 5.6 | 1.1368 | 0.0672 | 0.0000 | 2.8163 |
| Day-Care Center | 5.2 | 1.0556 | 0.0624 | 0.0000 | 2.6151 |
| Fast Food Restaurant w/o Drive Thru | 23.04 | 4.6769 | 0.2764 | 0.0000 | 11.5869 |
| Fast Food Restaurant with Drive Thru | 57.59 | 11.6903 | 0.6909 | 0.0000 | 28.9621 |
| General Office Building | 4.65 | 0.9439 | 0.0558 | 0.0000 | 2.3385 |
| Medical Office Building | 156.6 | 31.7884 | 1.8786 | 0.0000 | 78.7544 |
| Regional Shopping Center | 33.6 | 6.8205 | 0.4031 | 0.0000 | 16.8975 |
| **Total** | | **72.1186** | **4.2621** | **0.0000** | **178.6709** |

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

# 10.0 Vegetation

# APPENDIX B

# CALINE Worksheets

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: BDM 1HR
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

```
       U=    .5 M/S             Z0= 100. CM            ALT=    90. (M)
     BRG= WORST CASE            VD=   .0 CM/S
    CLAS=     7 (G)             VS=   .0 CM/S
    MIXH= 1000. M              AMB=  2.2 PPM
   SIGTH=    5. DEGREES       TEMP=  4.4 DEGREE (C)
```

II. LINK VARIABLES

| LINK DESCRIPTION | X1 | Y1 | X2 | Y2 | TYPE | VPH | EF (G/MI) | H (M) | W (M) |
|---|---|---|---|---|---|---|---|---|---|
| A. SB In | -2 | 750 | -2 | 150 | AG | 544 | 24.1 | .0 | 10.4 |
| B. SB In | -2 | 150 | -2 | 0 | AG | 544 | 24.1 | .0 | 10.4 |
| C. SB Out | -2 | 0 | -2 | -150 | AG | 4 | 24.1 | .0 | 10.4 |
| D. SB Out | -2 | -150 | -2 | -750 | AG | 4 | 24.1 | .0 | 10.4 |
| E. NB In | 2 | -750 | 2 | -150 | AG | 6 | 24.1 | .0 | 10.4 |
| F. NB In | 2 | -150 | 2 | 0 | AG | 6 | 24.1 | .0 | 10.4 |
| G. NB Out | 2 | 0 | 2 | 150 | AG | 482 | 24.1 | .0 | 10.4 |
| H. NB Out | 2 | 150 | 2 | 750 | AG | 482 | 24.1 | .0 | 10.4 |
| I. WB In | 750 | 2 | 150 | 2 | AG | 942 | 24.1 | .0 | 10.4 |
| J. WB In | 150 | 2 | 0 | 2 | AG | 942 | 24.1 | .0 | 10.4 |
| K. WB Out | 0 | 2 | -150 | 2 | AG | 970 | 24.1 | .0 | 10.4 |
| L. WB Out | -150 | 2 | -750 | 2 | AG | 970 | 24.1 | .0 | 10.4 |
| M. EB In | -750 | -2 | -150 | -2 | AG | 831 | 24.1 | .0 | 10.4 |
| N. EB In | -150 | -2 | 0 | -2 | AG | 831 | 24.1 | .0 | 10.4 |
| O. EB Out | 0 | -2 | 150 | -2 | AG | 867 | 24.1 | .0 | 10.4 |
| P. EB Out | 150 | -2 | 750 | -2 | AG | 867 | 24.1 | .0 | 10.4 |
| Q. WB L | 150 | 1 | 0 | 0 | AG | 1 | 24.1 | .0 | 10.4 |
| R. EB L | 0 | 0 | -150 | -1 | AG | 192 | 24.1 | .0 | 10.4 |
| S. NB L | 1 | -150 | 0 | 0 | AG | 0 | 24.1 | .0 | 10.4 |
| T. SB L | 0 | 0 | -1 | 150 | AG | 228 | 24.1 | .0 | 10.4 |

(Link coordinates in M.)

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: BDM 1HR
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

| RECEPTOR | X | Y | Z |
|---|---|---|---|
| 1. Recpt 1 | 50 | 50 | 1.8 |
| 2. Recpt 2 | 52 | 52 | 1.8 |
| 3. Recpt 3 | 53 | 53 | 1.8 |

(Coordinates in M.)

| | | | | |
|---|---|---|---|---|
| 4. Recpt 4 | * | -50 | -50 | 1.8 |
| 5. Recpt 5 | * | -52 | -52 | 1.8 |
| 6. Recpt 6 | * | -53 | -53 | 1.8 |
| 7. Recpt 7 | * | -50 | 50 | 1.8 |
| 8. Recpt 8 | * | -52 | 52 | 1.8 |
| 9. Recpt 9 | * | -53 | 53 | 1.8 |
| 10. Recpt 10 | * | 50 | -50 | 1.8 |
| 11. Recpt 11 | * | 52 | -52 | 1.8 |
| 12. Recpt 12 | * | 53 | -53 | 1.8 |

IV. MODEL RESULTS (WORST CASE WIND ANGLE )

| RECEPTOR | BRG (DEG) | PRED CONC (PPM) | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | CONC/LINK (PPM) | | | | | | | |
| 1. Recpt 1 | 261. | 5.0 | .0 | .3 | .0 | .0 | .0 | .0 | .3 | .0 |
| 2. Recpt 2 | 261. | 5.0 | .0 | .3 | .0 | .0 | .0 | .0 | .3 | .0 |
| 3. Recpt 3 | 261. | 4.9 | .0 | .3 | .0 | .0 | .0 | .0 | .3 | .0 |
| 4. Recpt 4 | 9. | 4.6 | .7 | .0 | .0 | .0 | .0 | .0 | .0 | .6 |
| 5. Recpt 5 | 9. | 4.6 | .7 | .0 | .0 | .0 | .0 | .0 | .0 | .6 |
| 6. Recpt 6 | 9. | 4.5 | .7 | .0 | .0 | .0 | .0 | .0 | .0 | .6 |
| 7. Recpt 7 | 99. | 5.0 | .0 | .3 | .0 | .0 | .0 | .0 | .3 | .0 |
| 8. Recpt 8 | 99. | 5.0 | .0 | .3 | .0 | .0 | .0 | .0 | .3 | .0 |
| 9. Recpt 9 | 99. | 4.9 | .0 | .3 | .0 | .0 | .0 | .0 | .3 | .0 |
| 10. Recpt 10 | 351. | 4.5 | .7 | .0 | .0 | .0 | .0 | .0 | .0 | .6 |
| 11. Recpt 11 | 351. | 4.5 | .7 | .0 | .0 | .0 | .0 | .0 | .0 | .6 |
| 12. Recpt 12 | 351. | 4.4 | .6 | .0 | .0 | .0 | .0 | .0 | .0 | .6 |

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: BDM 1HR
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

| RECEPTOR | I | J | K | L | M | N | O | P | Q | R | S | T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CONC/LINK (PPM) | | | | | | | | | | | |
| 1. Recpt 1 | .0 | .0 | .0 | 1.1 | .9 | .0 | .0 | .0 | .0 | .0 | .0 | .1 |
| 2. Recpt 2 | .0 | .0 | .0 | 1.1 | .9 | .0 | .0 | .0 | .0 | .0 | .0 | .1 |
| 3. Recpt 3 | .0 | .0 | .0 | 1.1 | .9 | .0 | .0 | .0 | .0 | .0 | .0 | .1 |
| 4. Recpt 4 | .0 | .0 | .5 | .0 | .0 | .5 | .0 | .0 | .0 | .1 | .0 | .0 |
| 5. Recpt 5 | .0 | .0 | .5 | .0 | .0 | .5 | .0 | .0 | .0 | .1 | .0 | .0 |
| 6. Recpt 6 | .0 | .0 | .5 | .0 | .0 | .4 | .0 | .0 | .0 | .1 | .0 | .0 |
| 7. Recpt 7 | 1.1 | .0 | .0 | .0 | .0 | .0 | .0 | 1.0 | .0 | .0 | .0 | .1 |
| 8. Recpt 8 | 1.0 | .0 | .0 | .0 | .0 | .0 | .0 | 1.0 | .0 | .0 | .0 | .1 |
| 9. Recpt 9 | 1.0 | .0 | .0 | .0 | .0 | .0 | .0 | .9 | .0 | .0 | .0 | .1 |
| 10. Recpt 10 | .0 | .5 | .0 | .0 | .0 | .0 | .5 | .0 | .0 | .0 | .0 | .0 |
| 11. Recpt 11 | .0 | .5 | .0 | .0 | .0 | .0 | .5 | .0 | .0 | .0 | .0 | .0 |
| 12. Recpt 12 | .0 | .5 | .0 | .0 | .0 | .0 | .5 | .0 | .0 | .0 | .0 | .0 |

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: BDM 8HR
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

VD= .0 CM/S Z0= 100. CM ALT= 90. (M)
VS= .0 CM/S

II. METEOROLOGICAL CONDITIONS

| RUN | U (M/S) | BRG (DEG) | CLASS | AMB (PPM) | MIXH (M) | SIGTH (DEG) | TEMP (C) |
|---|---|---|---|---|---|---|---|
| 1. Hour 1 | .5 | 0. | 7 (G) | 1.0 | 1000. | 5.00 | 4.4 |
| 2. Hour 2 | .5 | 0. | 7 (G) | 1.0 | 1000. | 5.00 | 4.4 |
| 3. Hour 3 | .5 | 0. | 7 (G) | 1.0 | 1000. | 5.00 | 4.4 |
| 4. Hour 4 | .5 | 0. | 7 (G) | 1.0 | 1000. | 5.00 | 4.4 |
| 5. Hour 5 | .5 | 0. | 7 (G) | 1.0 | 1000. | 5.00 | 4.4 |
| 6. Hour 6 | .5 | 0. | 7 (G) | 1.0 | 1000. | 5.00 | 4.4 |
| 7. Hour 7 | .5 | 0. | 7 (G) | 1.0 | 1000. | 5.00 | 4.4 |
| 8. Hour 8 | .5 | 0. | 7 (G) | 1.0 | 1000. | 5.00 | 4.4 |

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: BDM 8HR
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

III. LINK GEOMETRY

| LINK DESCRIPTION | X1 | Y1 | X2 | Y2 | TYPE | H (M) | W (M) |
|---|---|---|---|---|---|---|---|
| A. SB In | -2 | 750 | -2 | 150 | AG | .0 | 10.4 |
| B. SB In | -2 | 150 | -2 | 0 | AG | .0 | 10.4 |
| C. SB Out | -2 | 0 | -2 | -150 | AG | .0 | 10.4 |
| D. SB Out | -2 | -150 | -2 | -750 | AG | .0 | 10.4 |
| E. NB In | 2 | -750 | 2 | -150 | AG | .0 | 10.4 |
| F. NB In | 2 | -150 | 2 | 0 | AG | .0 | 10.4 |
| G. NB Out | 2 | 0 | 2 | 150 | AG | .0 | 10.4 |
| H. NB Out | 2 | 150 | 2 | 750 | AG | .0 | 10.4 |
| I. WB In | 750 | 2 | 150 | 2 | AG | .0 | 10.4 |
| J. WB In | 150 | 2 | 0 | 2 | AG | .0 | 10.4 |
| K. WB Out | 0 | 2 | -150 | 2 | AG | .0 | 10.4 |
| L. WB Out | -150 | 2 | -750 | 2 | AG | .0 | 10.4 |
| M. EB In | -750 | -2 | -150 | -2 | AG | .0 | 10.4 |
| N. EB In | -150 | -2 | 0 | -2 | AG | .0 | 10.4 |
| O. EB Out | 0 | -2 | 150 | -2 | AG | .0 | 10.4 |
| P. EB Out | 150 | -2 | 750 | -2 | AG | .0 | 10.4 |
| Q. WB L | 150 | 1 | 0 | 0 | AG | .0 | 10.4 |
| R. EB L | 0 | 0 | -150 | -1 | AG | .0 | 10.4 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| S. NB L | * | 1 | -150 | 0 | 0 * | AG | .0 | 10.4 |
| T. SB L | * | 0 | 0 | -1 | 150 * | AG | .0 | 10.4 |

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: BDM 8HR
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

IV. EMISSIONS AND VEHICLE VOLUMES

| RUN | * | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 VPH | * | 544 | 544 | 4 | 4 | 6 | 6 | 482 | 482 | 942 | 942 |
| EF | * | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. |
| 2 VPH | * | 544 | 544 | 4 | 4 | 6 | 6 | 482 | 482 | 942 | 942 |
| EF | * | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. |
| 3 VPH | * | 544 | 544 | 4 | 4 | 6 | 6 | 482 | 482 | 942 | 942 |
| EF | * | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. |
| 4 VPH | * | 544 | 544 | 4 | 4 | 6 | 6 | 482 | 482 | 942 | 942 |
| EF | * | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. |
| 5 VPH | * | 544 | 544 | 4 | 4 | 6 | 6 | 482 | 482 | 942 | 942 |
| EF | * | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. |
| 6 VPH | * | 544 | 544 | 4 | 4 | 6 | 6 | 482 | 482 | 942 | 942 |
| EF | * | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. |
| 7 VPH | * | 544 | 544 | 4 | 4 | 6 | 6 | 482 | 482 | 942 | 942 |
| EF | * | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. |
| 8 VPH | * | 544 | 544 | 4 | 4 | 6 | 6 | 482 | 482 | 942 | 942 |
| EF | * | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. | 24. |

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: BDM 8HR
RUN: (MULTI-RUN)
POLLUTANT: Carbon Monoxide

IV. EMISSIONS AND VEHICLE VOLUMES (CONT.)

| RUN | * | K | L | M | N | O | P | Q | R | S | T |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 VPH | * | 970 | 970 | 831 | 831 | 867 | 867 | 1 | 192 | 0 | 228 |

```
   EF  *   24.   24.   24.   24.   24.   24.   24.   24.   24.   24.
       *
 2 VPH *   970   970   831   831   867   867     1   192     0   228
   EF  *   24.   24.   24.   24.   24.   24.   24.   24.   24.   24.
       *
 3 VPH *   970   970   831   831   867   867     1   192     0   228
   EF  *   24.   24.   24.   24.   24.   24.   24.   24.   24.   24.
       *
 4 VPH *   970   970   831   831   867   867     1   192     0   228
   EF  *   24.   24.   24.   24.   24.   24.   24.   24.   24.   24.
       *
 5 VPH *   970   970   831   831   867   867     1   192     0   228
   EF  *   24.   24.   24.   24.   24.   24.   24.   24.   24.   24.
       *
 6 VPH *   970   970   831   831   867   867     1   192     0   228
   EF  *   24.   24.   24.   24.   24.   24.   24.   24.   24.   24.
       *
 7 VPH *   970   970   831   831   867   867     1   192     0   228
   EF  *   24.   24.   24.   24.   24.   24.   24.   24.   24.   24.
       *
 8 VPH *   970   970   831   831   867   867     1   192     0   228
   EF  *   24.   24.   24.   24.   24.   24.   24.   24.   24.   24.
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   5

              JOB: BDM 8HR
              RUN: (MULTI-RUN)
        POLLUTANT: Carbon Monoxide
```

V.  RECEPTOR LOCATIONS AND MULTI-RUN AVERAGE CONCENTRATIONS

| RECEPTOR | COORDINATES (M) X | Y | Z | AVG (PPM) |
|---|---|---|---|---|
| 1. Recpt 1 | 50 | 50 | 1.8 | 1.1 |
| 2. Recpt 2 | 52 | 52 | 1.8 | 1.1 |
| 3. Recpt 3 | 53 | 53 | 1.8 | 1.1 |
| 4. Recpt 4 | -50 | -50 | 1.8 | 2.2 |
| 5. Recpt 5 | -52 | -52 | 1.8 | 2.2 |
| 6. Recpt 6 | -53 | -53 | 1.8 | 2.2 |
| 7. Recpt 7 | -50 | 50 | 1.8 | 1.1 |
| 8. Recpt 8 | -52 | 52 | 1.8 | 1.1 |
| 9. Recpt 9 | -53 | 53 | 1.8 | 1.1 |
| 10. Recpt 10 | 50 | -50 | 1.8 | 2.1 |
| 11. Recpt 11 | 52 | -52 | 1.8 | 2.1 |
| 12. Recpt 12 | 53 | -53 | 1.8 | 2.1 |

601 Pollasky Avenue, Suite 301 | Clovis, CA 93612

February 24, 2020

Shishu Bedi, President
BDM Builders, LLC
1528 Padres Drive
San Jose, CA 95125

**Subject: Results of a Biological Reconnaissance Survey Conducted for the BDM Builders, LLC Mixed-Use Development Project, 4645 East Jensen Avenue, Fresno, CA**

Dear Mr. Bedi:

This letter provides the results of a biological reconnaissance survey conducted on February 10, 2020 for a proposed Mixed-Use Development project (Project). The Project site is in Fresno County, California, located on an undeveloped 12.11-acre parcel (APN# 480-030-60S) at the northeast corner of the intersection of Jensen and Maple Avenues in southern Fresno (Figures 1 and 2 in Attachment A). Downtown Fresno is 3.2 miles northwest of the Project and State Route 99 is 1.5 miles to the east. The site is within Township 14 South, Section 13, Range 20 East, Mount Diablo Base and Meridian.

## PROJECT BACKGROUND

BDM Builders, LLC (BDM) will be submitting entitlement applications to the City of Fresno to allow for the construction of approximately 50,000 square feet of commercial/retail space, 15,000 square feet of mixed-use office space, an automated car wash, and a 150 unit multi-family residential development with an associated day care facility. QK was retained by BDM to identify any protected or special status biological resources within the Project site. Results of the reconnaissance survey are provided along with representative photographs (Attachment B) documenting existing conditions.

## METHODOLOGY

QK Assistant Environmental Scientist Sarah Yates visited the Project site on February 10, 2020 to conduct a reconnaissance level biological survey. The primary focus of the site visit was to detect any sign or presence of special-status species that are afforded protections from State and federal wildlife agencies. The Biological Survey Area (BSA) includes the Project site and a 500-foot survey buffer. (Figure 3 in Attachment A). Pedestrian transects spaced at intervals of approximately 30 feet apart were walked across accessible areas within the BSA to ensure 100% visual coverage. Inaccessible areas were scanned with binoculars. The survey was completed during daytime hours when there is a high probability of detecting special-status species and their sign. All spatial data was collected with an iPad using ESRI's Collector app and an EOS Arrow GPS unit capable of sub-meter positional accuracies.

# Appendix B
# Biological Reconnaissance Survey Results

## SURVEY RESULTS

### *General Site Conditions*

The Project site is mostly flat with some uneven slopes in the western section where the land has been artificially built up (Photographs 1 and 2 in Attachment B). An abandoned building pad is present near the north central border of the Project (Photograph 3 in Attachment B). To the north, east, and west, the site is surrounded by developed urban areas. Commercial and industrial property sits across Jensen Ave to the south. Non-native annual grasses dominate the site with some ruderal species established around the edges of the site (Photograph 4 in Attachment B). Trees present on-site consisted of naturally recruited, ornamental, and agricultural species including olive (*Olea europaea*), palm (*Washingtonia robusta*), Chinese elm (*Ulmus parviflora*), and crabapple (*Malus* sp.) (Photographs 5 and 6 Attachment B). The survey occurred during a time of year where some trees are in their dormant state, making species level identification difficult. Seventeen plant species were identified during the February 10, 2020 reconnaissance survey (Table 1).

**Table-1**
**Plant Species Observed,**
**BDM Mixed-Use Development Project, Fresno County, California**

| Scientific Name | Common Name |
|---|---|
| *Amsinckia* sp. | Fiddleneck |
| *Ambrosia psilostachya* | Ragweed |
| *Bromus diandrus* | Ripgut brome |
| *Calandrinia menziesii* | Red maids |
| *Centaurea solstitialis* | Yellow star thistle |
| *Claytonia parviflora* | Miners lettuce |
| *Cylindropuntia californica* | California cholla |
| *Cyperus eragrostis* | Tall flatsedge |
| *Erodium cicutarium* | Red stem filaree |
| *Festuca arundinacea* | Tall fescue |
| *Olea europaea* | Olive |
| *Opuntia basilaris* | Beavertail |
| *Salsola tragus* | Russian thistle |
| *Trifolium* sp. | Clover |
| *Typha domingensis* | Cattail |
| *Ulmus parvifolia* | Chinese elm |
| *Washingtonia robusta* | Fan palm |

### *Aquatic Resources*

The USFWS National Wetlands Inventory (USFWS 2020) indicated that a freshwater pond (PUBFx) was potentially present in the northwest corner of the site (Figure 4 in Attachment B). A 0.11-acre Drainage Basin was present in this corner of the Project site (Photograph 7 in Attachment B). In addition, a 0.006-acre mesic area was present near the southeastern corner (Figure 5 in Attachment A and Photograph 8 in Attachment B). The Drainage Basin was dry during the survey and contained the desiccated remains of hydrophytic and upland vegetation species including cattails *(Typha domingensis)* and Russian thistle (*Salsola tragus)*. The basin appears to be maintained, as evidenced by the flattened vegetation surrounding the still standing population of cattails near a drainage structure towards the feature's lowest point (Photograph 9 in Attachment B). Cattails were also present in the mesic area, covering 100% percent of the feature. This feature has no visible source of water, showed signs of being occasionally maintained, and was littered with trash and piles of dead vegetation (Photograph 10 in Attachment B,). The mesic area is adjacent to paved surfaces and private residences, as well as any utility infrastructure buried near the paved roadway. The cattails could be supported by runoff from any of these areas or from a leaking water source underground.

### *Wildlife Species Observed*

No special-status or protected wildlife species were observed during the February 10, 2020 reconnaissance survey. All wildlife observations are presented in Table 2.

Two unoccupied nests were observed within the Project site (Figure in Attachment A). A small passerine cup nest (PN1) was observed in an unidentified tree 260 feet east of the Drainage Basin (Photograph 5 in Attachment B). This nest was not occupied, and no birds were seen in the area. A stick nest (SN1) was present in a Eucalyptus tree (*Eucalyptus* sp.) 140 feet west of South Sierra Vista Avenue in the adjacent residential neighborhood. That stick nest was in a dilapidated condition and was in a crook created by broken tree branches (Photograph 11 in Attachment B). That nest was not occupied but an American crow (*Corvus brachyrhynchos)* was seen in the area, which began vocalizing as the surveyor approached the nest tree, indicating that it might become occupied by that species.

An eastern fox squirrel was observed running along the fencing that marks the northern border of the Project, 123 feet northeast of nest PN1 (Figure 5 in Attachment A). A complex of small mammal burrows, likely pocket gopher (*Thomomys* sp.), was present near the northern border of the site, approximately 60 feet northeast of nest PN1 (Photograph 12 in Attachment B,). One domestic cat (*Felis* sp.) and one small dog (*Canis* sp.) were observed on-site (Photograph 13 in Attachment B). Multiple domestic dogs were observed beyond the Project site boundary in the private residences that surround the site. Pawprints and evidence of digging was found at the entrances of some burrows and disturbed areas were observed throughout the site that appeared to be from canine digging. The entire site appears to be regularly maintained by mowing and plowing.

**Table-2**
**Wildlife Species Observed,**
**BDM Mixed-Use Development Project, Fresno County, California**

| Scientific Name | Common Name |
|---|---|
| *Corvus brachyrhynchos* | American Crow |
| *Canis* sp. | Domestic Dog |
| *Felis* sp. | Domestic Cat |
| *Aphelocoma californica* | Western Scrub Jay |
| *Zenaida macroura* | Mourning Dove |
| *Sciurus niger* | Eastern Fox Squirrel |

## CONCLUSION

A biological reconnaissance survey was conducted at the BDM Mixed-Use Development Project on February 10, 2020. The survey was conducted to identify the presence or potential for presence of special-status plant and animal species as well as other sensitive biological resources. No special-status species were observed. The vegetation in the survey area consisted of ruderal habitat with evidence of disturbance to the site by plowing, mowing, and domestic animal digging. The survey did not indicate that the on-site habitat supports any special-status or protected wildlife species. Two aquatic resources, a drainage basin and a small mesic area, were present on-site. Both features contained hydrophytic vegetation. However, the mesic area did not exhibit characteristics of a wetland and the basin is artificial and managed as a groundwater recharge area. Development of either of these areas would not require permits.

Two nests were present on the site, one inactive passerine nest and one inactive raptor nest. An eastern fox squirrel was observed along the northern border of the site, along with a complex of small mammal burrows. Portions of the site appear to be maintained regularly by mowing and plowing which impedes the ability of burrowing animals to become established in this habitat. The surrounding private residences were home to many domestic cats and dogs that were observed on and off the Project site. The presence of these animals may impede the ability of burrowing animals and nesting birds to be successful. The site is surrounded by residential and commercial development lacking grassland or other habitat that would support sensitive wildlife. The Project site is therefore unlikely to be used as potential habitat for transient foragers or resident sensitive wildlife.

If you have any questions regarding the contents of this letter report or need additional information, please contact us at (559) 449-2400. It has been a pleasure to assist you with this Project.

Sincerely,

Dylan Ayers
Associate Environmental Scientist

Curtis Uptain
Principal Environmental Scientist

Enclosures: Attachment A: Figures
Attachment B: Photographs

cc: Jerome Keene,

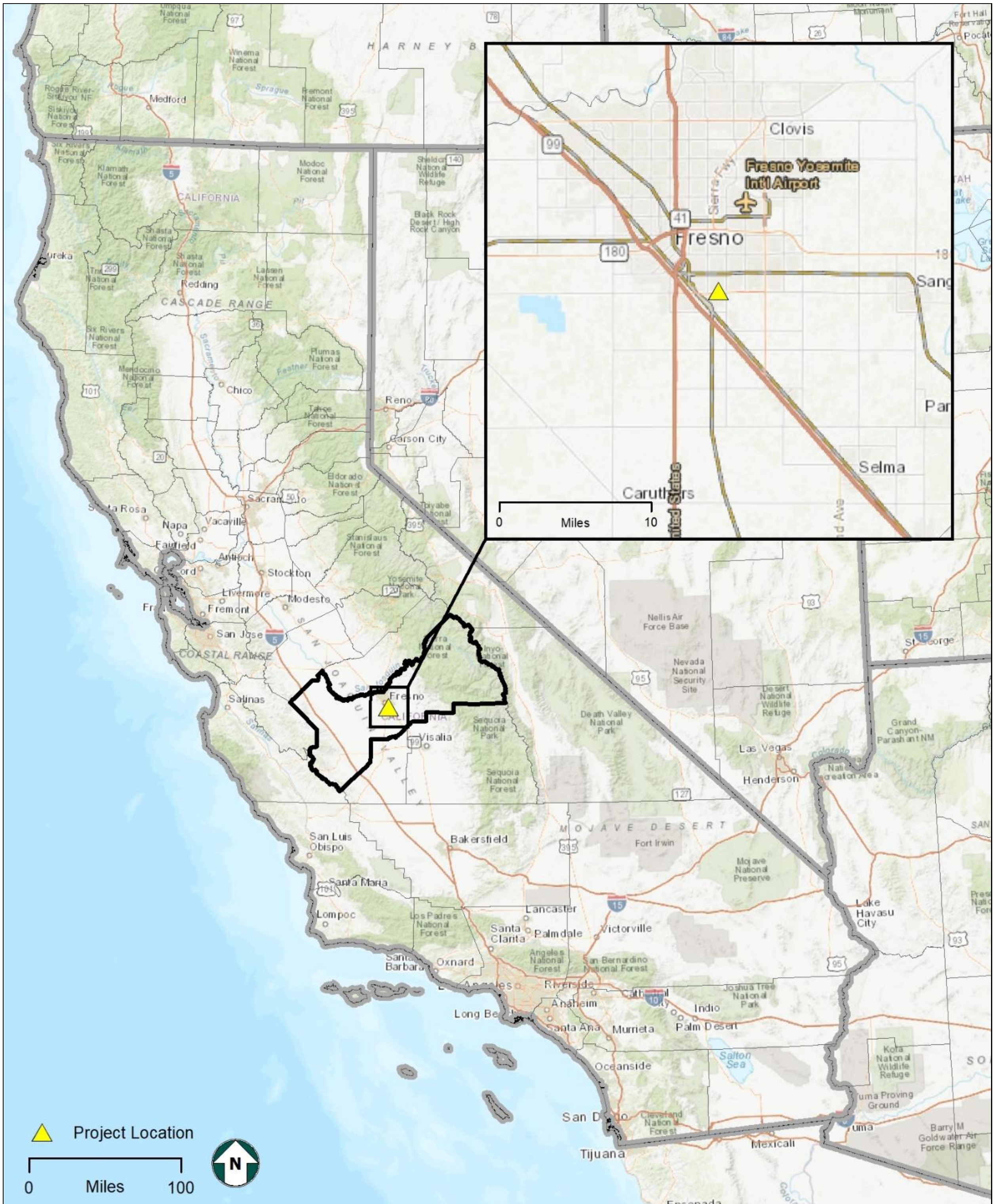
200061 /1.1
DA/ SY/

## REFERENCES

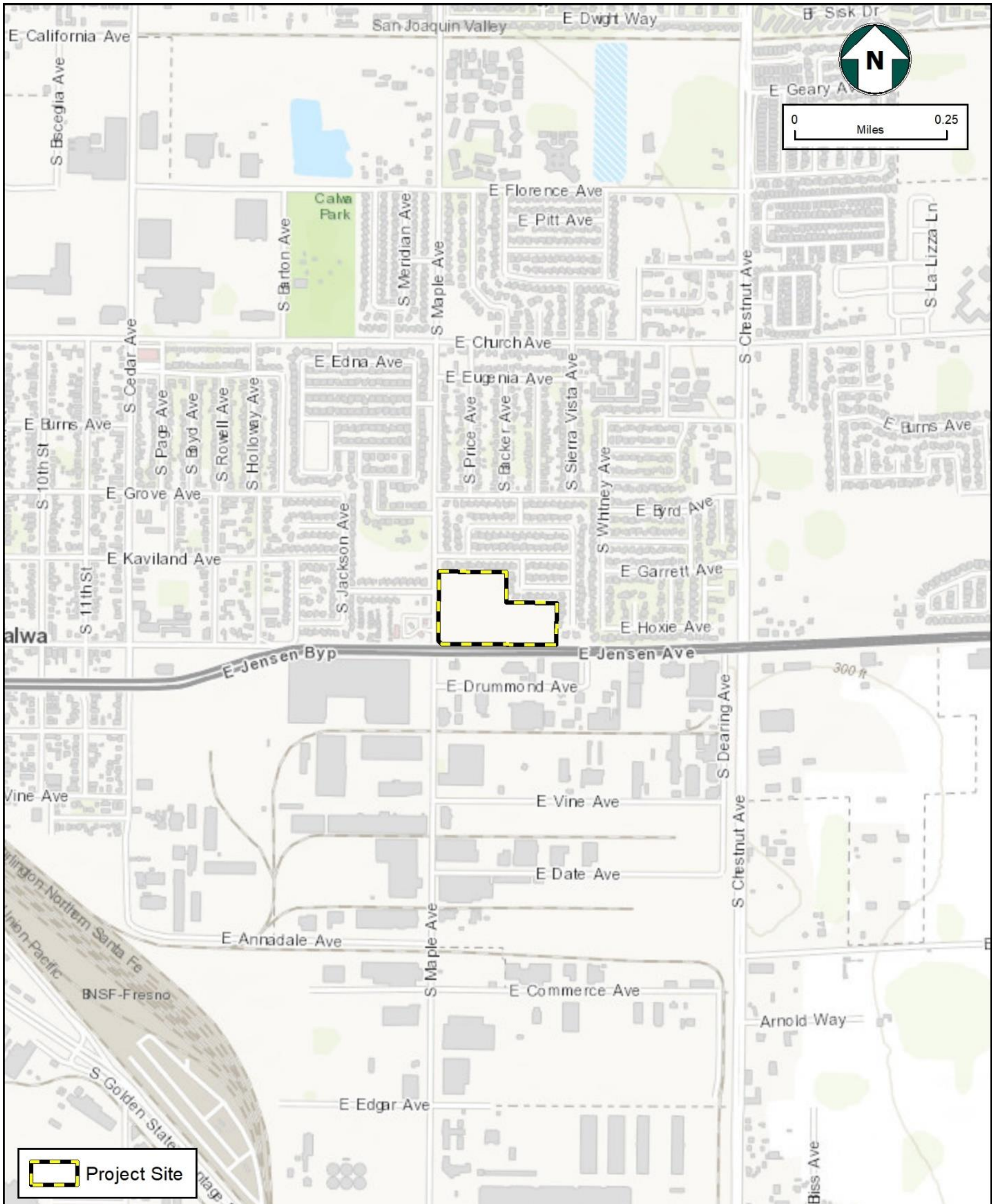
U.S. Fish and Wildlife Service (USFWS). 2020. National Wetlands Inventory. GIS Data. http://www.fws.gov/wetlands/Data/mapper.html

# APPENDIX A

## FIGURES
## BDM MIXED-USE DEVELOPMENT PROJECT




# Figure 1
## Regional Map
## BDM Builders LLC, Mixed Use Development Project, Fresno County, California




QK

# Figure 2
## Vicinity Map
## BDM Builders LLC, Mixed Use Development Project, Fresno County, California


Figure 3
Project Site and Biological Survey Area (BSA),
BDM Builders LLC, Mixed Use Development Project,
Fresno County, California

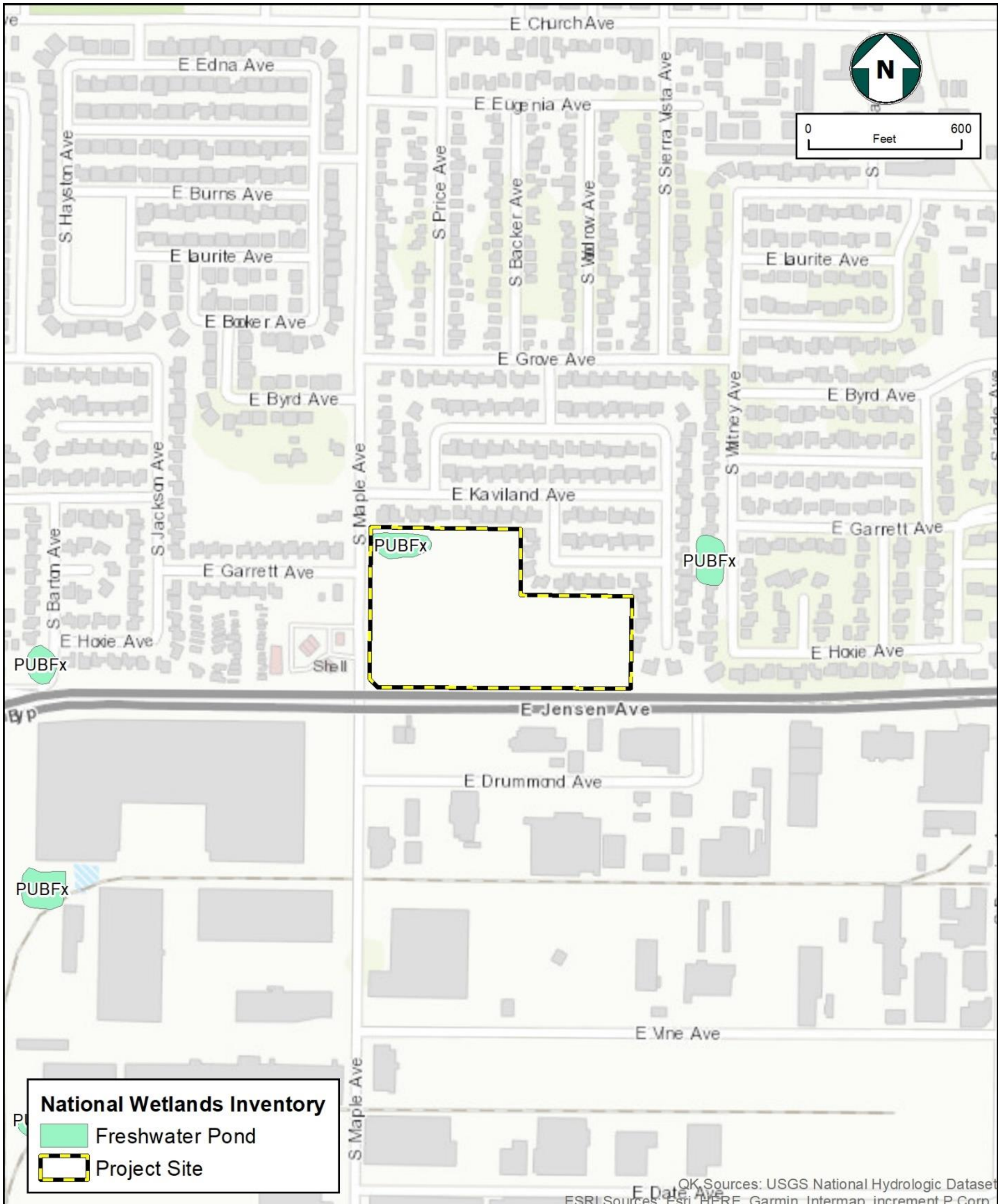



**Figure 4**
**Biological Resources Map,**
**BDM Builders LLC, Mixed Use Development Project,**
**Fresno County, California**

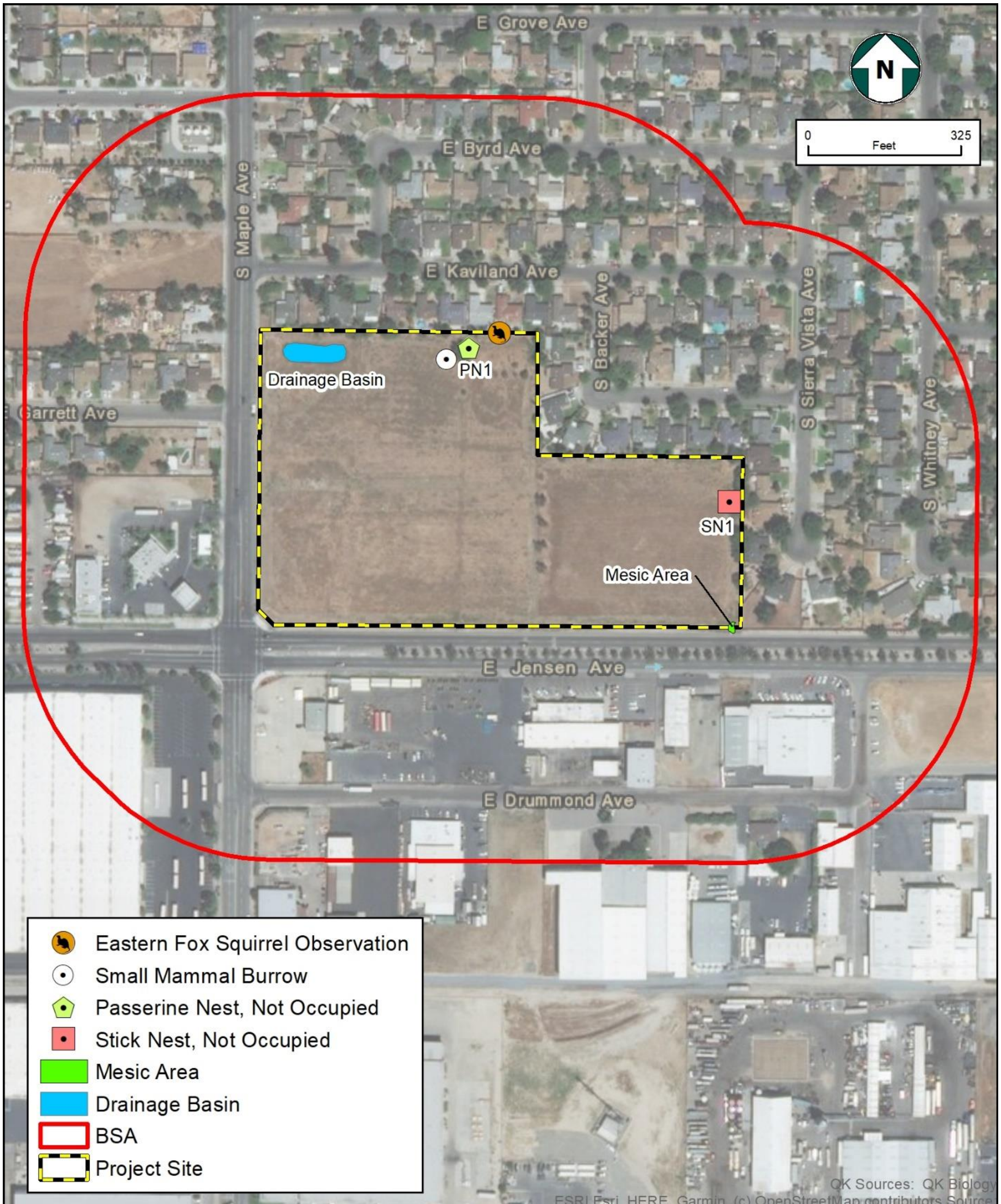



**Figure 5**
**Biological Resources Map,**
**BDM Builders LLC, Mixed Use Development Project,**
**Fresno County, California**

# APPENDIX B

## PHOTOGRAPHS
## BDM MIXED-USE DEVELOPMENT PROJECT

**Photograph 1**: View of southern border of Project site showing built up land near intersection of Jensen and Maple Avenues.
36.707053, -119.744656 facing west.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 2**: View showing middle of site showing land sloping up on left hand side of photo.
36.707053, -119.744656 facing north.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 3**: View of abandoned building pad near center of site, looking towards Maple Ave.
36.707997, -119.743531 facing west.
Photograph taken by Sarah Yates on February 10, 2020.

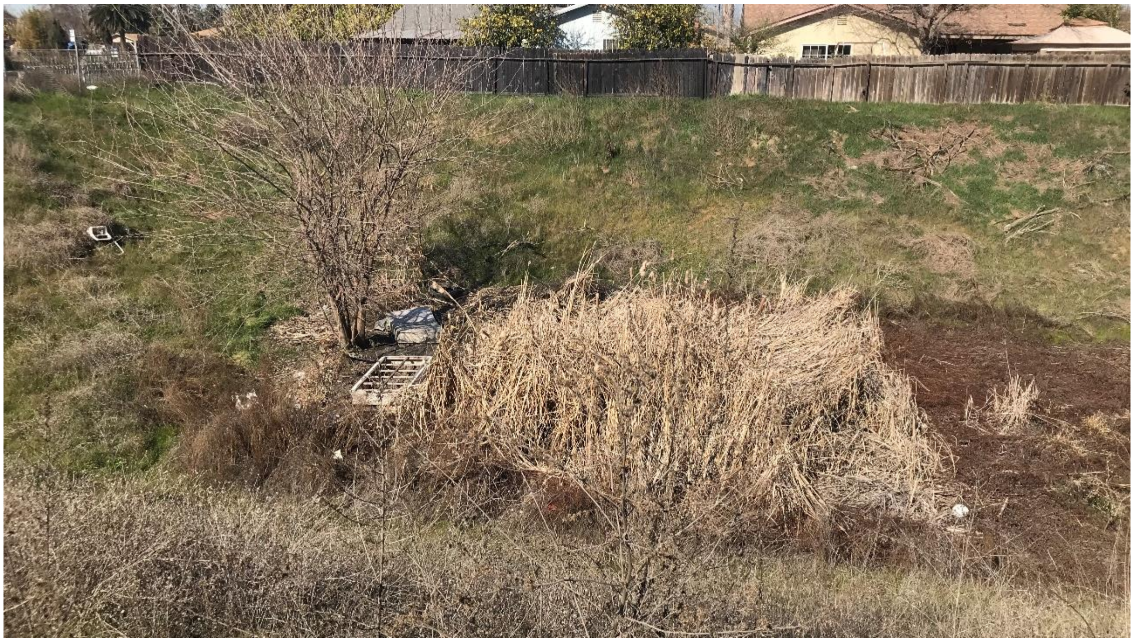
**Photograph 4**: View of annual grasses and ruderal species near edge of site.
36.708006, -119.743528 facing north.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 5**: View of tree species on-site. Unknown tree pictured in center. PN1 also pictured.
37.342958, -120.447314 facing west.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 6**: View of 4 olive trees that exist in a straight, north-south line down center of the site.
36.707053, -119.742053facing west.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 7**: View of Mesic Area dominated by cattails in southeast corner of the site.
36.706975, -119.741986 facing west.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 8**: View of Mesic Area dominated by cattails in southeast corner of the site.
36.706975, -119.741986 facing west.
Photograph taken by Sarah Yates on February 10, 2020.



**Photograph 9**: View of cattail population in the Drainage Basin. Drainage structure also pictured.
36.707653, -119.745392 facing north.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 10**: View of Mesic Area with trash and piled up dead vegetation.
36.707006, -119.742025 facing south.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 11**: View of SN1 in Eucalyptus tree.
36.707764, -119.742089, facing upwards.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 12**:
36.708536, -119.744139 facing northwest.
Photograph taken by Sarah Yates on February 10, 2020.

**Photograph 13**: View of domestic dog observed near eastern border of the site.
36.707053, -119742053 facing northwest.
Photograph taken by Sarah Yates on February 10, 2020.

# Appendix C
# Cultural Resources Technical Memorandum

# TECHNICAL MEMORANDUM

**Date:** February 18, 2020

**Project:** Cultural resources records search- Multi-Use Development Project, Fresno County, CA

**To:** Jaymie Brauer, Principal Planner

**From:** Robert Parr, MS, RPA, Senior Archaeologist

**Subject:** Cultural Resources Records Search Results (RS#20-071)

## Background

A cultural resource records search (RS #20-071) was conducted at the Southern San Joaquin Valley Information Center, CSU Bakersfield for the above referenced Project in the City of Fresno, Fresno County to determine whether the proposed project would impact cultural resources.

## Location

The Project is located in the southeast ¼ of Section of 13, T.14 S, R.20 E (MDB&M) (Figures 1-4).

## Project Description

The Project includes the construction of approximately 50,000 square feet of retail and service commercial uses (i.e., restaurants and food sales), 15,000 square feet of general and medical office space, an automated car wash, 150 multi-family residential units (containing a total of 38 two bedroom and 112 one bedroom units) with an associated day care center. The Project is located on the northeast corner of Maple Avenue and Jensen Avenue (APN: 480-030-60S).

## Results

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 has never been surveyed for cultural resources and it is not known if any exist on it.

Two cultural resource studies have been conducted within a half mile of the project (Brady and Hobbs 2003; Kaptain and Matzen 2005).

One cultural resource has been recorded within a half mile of the project, the historic Central Canal (P-10-004677). The proposed Project would not impact this historic resource.

A Sacred Lands File request was also submitted to the Native American Heritage Commission. A response dated February 18, 2020 indicates negative results (see Attachment B).

**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, portions of the Project construction would be conducted within the existing road rights of way and previously disturbed lands. 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 to be included on the final site plans and all construction plans and specs. 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.

(s) Robert E. Parr, MS, RPA
Senior Archaeologist

Attachment A- Figures
Attachment B- Sacred Lands File Response by the Native American Heritage Commission

**References**

*(all reports on file at the Southern San Joaquin Valley Information Center, California State University, Bakersfield)*

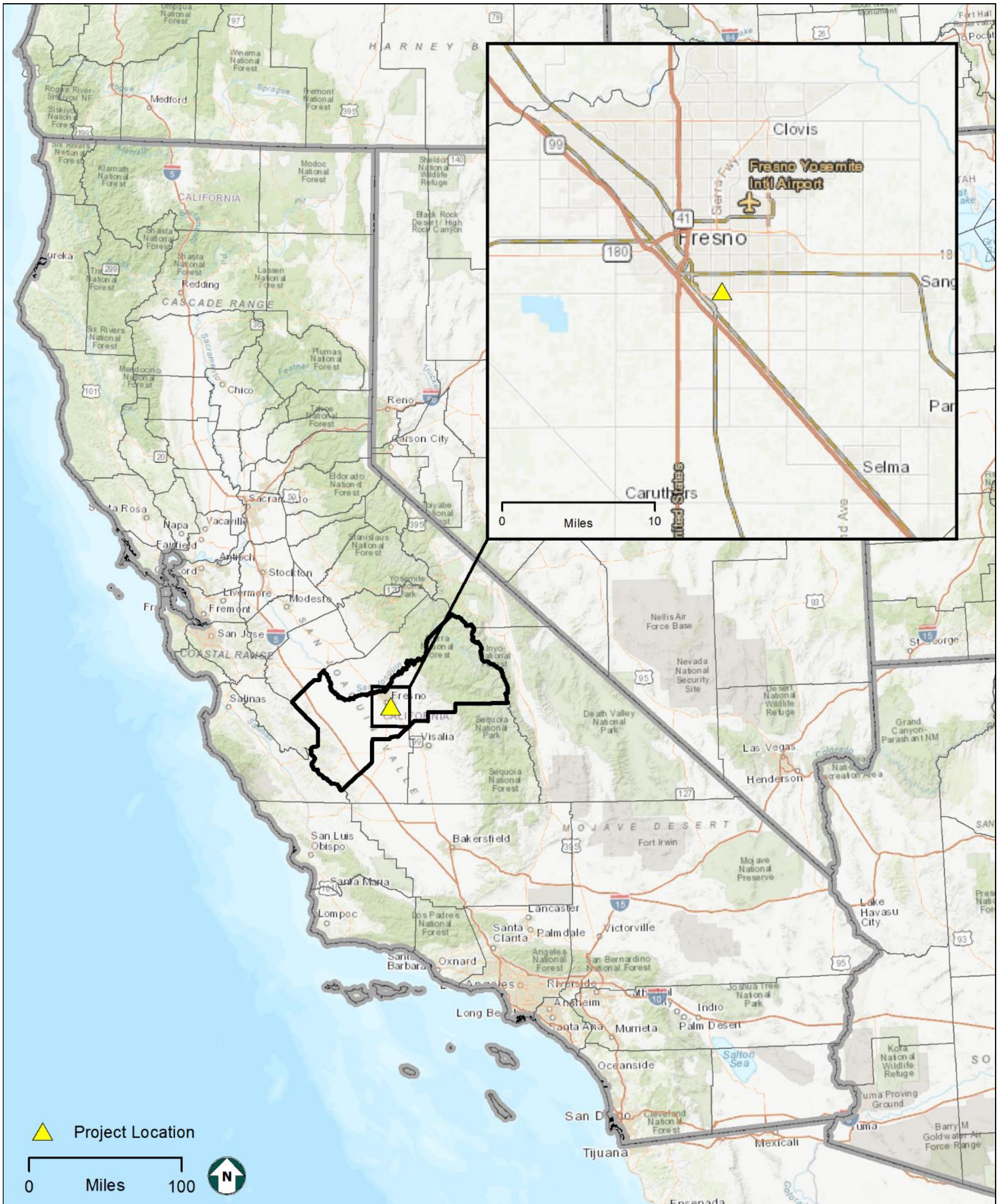
Brady, Jon and Kelly Hobbs

2003 Historic Property Survey for the HOME Project for Self Help on South Willow & East Jensen Avenues in Fresno, California. (FR—02504)

Kaptain, Neal and Ben Matzen

2005 A Cultural and Paleontological Resources Study for the KB Home Summit Hills Project. (FR-02143)

# ATTACHMENT A
# PROJECT FIGURES




# Figure 1
# Regional Location

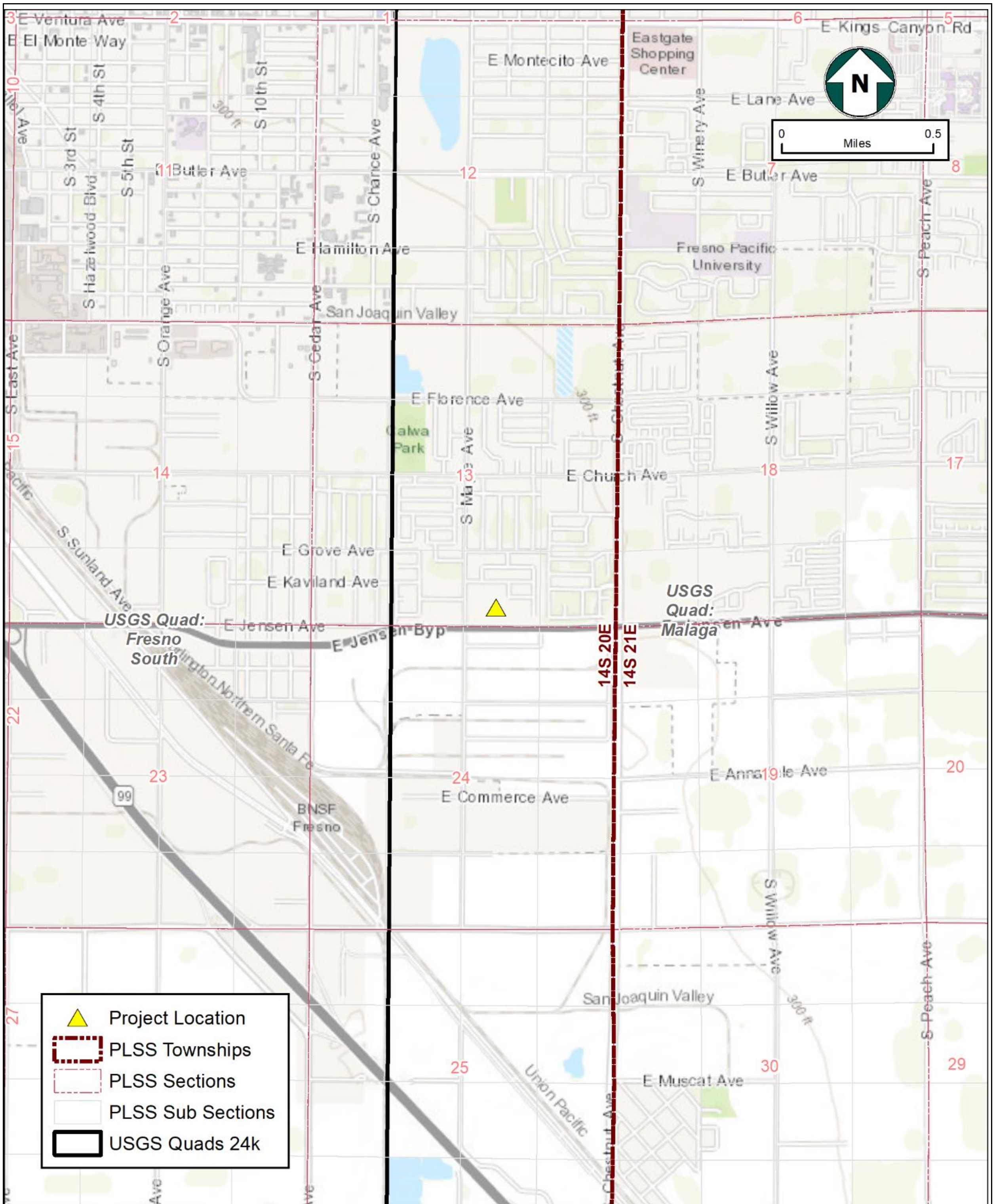



**Figure -2**
**PLSS/USGS Quad**


Figure -3
Project Site


Figure -4
Topo Map

# Attachment B-
# Sacred Lands File Response by the
# Native American Heritage Commission

# NATIVE AMERICAN HERITAGE COMMISSION



NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 18, 2020

Jaymie Brauer
QK

Via Email to: Jaymie.Brauer@qkinc.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, 129-Unit Multiple Family Housing Project, Fresno County

Dear Ms. Brauer:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

*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 AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (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 that 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 any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was <u>negative</u>.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are 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 will 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: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
*Cultural Resources Analyst*

Attachment

**Native American Heritage Commission**
**Native American Contacts List**
**February 18, 2020**

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Kings River Choinumni Farm Tribe
Stan Alec
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(559) 822-2693 Fax

Table Mountain Rancheria
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rpennell@tmr.org
(559) 325-0351
(559) 325-0394 Fax

**This list is current 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, or Section 5097.98 of the Public Resources Code.**

**This list is only applicable for contacting local Native Americans Tribes for the proposed:**
**129-Unit Multiple Family Housing Project, Fresno County.**

**Native American Heritage Commission**
**Native American Contacts List**
**February 18, 2020**

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue — Choinumni
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davealvarez@sbcglobal.net
(559) 217-0396 Cell

Traditional Choinumni Tribe
Rick Osborne, Cultural Resources
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Fresno ,CA 93720
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lemek@att.net

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokuts
Salinas ,CA 93906 — Mono
kwood8934@aol.com — Wuksache
(831) 443-9702

**This list is current 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, or Section 5097.98 of the Public Resources Code.**

**This list is only applicable for contacting local Native Americans Tribes for the proposed:**
**129-Unit Multiple Family Housing Project, Fresno County.**

# Appendix D
# Traffic Impact Assessment/Addendum

# Revised Traffic Impact Analysis

## BDM Builders
## Mixed-Use Development

**Located on the Northeast Corner of Maple Avenue and Jensen Avenue**

**In the City of Fresno, California**

***Prepared for:***

BDM Builders
177 Park Avenue, Suite 200
San Jose, CA 95113

January 28, 2021

Project No. 004-109

JLB TRAFFIC ENGINEERING, INC.

***Traffic Engineering, Transportation Planning, & Parking Solutions***

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Phone: (559) 570-8991
www.JLBtraffic.com

JLB TRAFFIC ENGINEERING, INC.

*Traffic Engineering, Transportation Planning, & Parking Solutions*

# Revised Traffic Impact Analysis

## For the BDM Builders Mixed-Use Development located on the Northeast Corner of Maple Avenue and Jensen Avenue

In the City of Fresno, CA

January 28, 2021

This Revised Traffic Impact Analysis has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions, and decisions are based.

Prepared by:

Jose Luis Benavides, PE, TE

President

REGISTERED PROFESSIONAL ENGINEER
JOSE LUIS BENAVIDES
No.T 2328
Exp:06/30/21
TRAFFIC
STATE OF CALIFORNIA

JLB TRAFFIC ENGINEERING, INC.

*Traffic Engineering, Transportation Planning, & Parking Solutions*

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# Table of Contents

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# List of Tables

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# Introduction and Summary

## Introduction

This report describes a Revised Traffic Impact Analysis (TIA) prepared by JLB Traffic Engineering, Inc. (JLB) for the proposed BDM Builders Mixed-Use Development (Project) located on the northeast corner of Maple Avenue and Jensen Avenue in the City of Fresno. The Project proposes an integrated mixed-use development of a 12.18-acre site. The mixed-use development will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Based on information provided to JLB, the Project will undergo a General Plan Amendment with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3). Figure 1 shows the location of the proposed Project site relative to the surrounding roadway network.

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term and long-term roadway and circulation needs, determine potential project conditions, and identify any critical traffic issues that should be addressed in the on-going planning process. The TIA primarily focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. The Scope of Work was prepared via consultation with City of Fresno, County of Fresno and Caltrans staff.

Senate Bill 743, codified as Public Resources Code 21099, mandated changes to the California Environmental Quality Act (CEQA) Guidelines regarding the analysis of transportation impacts, which resulted in the adoption of CEQA Guidelines Section 15064.3. Under both PRC Section 21099 and CEQA Guidelines Section 15064.3, automobile delay, as described by Level of Service (LOS) or a similar metric, is no longer a significant environmental impact and is not evaluated under CEQA.

However, pursuant to PRC Section 21099(b)(4), lead agencies are not precluded from applying “local general plan policies, zoning codes, conditions of approval, or any other planning requirements pursuant to the police power or any other authority.”

The Fresno General Plan for the City of Fresno, adopted in December 2014, includes objectives and policies in the Mobility and Transportation Element which set forth the required LOS standards for new development projects within the City in order to make efficient use of the City’s existing and proposed transportation system and to ensure the planning and provision of adequate resources to maintain it. As such, the evaluation of LOS in accordance with the standards establish by the LOS policy of the City of Fresno, County of Fresno, and Caltrans, is set forth herein for the purposes of identifying infrastructure needs and any corresponding project conditions that may be required to address those impacts.

## Summary

The potential traffic impacts of the proposed Project were evaluated in accordance with the standards set forth by the Level of Service (LOS) policy of the City of Fresno, County of Fresno and Caltrans.

### *Existing Traffic Conditions*

- JLB conducted a search of the Statewide Integrated Traffic Records System (SWITRS) to review collision reports for the most recent five-year period (January 1, 2014 to December 31, 2018).
- In the five-year period, a total of 34 collisions were reported within the influence zone of the existing study intersections. Based on this data, it is recommended that the City of Fresno analyze the intersections of Maple Avenue and Jensen Avenue as well as Chestnut Avenue and Jensen Avenue as part of its current Systematic Safety Analysis. While the average of broadside collisions per year at these locations is low (average one per year), an analysis of these intersections will help to determine if any of the broadside collisions at the aforementioned locations could be reduced.
- At present, the intersection of Chestnut Avenue and Florence Avenue exceeds its acceptable LOS threshold during both peak periods. To improve the LOS of this intersection, it is recommended that Florence Avenue access to Chestnut Avenue be modified from full access to limited left-in, right-in and right-out access only. Additional details as to the recommended improvements for this intersection under this scenario are presented later in the Report.

### *Existing plus Project Traffic Conditions*

- Early versions of the Project Site Plan had the proposed Driveway 2 (left-in, right-in, right-out) along Jensen Avenue closer to Maple Avenue. However, based on the SimTraffic Queuing Reports, JLB recommended that Driveway 2 be moved further east to the placement presented in the latest Project Site Plan. Since the changes to the Project Site Plan have been incorporated, JLB is in support of the location of the proposed driveways and types of access.
- It is recommended that a corner sight distance evaluation for each of the proposed driveways be taken into account to ensure the safety of pedestrians and bicyclists along the future trail along the north side of Jensen Avenue.
- Internally within the Project site, it is recommended that a STOP sign for northbound traffic be installed at the northern terminus of the driveway aisle that serves Project Driveway 2. This should help improve traffic safety across this internal intersection while also reducing speeds.
- At buildout, the proposed Project is estimated to generate a maximum of 10,432 daily trips, 727 AM peak hour trips and 833 PM peak hour total trips (before internal capture and pass-by trip reductions are taken into account). The proposed Fresno General Plan land use is estimated to generate a maximum of 2,916 daily, 121 AM peak hour and 286 PM peak hour total trips. Compared to the proposed Fresno General Plan, the proposed Project is estimated to yield greater trips by 7,516 daily, 606 AM peak hour and 547 PM peak hour trips.
- This analysis considers reductions in trip generation as a result of internal capture and applies pass-by trip reductions pursuant to the 3rd Edition of the Trip Generation Handbook published by ITE. After internal capture trip reductions are applied, the proposed Project is estimated to generate a maximum of 8,486 daily, 625 AM peak hour and 544 PM peak hour total driveway trips (before pass-by trip reductions are taken into account). Lastly, after applying pass-by trip reductions, the maximum net

new trips that the Project is estimated to generate are 7,306 daily trips, 471 AM peak hour trips and 418 PM peak hour trips.

- It is recommended that the Project implement a Class II Bike Lane along its frontage to Maple Avenue and a Class I Bike Path along its frontage to Jensen Avenue.
- It is recommended that the Project implement walkways that are ADA compliant along its frontages to Maple Avenue and Jensen Avenue.
- Based on the Fresno COG model run, the Project is anticipated to generate an average of 6.68 VMT per trip. However, the Fresno COG model does not take into account for pass-by trips. Thus, it is estimated that the actual VMT per trip will be to some extent lower than that presented in the Fresno COG model.
- Under this scenario, the intersection of Chestnut Avenue and Florence Avenue is projected to exceed its acceptable LOS threshold during both peak periods. To improve the LOS of this intersection, it is recommended that Florence Avenue access to Chestnut Avenue be modified from full access to limited left-in, right-in and right-out access only. Additional details as to the recommended improvements for this intersection under this scenario are presented later in the Report.

### *Near Term plus Project Traffic Conditions*

- The total trip generation for the Near Term Projects is 42,925 daily trips, 6,381 AM peak hour trips and 4,572 PM peak hour trips.
- Under this scenario, the intersections of Chestnut Avenue and Florence Avenue and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that additional lanes be accommodated and that access and traffic control mechanisms be modified. Additional details as to the recommended improvements for these intersections under this scenario are presented later in the Report.

### *Cumulative Year 2035 No Project Traffic Conditions*

- Under this scenario, the intersections of Chestnut Avenue and Florence Avenue, Maple Avenue and Jensen Avenue, Chestnut Avenue and Jensen Avenue, and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that additional lanes be accommodated and that access and traffic control mechanisms be modified. Additional details as to the recommended improvements for these intersections under this scenario are presented later in the Report.

### *Cumulative Year 2035 plus Project Traffic Conditions*

- Under this scenario, the intersections of Chestnut Avenue and Florence Avenue, Maple Avenue and Jensen Avenue, Chestnut Avenue and Jensen Avenue, and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that additional lanes be accommodated and that access and traffic control mechanisms be modified. Additional details as to the recommended improvements for these intersections under this scenario are presented later in the Report.

### *Queuing Analysis*

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

### *Project's Equitable Fair Share*

- It is recommended that the Project contribute its equitable fair share as listed in Table XVI for the future improvements necessary at study intersections projected to fall below their LOS threshold and which are not covered by an existing impact fee program.

## Scope of Work

The TIA focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. On November 6, 2019, a Draft Scope of Work for the preparation of a Traffic Impact Analysis for this Project was provided to the City of Fresno, County of Fresno and Caltrans for their review and comment. Any comments to the proposed Scope of Work were to be provided by November 27, 2019.

On November 14, 2019, the City of Fresno responded to the Draft Scope of Work and requested that they be provided the Project's trip trace. On December 12, 2019, JLB provided the City of Fresno with the Project Select Zone model plots. On December 18, 2019, the City of Fresno requested that the TIA include a qualitative vehicle-miles traveled (VMT) analysis. On November 22, 2019, the County of Fresno responded to the Draft Scope of Work. The County of Fresno requested that, while they are waiting to be provided with the Project's trip trace, the TIA should include the intersections of Dearing Avenue and Jensen Avenue, Maple Avenue and Vine Avenue, and Maple Avenue and Date Avenue. After further email correspondence between JLB and the County of Fresno, the County of Fresno withdrew their request to include the intersections of Dearing Avenue and Jensen Avenue, Maple Avenue and Vine Avenue, and Maple Avenue and Date Avenue in the analysis. On January 8, 2020, Caltrans responded and approved the Draft Scope of Work as presented. Based on the comments received, the TIA includes a qualitative VMT analysis as requested by the City of Fresno. The Draft Scope of Work and the comments received from the lead agency and responsible agencies are included in Appendix A.

## Study Facilities

The existing peak hour turning movement volume counts and segment volume counts were conducted at the study intersections and segments in October-November 2019 and January 2020, while schools in the vicinity of the proposed Project were in session. The intersection turning movement counts included pedestrian volumes. The traffic counts for the existing study intersections and segments are contained in Appendix B. The existing intersection turning movement volumes, intersection geometrics and traffic controls are illustrated in Figure 2.

### *Study Intersections*

1. Chestnut Avenue / Florence Avenue
2. Maple Avenue / Grove Avenue
3. Maple Avenue / Jensen Avenue
4. Project Driveway 1 / Jensen Avenue (right-in, right out)
5. Project Driveway 2 / Jensen Avenue (left-in, right-in and right-out)
6. Project Driveway 3 / Jensen Avenue (right-in, right-out)
7. Chestnut Avenue / Jensen Avenue
8. Maple Avenue / Annadale Avenue
9. Maple Avenue / North Avenue

### *Project Only Trips to State Facilities*

1. State Route 99 at Jensen Avenue Interchange

## Study Scenarios

### *Existing Traffic Conditions*

This scenario evaluates the Existing Traffic Conditions based on existing traffic volumes and roadway conditions from traffic counts and field surveys conducted in October-November 2019 and January 2020.

### *Existing plus Project Traffic Conditions*

This scenario evaluates total traffic volumes and roadway conditions based on the Existing plus Project Traffic Conditions. The Existing plus Project traffic volumes were obtained by adding the Net New Project Trips to the Existing Traffic Conditions scenario. The Net New Project Trips to the study facilities were developed based on existing travel patterns, the Fresno COG Project Select Zone, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the Fresno General Plan Circulation Element in the vicinity of the Project. The Fresno COG Models for the Project Select Zone are contained in Appendix C.

### *Near Term plus Project Traffic Conditions*

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term plus Project Traffic Conditions. The Near Term plus Project traffic volumes were obtained by adding the Near Term related trips to the Existing plus Project Traffic Conditions scenario.

### *Cumulative Year 2035 No Project Traffic Conditions*

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2035 No Project Traffic Conditions. The Cumulative Year 2035 No Project traffic volumes were obtained by subtracting the Net New Project Trips from the Cumulative Year 2035 plus Project Traffic Conditions scenario.

### *Cumulative Year 2035 plus Project Traffic Conditions*

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2035 plus Project Traffic Conditions. The Cumulative Year 2035 plus Project traffic volumes were obtained from the Fresno COG traffic model runs (Base Year 2019 and Cumulative Year 2035) and existing traffic counts. Under this scenario, the increment method, as recommended by the Model Steering Committee was utilized to determine the Cumulative Year 2035 plus Project traffic volumes. The Fresno COG Models are contained in Appendix C.

## Level of Service Analysis Methodology

Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from "A" to "F", with "A" indicating no congestion of any kind and "F" indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) 6th Edition is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D.

## Criteria of Significance

The Fresno General Plan (2014) has established various degrees of acceptable LOS on its major streets, which are dependent on four (4) Traffic Impact Zones (TIZ) within the City. The standard LOS threshold for TIZ I is LOS F, that for TIZ II is LOS E, that for TIZ III is LOS D, and that for TIZ IV is LOS E. Additionally, the 2035 MEIR made findings of overriding consideration to allow a lower LOS threshold than that established by the underlying TIZ's. For those cases in which a LOS criterion for a roadway segment differs from that of the underlying TIZ, such criteria are identified in the roadway description. In this analysis, study intersections located north of Jensen Avenue fall within TIZ III and utilize LOS D to evaluate the potential significance of LOS impacts pursuant to the Fresno General Plan. Additionally, study intersections located south of Jensen Avenue fall within TIZ IV and utilize LOS E to evaluate the potential significance of LOS impacts pursuant to the Fresno General Plan.

The County of Fresno has established LOS C as the acceptable level of traffic congestion on county roads and streets that fall entirely outside the Sphere of Influence (SOI) of a City. For those areas that fall within the SOI of a City, the LOS criteria of the City are the criteria of significance used in this report. LOS C is used to evaluate the potential significance of LOS impacts to Fresno County intersections that fall outside the City of Fresno SOI. In this case, all study facilities fall within the City of Fresno SOI, therefore, the City of Fresno LOS is utilized.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities consistent with the *Caltrans Guide for the Preparation of Traffic Impact Studies* dated December 2002. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. In this TIA, however, all study facilities fall within the City of Fresno SOI. Therefore, the City of Fresno LOS threshold is utilized.

## Operational Analysis Assumptions and Defaults

The following operational analysis values, assumptions and defaults were used in this study to ensure a consistent analysis of LOS among the various scenarios.

- Yellow time consistent with the California Manual of Uniform Traffic Control Devices (CA MUTCD) based on approach speeds
- Yellow time of 3.2 seconds for left-turn phases
- All-red clearance intervals of 1.0 second for all phases
- Walk intervals of 7.0 seconds
- Flashing Don't Walk based on 3.5 feet/second walking speed with yellow plus all-red clearance subtracted and 2.0 seconds added
- All new or modified signals utilize protective left-turn phasing
- A 3 percent heavy vehicle factor
- The number of observed pedestrians at existing intersections was utilized under all study scenarios
- An average of 3 pedestrian calls per hour at signalized intersections
- At existing intersections, the observed approach Peak Hour Factor (PHF) is utilized in the Existing, Existing plus Project, and Near Term plus Project scenarios.
- A PHF of 0.92, or the existing PHF if higher, is utilized for all intersections under the Cumulative Year 2035 scenarios.

# Existing Traffic Conditions

## Roadway Network

The Project site and surrounding study area are illustrated in Figure 1. Important roadways serving the Project are discussed below.

***Chestnut Avenue*** is an existing north-south four-lane divided arterial in the vicinity of the proposed Project site. In this area, Chestnut Avenue exists as a four-lane divided arterial between Ashlan Avenue and the State Route 180 interchange, a six-lane divided arterial between the State Route 180 interchange and Belmont Avenue, a four-lane divided arterial between Belmont Avenue and Central Avenue, a two-lane undivided arterial south of Central Avenue through the City of Fresno SOI. The Fresno General Plan Circulation Element designates Chestnut Avenue as four-lane divided arterial between Ashlan Avenue and North Avenue.

***Florence Avenue*** is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project site. In this area, Florence Avenue exists as a two-lane undivided local roadway east of Cedar Avenue through Chestnut Avenue. The Fresno General Plan Circulation Element designates Florence Avenue as local roadway between Cedar Avenue and Chestnut Avenue.

***Maple Avenue*** is an existing north-south four-lane undivided collector adjacent to the proposed Project site. In this area, Maple Avenue exists as a two-lane collector divided by a two-way left-turn lane between Dakota Avenue and Shields Avenue, a four-lane undivided collector between Shields Avenue and Normal Avenue, a two-lane collector divided by a two-way left-turn lane between Normal Avenue and Olive Avenue, a four-lane undivided collector between Olive Avenue and Edgar Avenue, and a three-lane undivided collector between Edgar Avenue and North Avenue. The Fresno General Plan Circulation Element designates Maple Avenue as a four-lane collector between Dakota Avenue and North Avenue.

***Grove Avenue*** is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project site. In this area, Grove Avenue exists as a two-lane undivided local roadway between Maple Avenue and Sierra Vista Avenue. The Fresno General Plan Circulation Element designates Grove Avenue as a local roadway between Maple Avenue and Sierra Vista Avenue.

***Jensen Avenue*** is an existing east-west four-lane divided super arterial adjacent to the proposed Project site. In this area, Jensen Avenue is a two-lane undivided arterial between Marks Avenue and Fig Avenue and a four-lane divided arterial east of Fig Avenue throughout the City of Fresno SOI. The Fresno General Plan Circulation Element designates Jensen Avenue as a four-lane divided arterial between Marks Avenue and the State Route 99 interchange, a four-lane divided super arterial between the State Route 99 interchange and Orange Avenue, and a six-lane divided super arterial between Orange Avenue and Highland Avenue.

***Annadale Avenue*** is an east-west two-lane undivided local roadway in the vicinity of the proposed Project site. In this area, Annadale Avenue exists a two-lane undivided local roadway between Cedar Avenue and Maple Avenue. The Fresno General Plan Circulation Element designates Maple Avenue as a two-lane local roadway between Cedar Avenue and Maple Avenue.

***North Avenue*** is an east-west two-lane undivided arterial in the vicinity of the proposed Project site. In this area, North Avenue is a two-lane undivided arterial between Marks Avenue and the State Route 41 interchange, a four-lane arterial divided by a two-way left-turn lane between the State Route 41 interchange and Orange Avenue, a two-lane undivided arterial between Orange Avenue and Minnewawa Avenue, and a two-lane undivided local roadway between Minnewawa Avenue and Temperance Avenue. The Fresno General Plan Circulation Element designates North Avenue as a two-lane arterial between Marks Avenue and Fig Avenue, a four-lane arterial between Fig Avenue and Clovis Avenue, and a two-lane arterial between Clovis Avenue and Temperance Avenue.

## Collision Analysis

JLB conducted a search of the Statewide Integrated Traffic Records System (SWITRS) to review collision reports for the most recent five-year period (January 1, 2014 to December 31, 2018). The SWITRS “is a database that serves as a means to collect and process data gathered from a collision scene. The internet SWITRS application is a tool by which CHP staff and members of its Allied Agencies throughout California can request various types of statistical reports in an electronic format.” All collision reports found in SWITRS between January 1, 2014 and December 31, 2018 were included in the analysis. Collision data for each existing study intersection are contained in Appendix E.

In the five-year period, a total of 34 collisions were reported within the influence zone of the existing study intersections. Table I summarizes the total number of collisions reported at each existing study intersection, the type of collision, the severity of the collision, the type of violation, and whether the collision involved another motor vehicle, a pedestrian/bicyclist or a fixed object. Based on the collision data recorded during the five-year period, all existing study intersections have experienced a relatively low average number of collisions per year. The intersections of Maple Avenue and Jensen Avenue with a total of 11 collisions and Chestnut Avenue and Jensen Avenue with a total of 10 collisions during the five-year period. The type of collisions at the intersection of Maple Avenue and Jensen Avenue included five (5) broadsides, three (3) rear-ends, one (1) head-on, one (1) hit object, and one (1) sideswipe. The type of violations included three (3) traffic signals and signs, two (2) right-of-way, two (2) unsafe speed, one (1) improper turning, two (2) driving under the influence, and one (1) other. The type of collisions at the intersection of Chestnut Avenue and Jensen Avenue included five (5) broadsides, four (4) head-on, and one (1) sideswipe. The type of violations included two (2) traffic signals and signs, one (1) right-of-way, two (2) unsafe speed, one (1) improper turning, three (3) driving under the influence, and one (1) other.

JLB analyzed the data contained within the SWITRS database for the five-year analysis period of each existing study intersection, but was unable to reach a conclusion that would explain any justification for the modification of lane geometrics or traffic controls. Nevertheless, it is recommended that the City of Fresno analyze the intersections of Maple Avenue and Jensen Avenue as well as Chestnut Avenue and Jensen Avenue as part of its current Systematic Safety Analysis. While the average of broadside collisions per year at these locations is low (average one per year), an analysis of these intersections will help to determine if any of the broadside collisions at the aforementioned locations could be reduced.

## Table I: Five-Year Intersection Collision Analysis

| ID | Intersection | Number of Collisions | Type of Collision | | | | | | | Severity | | | | | Type of Violation | | | | | | | Motor Vehicle Involved with... | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Broadside | Rear End | Head-On | Object | Sideswipe | Other | Unknown | Fatal | Severe Injury | Other Visible Injury | Complaint of Pain Injury | Property Damage Only | Traffic Signals & Signs | Right of Way | Unsafe Speed | Improper Turning | Driving Under Influence | Pedestrian Violation | Other | Pedestrian/Bicyclist | Other Motor Vehicle | Fixed Object | Unknown |
| 1 | Chestnut Avenue / Florence Avenue | 4 | 1 | - | 1 | - | - | 1 | 1 | - | - | 2 | 1 | 1 | - | 1 | 1 | - | 1 | 1 | - | 1 | 1 | 1 | 1 |
| 2 | Maple Avenue / Grove Avenue | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | Maple Avenue / Jensen Avenue | 11 | 5 | 3 | 1 | 1 | 1 | - | - | - | - | - | 7 | 4 | 3 | 2 | 2 | 1 | 2 | - | 1 | - | 10 | 1 | - |
| 4 | Dearing Avenue / Jensen Avenue | 1 | 1 | - | - | - | - | - | - | - | - | - | - | 1 | - | - | - | 1 | - | - | - | - | 1 | - | - |
| 5 | Chestnut Avenue / Jensen Avenue | 10 | 5 | 4 | - | - | 1 | - | - | 2 | - | - | 5 | 3 | 2 | 1 | 2 | 1 | 3 | - | 1 | - | 10 | - | - |
| 6 | Maple Avenue / Vine Avenue | 1 | 1 | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 | - | - | - | - | - | 1 | - | - |
| 7 | Maple Avenue / Date Avenue | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 8 | Maple Avenue / Annadale Avenue | 2 | - | 1 | - | - | 1 | - | - | - | - | - | - | 2 | - | - | 1 | - | - | - | 1 | - | 2 | - | - |
| 9 | Maple Avenue / North Avenue | 5 | 2 | 1 | - | 2 | - | - | - | - | - | - | 2 | 3 | - | 2 | 2 | 1 | - | - | - | - | 3 | 2 | - |

## Traffic Signal Warrants

Eight-hour and four-hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Existing Traffic Conditions scenario. These warrants are found in Appendix K. These warrants were prepared pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersection of Maple Avenue and North Avenue satisfies the eight-hour and four-hour signal warrant. Based on the signal warrant and engineering judgement, signalization of this intersection is not recommended, especially since this intersection operates at an acceptable LOS during both peak periods. It is worth noting that the CA MUTCD states “satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal.” Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 4 and 7, as applicable, be conducted for this intersection.

## Results of Existing Level of Service Analysis

Figure 2 illustrates the Existing Traffic Conditions turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Traffic Conditions scenario are provided in Appendix F. Table II presents a summary of the Existing peak hour LOS at the study intersections.

At present, the intersection of Chestnut Avenue and Florence Avenue exceeds its acceptable LOS threshold during both peak periods. To improve the LOS of this intersection, it is recommended that the following improvements be implemented.

- Chestnut Avenue / Florence Avenue
    - Modify Florence Avenue to Chestnut Avenue access from full access to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)

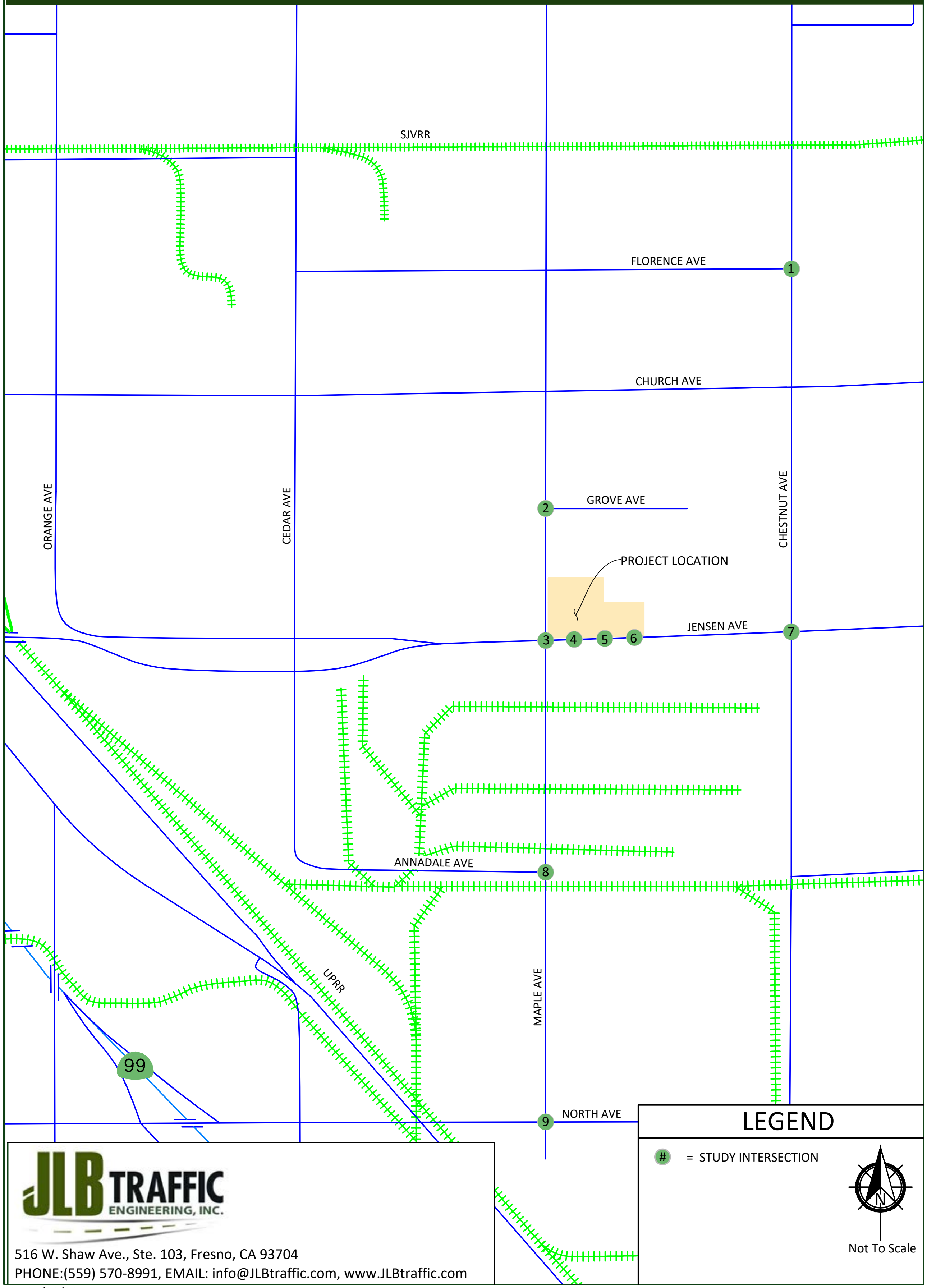
## Table II: Existing Intersection LOS Results

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | Chestnut Avenue / Florence Avenue | Two-Way Stop | **90.7** | **F** | **52.3** | **F** |
| | | Two-Way Stop (Improved) | 11.6 | B | 11.8 | B |
| 2 | Maple Avenue / Grove Avenue | Two-Way Stop | 14.0 | B | 12.7 | B |
| 3 | Maple Avenue / Jensen Avenue | Signalized | 19.4 | B | 21.2 | C |
| 4 | Project Driveway 1 / Jensen Avenue | Does Not Exist | N/A | N/A | N/A | N/A |
| 5 | Project Driveway 2 / Jensen Avenue | Does Not Exist | N/A | N/A | N/A | N/A |
| 6 | Project Driveway 3 / Jensen Avenue | Does Not Exist | N/A | N/A | N/A | N/A |
| 7 | Chestnut Avenue / Jensen Avenue | Signalized | 29.6 | C | 37.4 | D |
| 8 | Maple Avenue / Annadale Avenue | One-Way Stop | 9.3 | A | 9.1 | A |
| 9 | Maple Avenue / North Avenue | One-Way Stop | 13.9 | B | 19.1 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

# BDM Builders Mixed-Use Development - City of Fresno
## Vicinity Map

Figure 1

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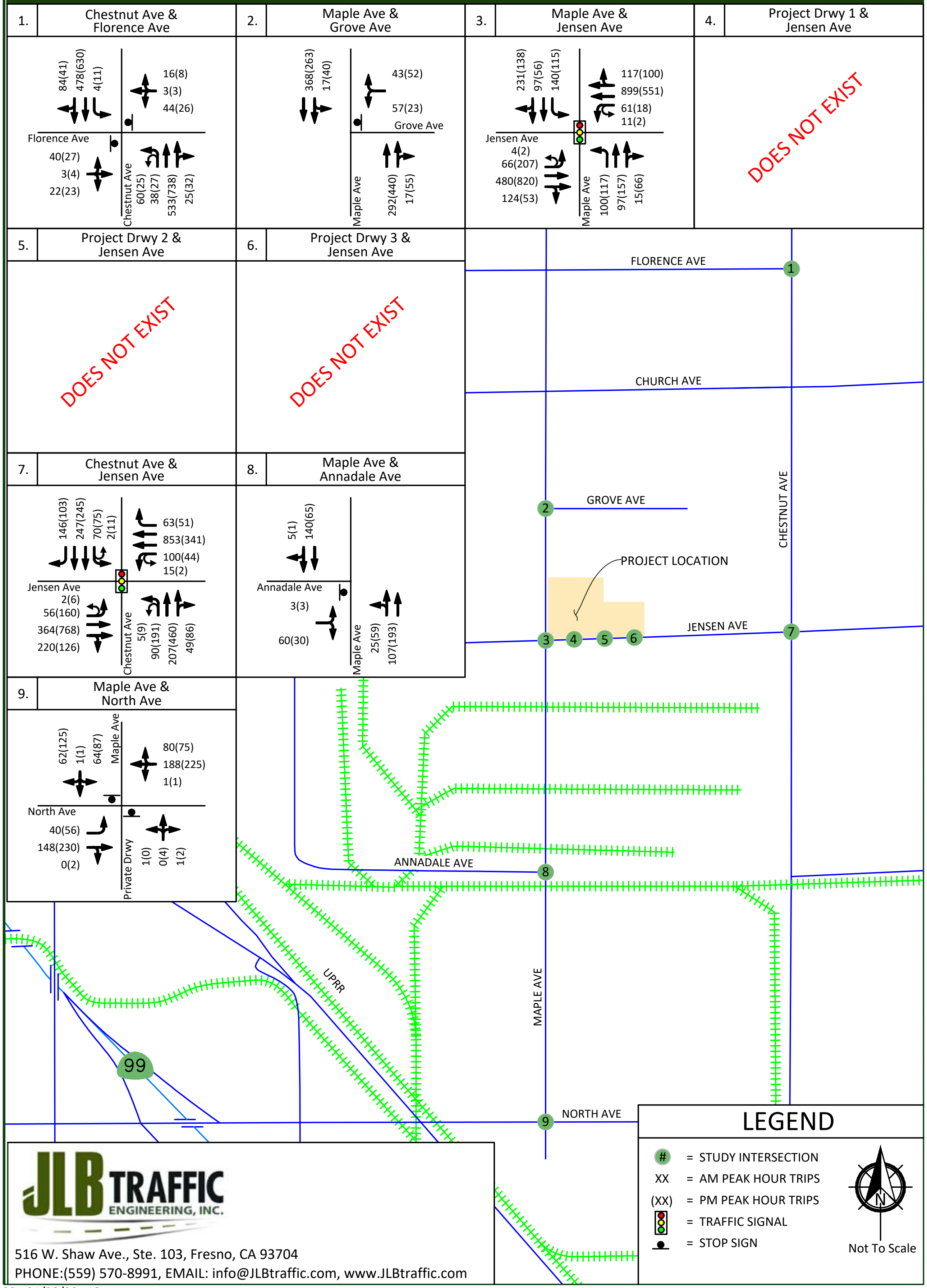
# BDM Builders Mixed-Use Development - City of Fresno
# Existing - Traffic Volumes, Geometrics and Controls

Figure 2

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# Existing plus Project Traffic Conditions

## Project Description

The Project proposes an integrated mixed-use development of a 12.18-acre site. The mixed-use development will include a gasoline/service station with a specialty store (16 fueling positions), a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-food restaurant without drive-through window, 32,000 square feet of shopping center, a 2,000 square-foot coffee/donut shop with drive-through window, a 14,500 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 5,000 square-foot small office building, 150 units of multi-family housing (4-story), and a 4,000 square-foot daycare. Based on information provided to JLB, the Project will undergo a General Plan Amendment with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3). Figure 3 illustrates the latest Project Site Plan.

## Project Access

Based on the latest Project Site Plan, access to and from the Project site will be from six (6) proposed access points located along Maple Avenue and Jensen Avenue. Three (3) proposed access points are located along the east side of Maple Avenue approximately 180, 400 and 575 feet north of Jensen Avenue. All access points along Maple Avenue are proposed as full access. The remaining three (3) proposed access points are located along the north side of Jensen Avenue approximately 200 (Project Driveway 1), 630 (Project Driveway 2) and 900 feet (Project Driveway 3) east of Maple Avenue. Project Driveway 1 and 3 are proposed to have access limited to right-in and right-out only. Project Driveway 2 is proposed to have access limited to left-in, right-in and right-out only. Pursuant to the City of Fresno policy, each side of super arterials, such as Jensen Avenue, could include one (1) three-quarter access point and up to two (2) additional right-in, right-out access points. As the north side of Jensen Avenue with the exception of the Project site is fully developed and there are no existing access points, the Project proposes to implement the three access points on its site.

During the preparation of this analysis, JLB staff worked with the site plan design team to provide recommendations to the placement of the Project driveways. Early versions of the Project Site Plan had the proposed Driveway 2 (left-in, right-in, right-out) along Jensen Avenue closer to Maple Avenue. However, based on the SimTraffic Queuing Reports, JLB recommended that Driveway 2 be moved further east to the placement presented in the latest Project Site Plan. Since the changes to the Project Site Plan have been incorporated, JLB is in support of the location of the proposed driveways and types of access. It is recommended that a corner sight distance evaluation for each of the proposed driveways be taken into account to ensure the safety of pedestrians and bicyclists along the future trail along the north side of Jensen Avenue.

Internally within the Project site, it is recommended that a STOP sign for northbound traffic be installed at the northern terminus of the driveway aisle that serves Project Driveway 2. This should help improve traffic safety across this internal intersection while also reducing speeds.

## Trip Generation

Trip generation rates for the proposed Project and the proposed General Plan land uses were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table III presents the total trip generation for the proposed Project with trip generation rates for Gasoline/Service Station with Convenience Market, Fast-Food Restaurant with Drive-Through Window, Fast-Food Restaurant without Drive-Through Window, Shopping Center, Coffee/Donut Shop with Drive-Through Window, Medical-Dental Office Building, Walk-in Bank, Small Office Building, Multifamily Housing (Mid-Rise), and Day Care Center. While the ITE Trip Generation Manual does not provide a weekday daily rate for a Walk-in Bank, JLB utilized the weekday daily rate for a Drive-in Bank as a conservative measure. At buildout, the proposed Project is estimated to generate a maximum of 10,432 daily trips, 727 AM peak hour trips and 833 PM peak hour total trips (before internal capture and pass-by trip reductions are taken into account). Table IV presents the total trip generation of that which could otherwise be developed on the site with trip generation rates for Light Industrial, Multifamily Housing (Low-Rise) and Shopping Center. The proposed General Plan land use is estimated to generate a maximum of 2,916 daily, 121 AM peak hour and 286 PM peak hour total trips. Compared to the proposed General Plan, the proposed Project is estimated to yield greater trips by 7,516 daily, 606 AM peak hour and 547 PM peak hour trips. The difference in trip generation is summarized in Table V.

### Table III: Total Project Trip Generation

| *Land Use (ITE Code)* | *Size* | *Unit* | *Daily* | | *AM (7-9) Peak Hour* | | | | | | *PM (4-6) Peak Hour* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | *Rate* | *Total* | *Trip Rate* | *In %* | *Out %* | *In* | *Out* | *Total* | *Trip Rate* | *In %* | *Out %* | *In* | *Out* | *Total* |
| Gasoline/Service Station with Convenience Market (945) | 16 | f.p. | 205.36 | 3,286 | 12.47 | 51 | 49 | 102 | 98 | 200 | 13.99 | 51 | 49 | 114 | 110 | 224 |
| Fast-Food Restaurant with Drive-Through Window (934) | 3.000 | k.s.f. | 470.95 | 1,413 | 40.19 | 51 | 49 | 62 | 59 | 121 | 32.67 | 52 | 48 | 51 | 47 | 98 |
| Fast-Food Restaurant without Drive-Through Window (933) | 2.000 | k.s.f. | 346.23 | 692 | 25.10 | 60 | 40 | 30 | 20 | 50 | 28.34 | 50 | 50 | 28 | 29 | 57 |
| Shopping Center (820) | 32.000 | k.s.f. | 37.75 | 1,208 | 0.94 | 62 | 38 | 19 | 11 | 30 | 3.81 | 48 | 52 | 59 | 63 | 122 |
| Coffee/Donut Shop with Drive-Through Window (937) | 2.000 | k.s.f. | 820.38 | 1,641 | 88.99 | 51 | 49 | 91 | 87 | 178 | 43.38 | 50 | 50 | 43 | 44 | 87 |
| Medical-Dental Office Building (720) | 14.500 | k.s.f. | 34.80 | 505 | 2.78 | 78 | 22 | 31 | 9 | 40 | 3.46 | 28 | 72 | 14 | 36 | 50 |
| Walk-in Bank (911) | 6.000 | k.s.f. | 100.03 | 600 | 0.00 | 0 | 0 | 0 | 0 | 0 | 12.13 | 44 | 56 | 32 | 41 | 73 |
| Small Office Building (712) | 5.000 | k.s.f. | 16.19 | 81 | 1.92 | 83 | 18 | 8 | 2 | 10 | 2.45 | 32 | 68 | 4 | 8 | 12 |
| Multifamily Housing (Mid-Rise) (221) | 150 | d.u. | 5.44 | 816 | 0.36 | 26 | 74 | 14 | 40 | 54 | 0.44 | 61 | 39 | 40 | 26 | 66 |
| Day Care Center (565) | 4.000 | k.s.f. | 47.62 | 190 | 11.00 | 53 | 47 | 23 | 21 | 44 | 11.12 | 47 | 53 | 21 | 23 | 44 |
| ***Total Project Trips*** | | | | **10,432** | | | | **380** | **347** | **727** | | | | **406** | **427** | **833** |

Note: f.p. = Fueling Positions
k.s.f = Thousand Square Feet
d.u. = Dwelling Units

## Table IV: Total General Plan Trip Generation

| Land Use (ITE Code) | Size | Unit | Daily | | AM (7-9) Peak Hour | | | | | | PM (4-6) Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rate | Total | Trip Rate | In % | Out % | In | Out | Total | Trip Rate | In % | Out % | In | Out | Total |
| Light Industrial (110) | 45.618 | k.s.f. | 4.96 | 226 | 0.70 | 88 | 12 | 28 | 4 | 32 | 0.63 | 13 | 87 | 4 | 25 | 29 |
| Multifamily Housing (Low-Rise) (221) | 81 | d.u. | 7.32 | 593 | 0.46 | 23 | 77 | 9 | 28 | 37 | 0.56 | 63 | 37 | 28 | 17 | 45 |
| Shopping Center (820) | 55.539 | k.s.f. | 37.75 | 2,097 | 0.94 | 62 | 38 | 32 | 20 | 52 | 3.81 | 48 | 52 | 102 | 110 | 212 |
| ***Total General Plan Trips*** | | | | **2,916** | | | | **69** | **52** | **121** | | | | **134** | **152** | **286** |

Note: k.s.f = Thousand Square Feet
d.u. = Dwelling Units

## Table V: Difference in Trip Generation

| Land Use | Daily | AM (7-9) Peak Hour | | | PM (4-6) Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | Total | In | Out | Total | In | Out | Total |
| Project | 10,432 | 380 | 347 | 727 | 406 | 427 | 833 |
| General Plan | 2,916 | 69 | 52 | 121 | 134 | 152 | 286 |
| ***Difference in Trip Generation*** | **7,516** | **311** | **295** | **606** | **272** | **275** | **547** |

This analysis considers reductions in trip generation as a result of internal capture. Internal capture rates were prepared pursuant to the NCHRP 684 Internal Trip Capture procedure. Internal capture trip reductions are applied to account for the interaction between various individual land uses assumed for the trip generation of the Project. For example, in a mixed-use development containing offices and shops, trips made by the office workers to the stops within the site are defined as internal, or captured, trips within the site. Table VI presents the results of the internal capture trip analysis for the proposed Project. Captured trips are presented as negative numbers because they are deducted from the total number of trips presented in Table III. Table VII presents the adjusted trip generation resulting from the internal capture trip reductions. As can be seen from Table VII, the proposed Project is estimated to generate a maximum of 8,486 daily, 625 AM peak hour and 544 PM peak hour total driveway trips (before pass-by trip reductions are taken into account).

## Table VI: Internal Capture Trip Reductions

| *Land Use (ITE Code)* | *Daily* | *AM (7-9) Peak Hour* | | | *PM (4-6) Peak Hour* | | |
|---|---|---|---|---|---|---|---|
| | *Total* | *In* | *Out* | *Total* | *In* | *Out* | *Total* |
| Gasoline/Service Station with Convenience Market (945) | -663 | -11 | -14 | -25 | -45 | -36 | -81 |
| Fast-Food Restaurant with Drive-Through Window (934) | -285 | -10 | -6 | -16 | -18 | -23 | -41 |
| Fast-Food Restaurant without Drive-Through Window (933) | -140 | -5 | -2 | -7 | -10 | 14 | -24 |
| Shopping Center (820) | -244 | -2 | -2 | -4 | -24 | -20 | -44 |
| Coffee/Donut Shop with Drive-Through Window (937) | -331 | -14 | -8 | -22 | -15 | -22 | -37 |
| Medical-Dental Office Building (720) | -102 | -6 | -8 | -14 | -6 | -10 | -16 |
| Walk-in Bank (911) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Small Office Building (712) | -16 | -2 | -2 | -4 | -2 | -2 | -4 |
| Multifamily Housing (Mid-Rise) (221) | -165 | -1 | -9 | -10 | -25 | -17 | -42 |
| Day Care Center (565) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***Internal Capture Trip Reductions*** | **-1,946** | **-51** | **-51** | **-102** | **-145** | **-144** | **-289** |

## Table VII: Total Project Driveway Trip Generation

| *Land Use (ITE Code)* | *Daily* | *AM (7-9) Peak Hour* | | | *PM (4-6) Peak Hour* | | |
|---|---|---|---|---|---|---|---|
| | *Total* | *In* | *Out* | *Total* | *Total* | *In* | *Out* |
| Gasoline/Service Station with Convenience Market (945) | 2,623 | 91 | 84 | 175 | 69 | 74 | 143 |
| Fast-Food Restaurant with Drive-Through Window (934) | 1,128 | 52 | 53 | 105 | 33 | 24 | 57 |
| Fast-Food Restaurant without Drive-Through Window (933) | 552 | 25 | 18 | 43 | 18 | 15 | 33 |
| Shopping Center (820) | 964 | 17 | 9 | 26 | 35 | 43 | 78 |
| Coffee/Donut Shop with Drive-Through Window (937) | 1,310 | 77 | 79 | 156 | 28 | 22 | 50 |
| Medical-Dental Office Building (720) | 403 | 25 | 1 | 26 | 8 | 26 | 34 |
| Walk-in Bank (911) | 600 | 0 | 0 | 0 | 32 | 41 | 73 |
| Small Office Building (712) | 65 | 6 | 0 | 6 | 2 | 6 | 8 |
| Multifamily Housing (Mid-Rise) (221) | 651 | 13 | 31 | 44 | 15 | 9 | 24 |
| Day Care Center (565) | 190 | 23 | 21 | 44 | 21 | 23 | 44 |
| ***Total Project Driveway Trips*** | **8,486** | **329** | **296** | **625** | **261** | **283** | **544** |

Additionally, this analysis applies pass-by trip reductions pursuant to the 3rd Edition of the Trip Generation Handbook published by ITE. Pass-by trip reductions are applied to vehicles already on the road that the Project may attract. Table VIII presents the results of the pass-by trip reduction analysis for the proposed Project. Pass-by trips are presented in negative numbers because they are deducted from the trips presented in Table VII. Table IX presents the adjusted trip generation resulting from the pass-by trip reductions. As can be seen from Table IX, the maximum net new trips that the Project is estimated to generate are 7,306 daily trips, 471 AM peak hour trips and 418 PM peak hour trips.

## Table VIII: Pass-By Trip Reductions

| ***Land Use (ITE Code)*** | ***Daily*** | ***AM (7-9) Peak Hour*** | | | ***PM (4-6) Peak Hour*** | | |
|---|---|---|---|---|---|---|---|
| | ***Total*** | ***In*** | ***Out*** | ***Total*** | ***In*** | ***Out*** | ***Total*** |
| Gasoline/Service Station with Convenience Market (945) | -734 | -52 | -52 | -104 | -39 | -39 | -78 |
| Fast-Food Restaurant with Drive-Through Window (934) | -282 | -25 | -25 | -50 | -12 | -12 | -24 |
| Fast-Food Restaurant without Drive-Through Window (933) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Small Office Building (712) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shopping Center (820) | -164 | 0 | 0 | 0 | -12 | -12 | -24 |
| Coffee/Donut Shop with Drive-Through Window (937) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Medical-Dental Office Building (720) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk-in Bank (911) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Multifamily Housing (Mid-Rise) (221) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Day Care Center (565) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***Pass-By Trip Reductions*** | **-1,180** | **-77** | **-77** | **-154** | **-63** | **-63** | **-126** |

## Table IX: Net New Project Trip Generation

| *Land Use (ITE Code)* | *Daily* | *AM (7-9) Peak Hour* | | | *PM (4-6) Peak Hour* | | |
|---|---|---|---|---|---|---|---|
| | *Total* | *In* | *Out* | *Total* | *In* | *Out* | *Total* |
| Gasoline/Service Station with Convenience Market (945) | 1,889 | 39 | 32 | 71 | 30 | 35 | 65 |
| Fast-Food Restaurant with Drive-Through Window (934) | 846 | 27 | 28 | 55 | 21 | 12 | 33 |
| Fast-Food Restaurant without Drive-Through Window (933) | 552 | 25 | 18 | 43 | 18 | 15 | 33 |
| Small Office Building (712) | 65 | 6 | 0 | 6 | 2 | 6 | 8 |
| Shopping Center (820) | 800 | 17 | 9 | 26 | 23 | 31 | 54 |
| Coffee/Donut Shop with Drive-Through Window (937) | 1,310 | 77 | 79 | 156 | 28 | 22 | 50 |
| Walk-in Bank (911) | 600 | 0 | 0 | 0 | 32 | 41 | 73 |
| Medical-Dental Office Building (720) | 403 | 25 | 1 | 26 | 8 | 26 | 34 |
| Multifamily Housing (Mid-Rise) (221) | 651 | 13 | 31 | 44 | 15 | 9 | 24 |
| Day Care Center (565) | 190 | 23 | 21 | 44 | 21 | 23 | 44 |
| ***Net New Project Trips*** | **7,306** | **252** | **219** | **471** | **198** | **220** | **418** |

## Trip Distribution

The trip distribution assumptions were developed based on existing travel patterns, the Fresno COG Project Select Zone, the existing roadway network, engineering judgment, data provided by the developer, knowledge of the study area, existing residential and commercial densities, and the City of Fresno 2035 General Plan Circulation Element in the vicinity of the Project. Figure 4 illustrates the Total Project Driveway Trips, Figure 5 presents the Pass-By Trip Reductions, and Figure 6 presents the Net New Project Trips (after pass-by trip reductions are taken into account).

## Bikeways

Currently, Class II Bike Lanes exist in the vicinity of the proposed Project site along Chestnut Avenue and Maple Avenue. The City of Fresno 2017 Active Transportation Plan recommends that Class II Bike Lanes be implemented on: 1) Florence Avenue between Cedar Avenue and Chestnut Avenue, 2) Chestnut Avenue north of North Avenue, 3) Maple Avenue north of North Avenue, 4) Jensen Avenue through the City of Fresno SOI, 4) Annadale Avenue between Cedar Avenue and Maple Avenue, and 5) North Avenue through the City of Fresno SOI. Furthermore, the City of Fresno 2017 Active Transportation Plan recommends that Class I Bike Paths be implemented along: 1) the north side of Jensen Avenue between Golden State Boulevard and Highland Avenue and 2) the west side of Chestnut Avenue between Jensen Avenue and North Avenue. Therefore, it is recommended that the Project implement a Class II Bike Lane along its frontage to Maple Avenue and a Class I Bike Path along its frontage to Jensen Avenue.

## Walkways

Currently, walkways exist in the vicinity of the proposed Project site along Florence Avenue, Chestnut Avenue, Maple Avenue and Grove Avenue. The City of Fresno 2017 Active Transportation Plan recommends that walkways be implemented on: 1) Florence Avenue between Cedar Avenue and Chestnut Avenue, 2) Chestnut Avenue north of North Avenue, 3) Maple Avenue north of North Avenue, 4) Grove Avenue between Maple Avenue and Sierra Vista Avenue, 5) Jensen Avenue through the City of Fresno SOI, 6) Annadale Avenue between Cedar Avenue and Maple Avenue, and 7) North Avenue west of Willow Avenue. The City of Fresno 2017 Active Transportation Plan identifies the area bound by Maple Avenue, Church Avenue, Sierra Vista Avenue and Grove Avenue as an underserved neighborhood and an area with large numbers of missing sidewalks. Therefore, it is recommended that the Project implement walkways that are ADA compliant along its frontages to Maple Avenue and Jensen Avenue.

## Transit

Fresno Area Express (FAX) is the transit operator in the City of Fresno. At present, there is one (1) FAX transit route that operates adjacent to the proposed Project site. FAX Route 41, which runs on Maple Avenue, operates at 30-minute intervals on weekdays and weekends. Its nearest stop to the Project site is located along the west side of Maple Avenue approximately 150 feet north of Jensen Avenue. This route provides a direct connection to Manchester Transit Center, Duncan Polytechnic High School, Cedar Clinton Library, McLane High School, California Christian College, University of the Pacific, and Mosqueda Community Center. Retention of the existing and expansion of future transit routes is dependent on transit ridership demand and available funding.

## Vehicle Miles Traveled Evaluation

[Refer to Revised Traffic Impact Analysis Addendum No. 2 dated January 28, 2021 for VMT discussion and conclusions.]

## Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Existing plus Project Traffic Conditions scenario. These warrants are found in Appendix K. These warrants were prepared pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, none of the unsignalized intersections are projected to satisfy the peak hour signal warrant during either peak period.

## Results of Existing plus Project Level of Service Analysis

The Existing plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls remain in place. Figure 7 illustrates the Existing plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project Traffic Conditions scenario are provided in Appendix G. Table X presents a summary of the Existing plus Project peak hour LOS at the study intersections.

Under this scenario, the intersection of Chestnut Avenue and Florence Avenue is projected to exceed its acceptable LOS threshold during both peak periods. To improve the LOS of this intersection, it is recommended that the following improvements be implemented.

- Chestnut Avenue / Florence Avenue
  - Modify Florence Avenue to Chestnut Avenue access from full to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)

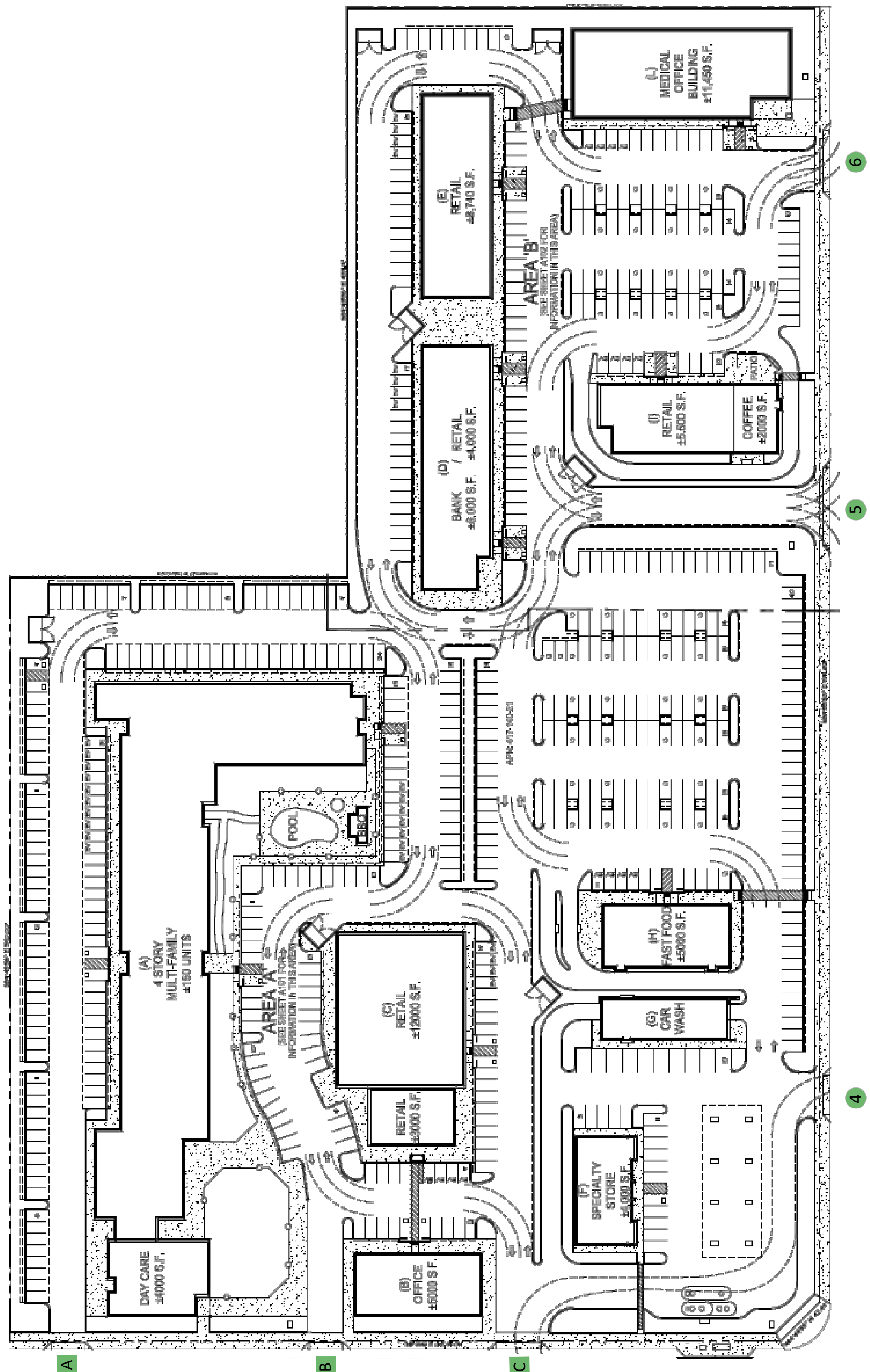
## Table X: Existing plus Project Intersection LOS Results

| *ID* | *Intersection* | *Intersection Control* | *AM (7-9) Peak Hour* | | *PM (4-6) Peak Hour* | |
|---|---|---|---|---|---|---|
| | | | *Average Delay (sec/veh)* | *LOS* | *Average Delay (sec/veh)* | *LOS* |
| 1 | Chestnut Avenue / Florence Avenue | Two-Way Stop | **114.7** | **F** | **55.5** | **F** |
| | | Two-Way Stop (Mitigated) | 11.8 | B | 11.9 | B |
| 2 | Maple Avenue / Grove Avenue | Two-Way Stop | 15.8 | C | 13.5 | B |
| 3 | Maple Avenue / Jensen Avenue | Signalized | 24.6 | C | 25.3 | C |
| 4 | Project Driveway 1 / Jensen Avenue | One-Way Stop | 15.2 | C | 11.7 | B |
| 5 | Project Driveway 2 / Jensen Avenue | One-Way Stop | 15.8 | C | 12.0 | B |
| 6 | Project Driveway 3 / Jensen Avenue | One-Way Stop | 14.0 | B | 11.3 | B |
| 7 | Chestnut Avenue / Jensen Avenue | Signalized | 30.6 | C | 32.7 | C |
| 8 | Maple Avenue / Annadale Avenue | One-Way Stop | 9.4 | A | 9.1 | A |
| 9 | Maple Avenue / North Avenue | One-Way Stop | 14.0 | B | 19.5 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

# BDM Builders Mixed-Use Development - City of Fresno
# Project Site Plan

Figure 3




## LEGEND

- # = STUDY INTERSECTION
- # = PROJECT DRIVEWAY

Not To Scale

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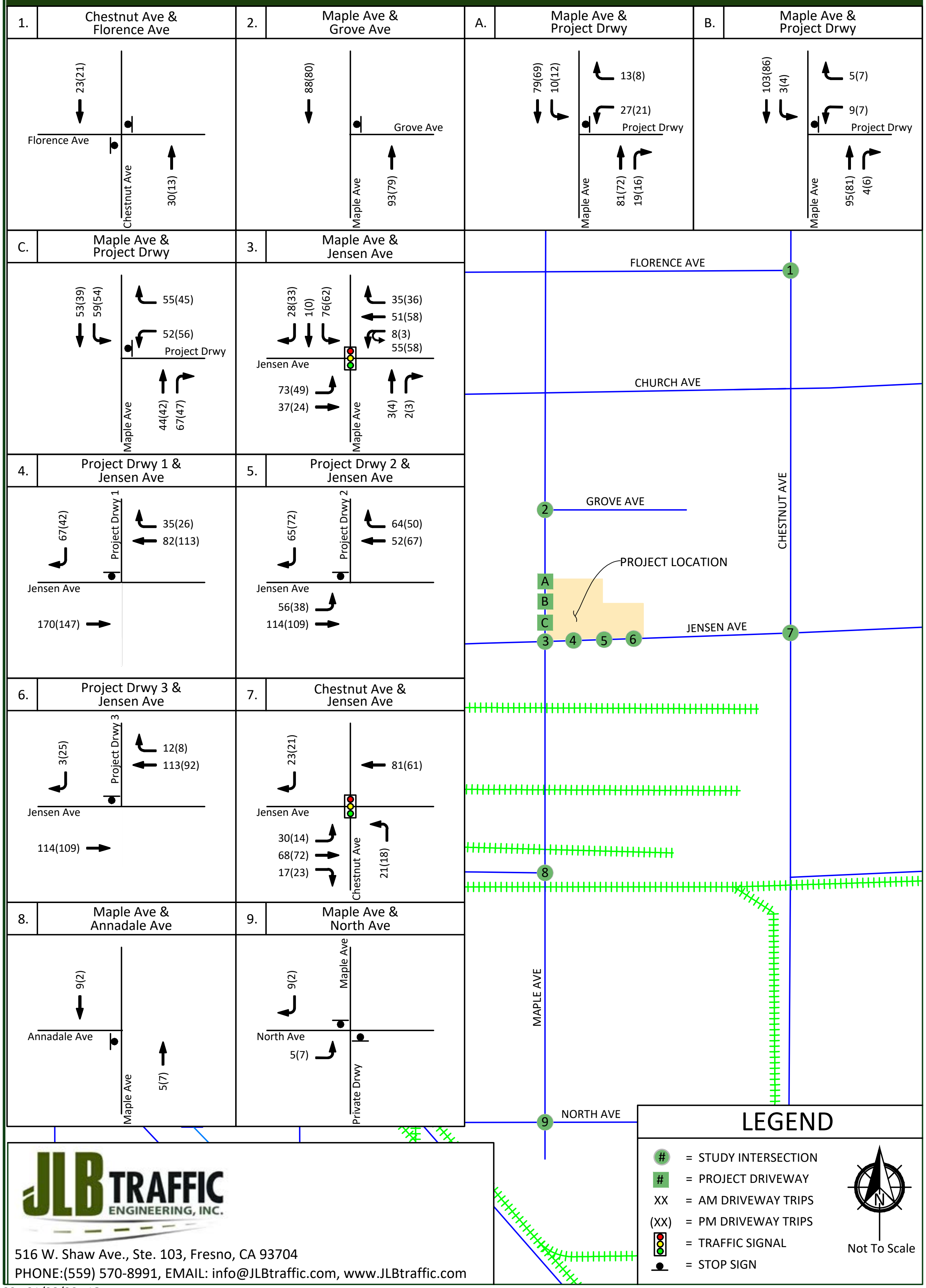
# BDM Builders Mixed-Use Development - City of Fresno

## Total Project Driveway Trips

Figure 4





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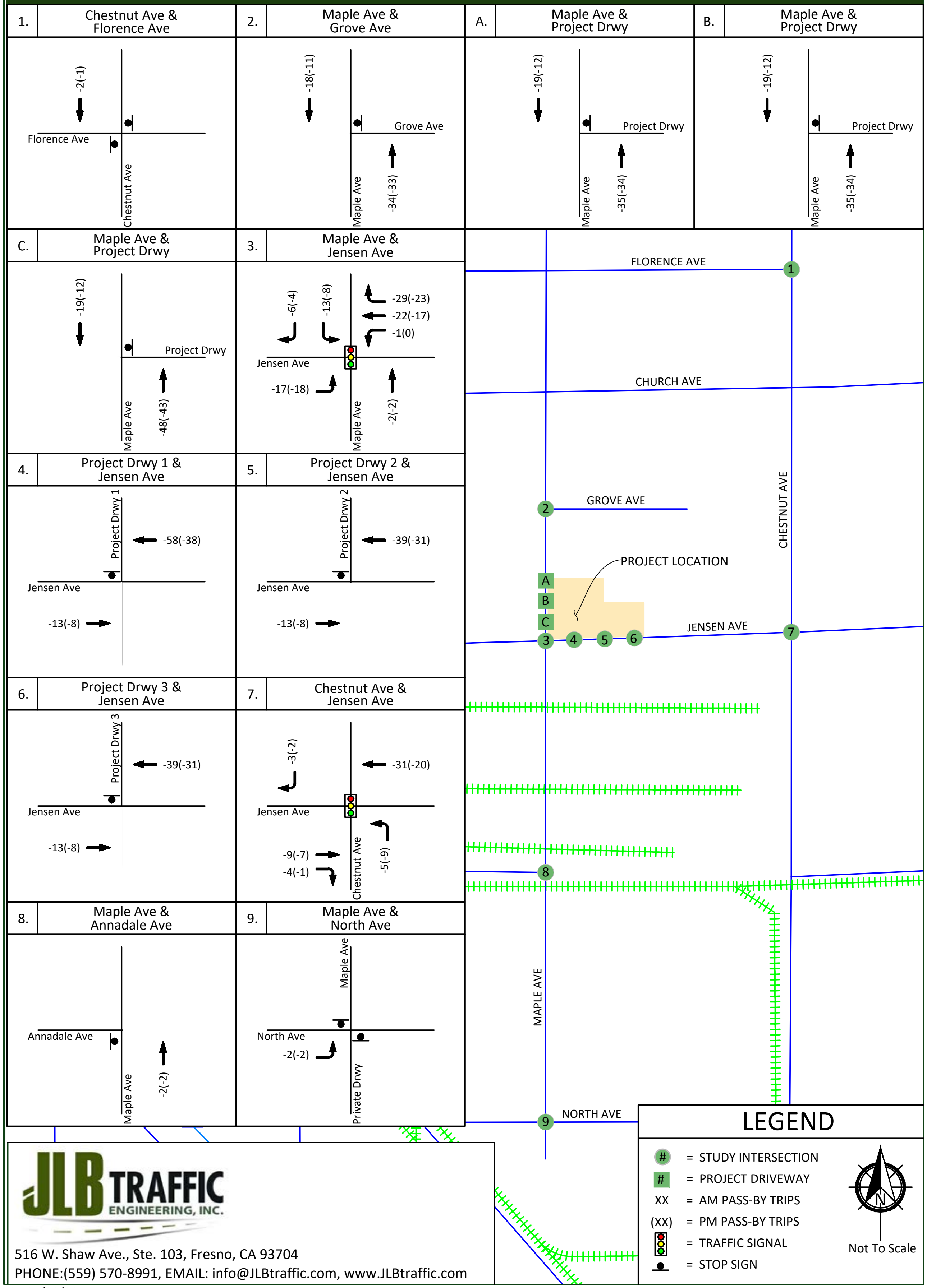
## Pass-By Trip Reductions

Figure 5





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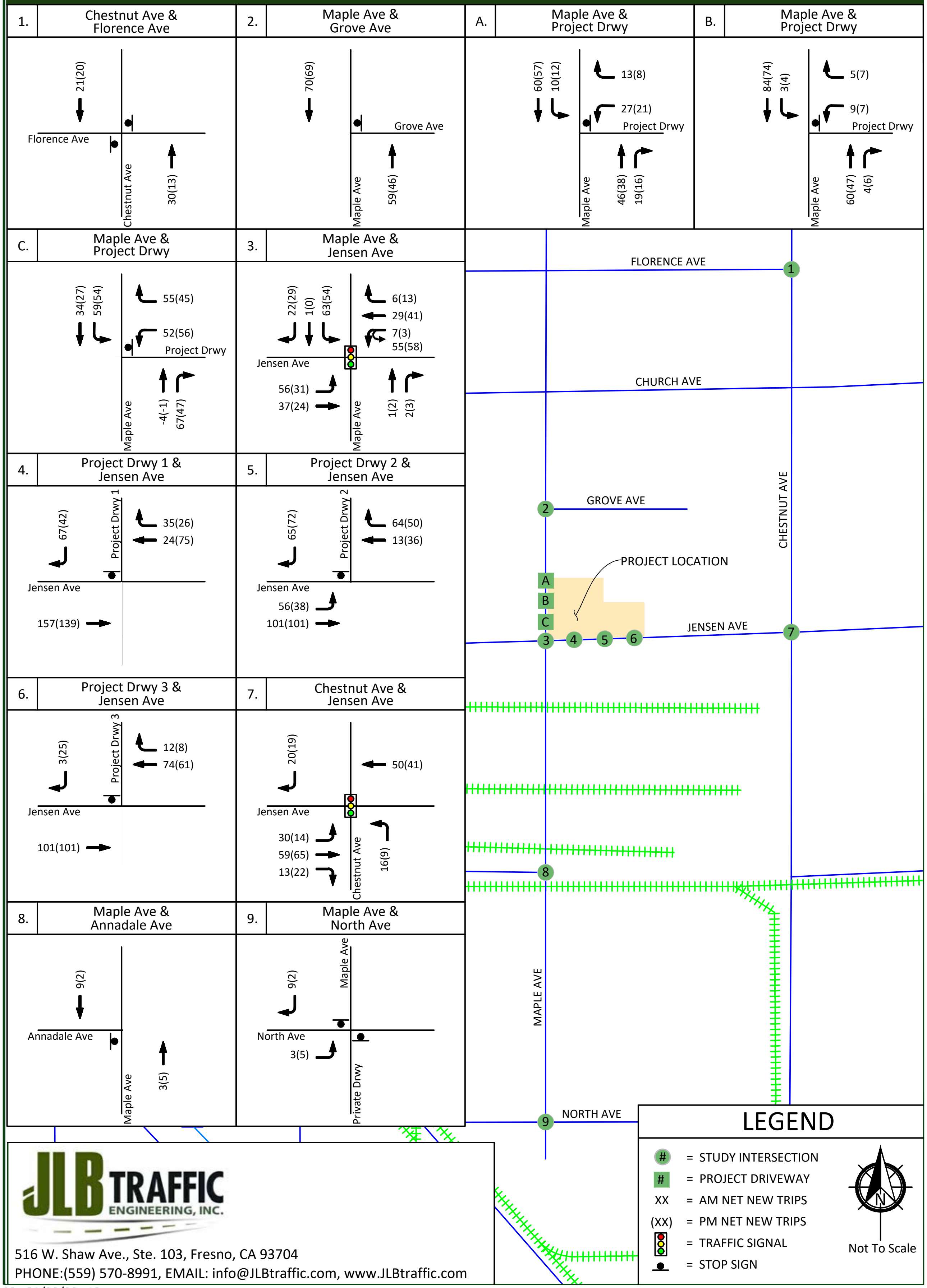
# BDM Builders Mixed-Use Development - City of Fresno
## Net New Project Trips

Figure 6

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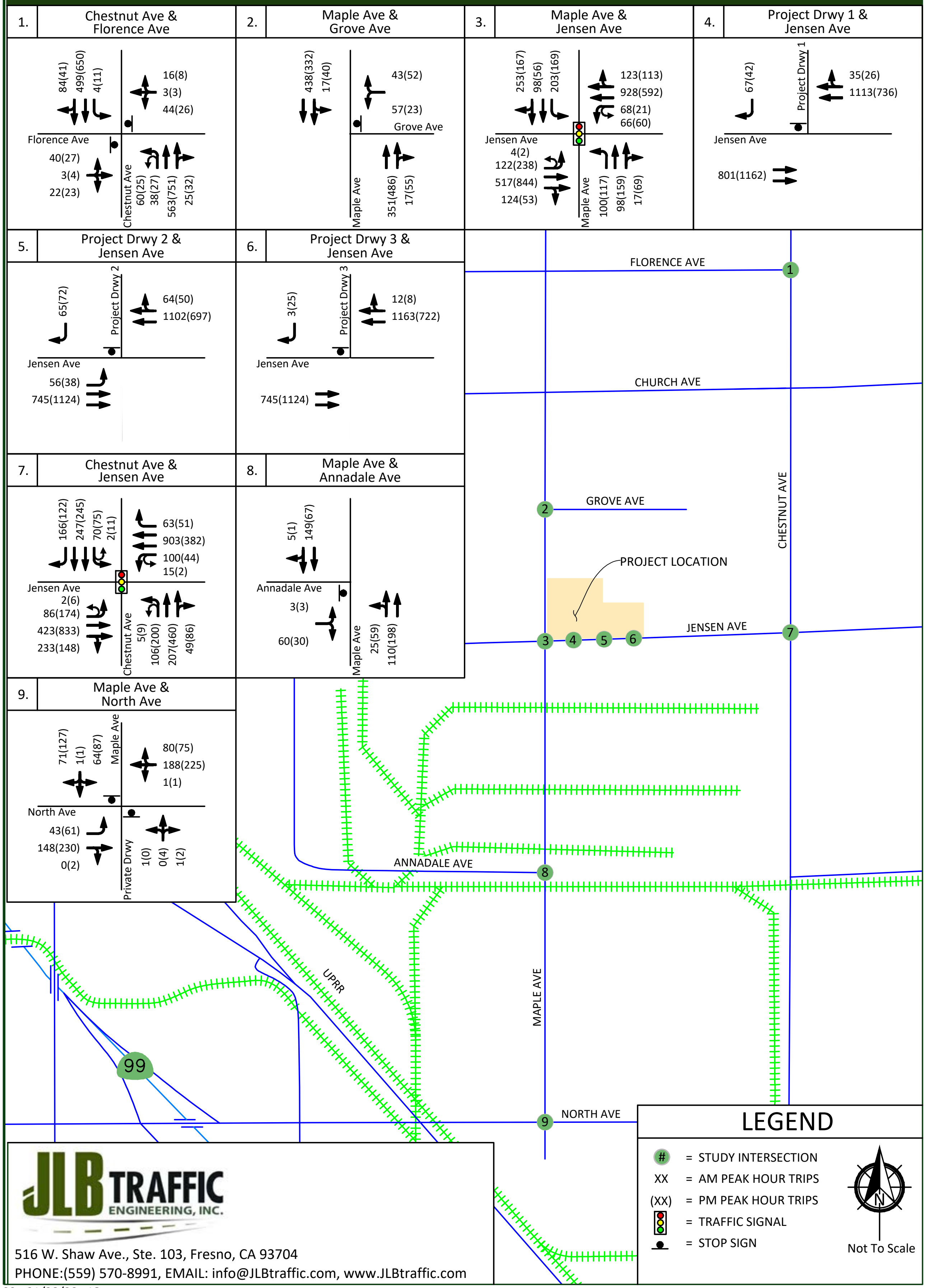
# BDM Builders Mixed-Use Development - City of Fresno

## Existing plus Project - Traffic Volumes, Geometrics and Controls

Figure 7

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# Near Term plus Project Traffic Conditions

## Description of Approved and Pipeline Projects

Approved and Pipeline Projects consist of developments that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Fresno, County of Fresno and Caltrans staff were consulted throughout the preparation of this TIA regarding approved and/or known projects that could potentially impact the study intersections. JLB staff conducted a reconnaissance of the surrounding area to confirm the Near Term Projects. Subsequently, it was agreed that the projects listed in Table XI were approved, near approval, or in the pipeline within the proximity of the proposed Project.

The trip generation listed in Table XI is that which is anticipated to be added to the streets and highways by these projects between the time of the preparation of this report and five years from 2019. As shown in Table XI, the total trip generation for the Near Term Projects is 42,925 daily trips, 6,381 AM peak hour trips and 4,572 PM peak hour trips. Figure 8 illustrates the location of the approved, near approval, or pipeline projects and their combined trip assignment to the study intersections and segments under the Near Term plus Project Traffic Conditions scenario.

### Table XI: Near Term Projects' Trip Generation

| *Approved Project Location* | *Approved or Pipeline Project Name* | *Daily Trips* | *AM Peak Hour* | *PM Peak Hour* |
|---|---|---|---|---|
| A | TT 5464 (portion of)[1] | 1,256 | 98 | 132 |
| B | TT 5498[1] | 755 | 59 | 79 |
| C | TT 5638[1] | 3,351 | 263 | 351 |
| D | TT 5913[1] | 1,029 | 81 | 108 |
| E | TT 5953[1] | 887 | 70 | 93 |
| F | TT 6095 (portion of)[1] | 47 | 4 | 5 |
| G | Lennar Heirloom Chateau Series[1] | 1,964 | 154 | 206 |
| H | Sanger Unified School District[2] | 7,597 | 2,135 | 640 |
| I | Fresno Unified School District[2] | 5,243 | 1,413 | 935 |
| J | 4780 S Maple Avenue Rezone[2] | 1,036 | 150 | 145 |
| K | Orange Industrial Park[3] | 6,260 | 839 | 873 |
| L | North Pointe (portion of)[4] | 6,552 | 524 | 438 |
| M | North and Orange Commercial Develpoment[2] | 5,907 | 456 | 439 |
| N | RP East Industrial[2] | 1,041 | 135 | 128 |
| **Total Approved and Pipeline Project Trips** | | **42,925** | **6,381** | **4,572** |

Note: 1 = Trip Generation prepared by JLB Traffic Engineering, Inc. based on readily available information
2 = Trip Generation based on JLB Traffic Engineering, Inc. Traffic Impact Analysis Report
3 = Trip Generation based on Precision Civil Engineering, Inc. Traffic Impact Study Report
4 = Trip Generation based on TJKM Transportation Consultants Traffic Impact Study Report

## Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Near Term plus Project Traffic Conditions scenario. These warrants are found in Appendix K. These warrants were prepared pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersection of Maple Avenue and North Avenue satisfies the peak - hour signal warrant during both peak periods. Based on the signal warrant and engineering judgement, signalization of this intersection is recommended.

## Results of Near Term plus Project Level of Service Analysis

The Near Term plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls remain in place. Figure 9 illustrates the Near Term plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project Traffic Conditions scenario are provided in Appendix H. Table XII presents a summary of the Near Term plus Project peak hour LOS at the study intersections.

Under this scenario, the intersections of Chestnut Avenue and Florence Avenue and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that the following improvements be implemented.

- Chestnut Avenue / Florence Avenue
    - Modify Florence Avenue to Chestnut Avenue access from full to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)

- Maple Avenue / North Avenue
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through-right lane;
  - Signalize the intersection with protective left-turn phasing in the eastbound and westbound approaches and split phasing in the northbound and southbound approaches.

It should be noted that between the Existing Traffic Conditions and the Near Term plus Project Traffic Conditions, the Project accounts for 14.5 percent of the daily trips, 6.9 percent of the AM peak hour trips and 8.4 percent of the PM peak hour trips of growth in traffic, while the rest can be attributable to the Near Term Projects. Therefore, one can deduce that the majority improvement measures presented under this scenario may not be necessary immediately upon completion of the proposed Project. However, if all of the Near Term Projects are completed close to the completion date of the proposed Project, the detailed recommended improvements presented under this scenario may be necessary in order to improve the LOS to the City's target LOS threshold.

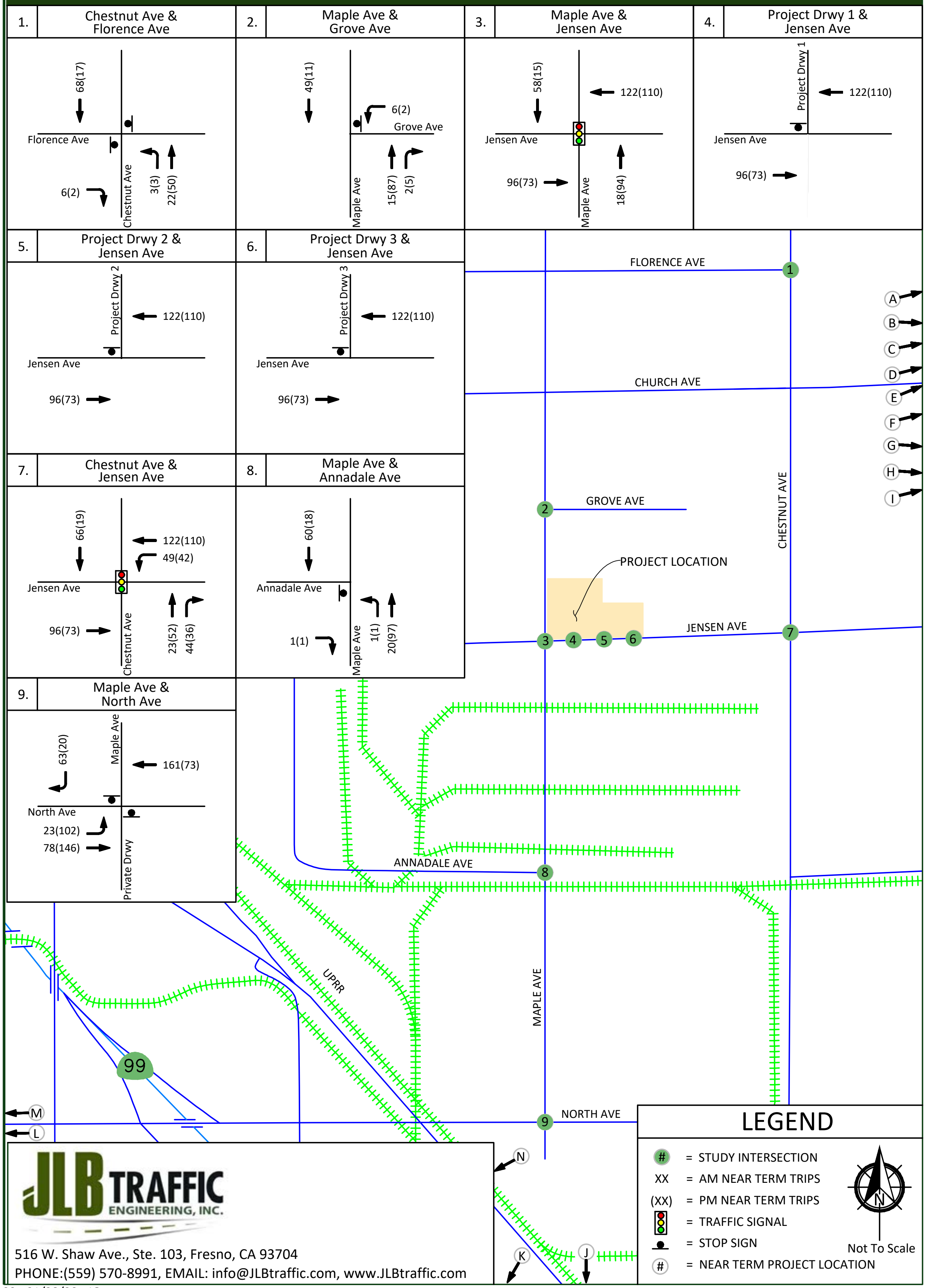
## Table XII: Near Term plus Project Intersection LOS Results

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | Chestnut Avenue / Florence Avenue | Two-Way Stop | **>120.0** | **F** | **68.2** | **F** |
| | | Two-Way Stop (Mitigated) | 12.4 | B | 12.2 | B |
| 2 | Maple Avenue / Grove Avenue | Two-Way Stop | 17.4 | C | 15.0 | C |
| 3 | Maple Avenue / Jensen Avenue | Signalized | 25.4 | C | 26.6 | C |
| 4 | Project Driveway 1 / Jensen Avenue | One-Way Stop | 16.5 | C | 12.4 | B |
| 5 | Project Driveway 2 / Jensen Avenue | One-Way Stop | 16.7 | C | 12.8 | B |
| 6 | Project Driveway 3 / Jensen Avenue | One-Way Stop | 14.6 | B | 11.9 | B |
| 7 | Chestnut Avenue / Jensen Avenue | Signalized | 32.7 | C | 36.1 | D |
| 8 | Maple Avenue / Annadale Avenue | One-Way Stop | 9.7 | A | 9.3 | A |
| 9 | Maple Avenue / North Avenue | One-Way Stop | 24.7 | C | **86.4** | **F** |
| | | Signalized (Mitigated) | 41.7 | D | 20.3 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

## BDM Builders Mixed-Use Development - City of Fresno
## Near Term Projects' Trip Assignment

Figure 8

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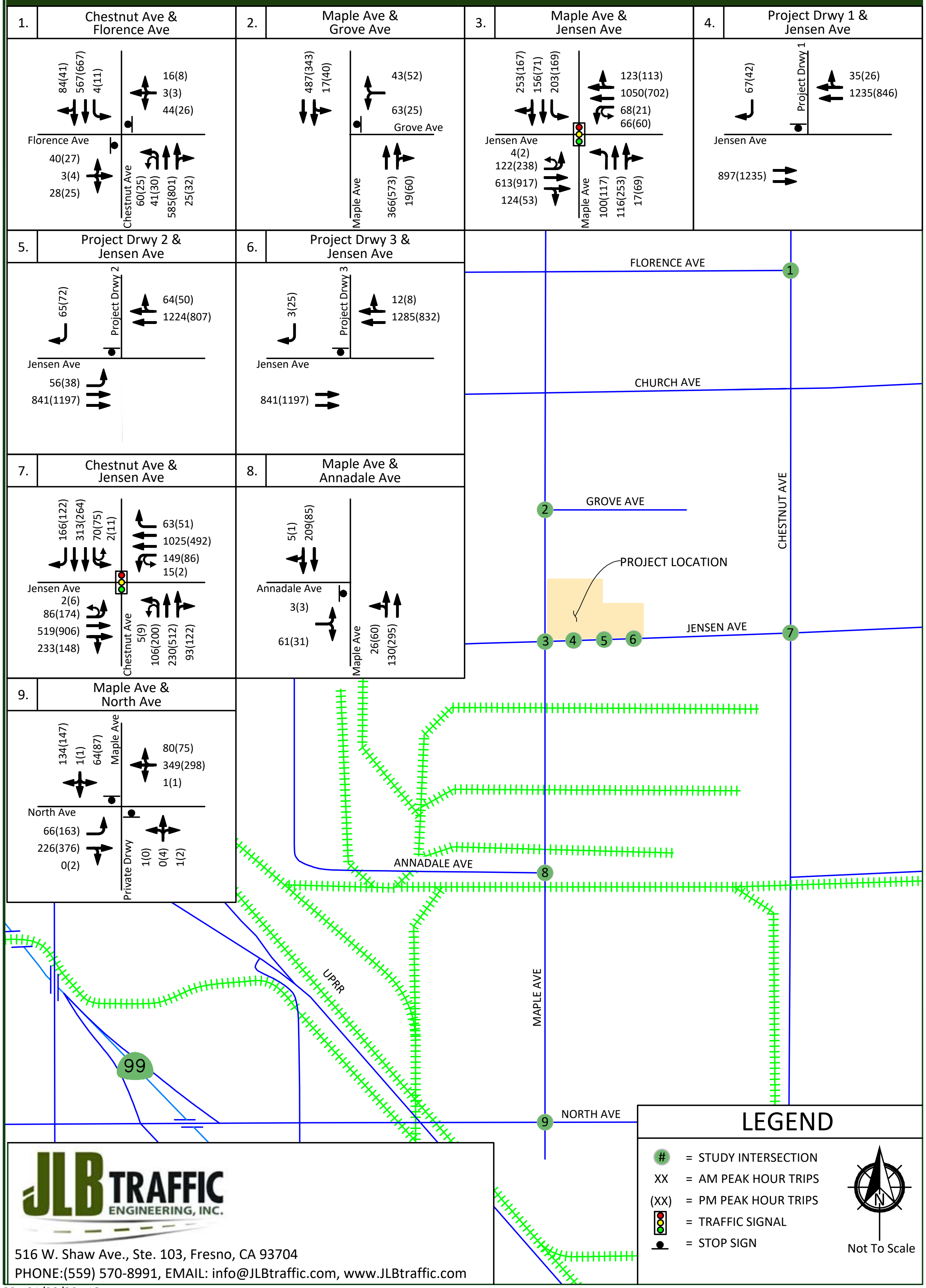
# BDM Builders Mixed-Use Development - City of Fresno
# Near Term plus Project - Traffic Volumes, Geometrics and Controls

Figure 9

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# Cumulative Year 2035 No Project Traffic Conditions

## Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Cumulative Year 2035 No Project Traffic Conditions scenario. These warrants are found in Appendix K. These warrants were prepared pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersection of Maple Avenue and North Avenue satisfies the peak - hour signal warrant during both peak periods. Based on the signal warrant and engineering judgement, signalization of this intersection is recommended.

## Results of Cumulative Year 2035 No Project Level of Service Analysis

The Cumulative Year 2035 No Project Traffic Conditions scenario that the existing roadway geometrics and traffic controls remain in place. Figure 10 illustrates the Cumulative Year 2035 No Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2035 No Project Traffic Conditions scenario are provided in Appendix I. Table XIII presents a summary of the Cumulative Year 2035 No Project peak hour LOS at the study intersections.

Under this scenario, the intersections of Chestnut Avenue and Florence Avenue, Maple Avenue and Jensen Avenue, Chestnut Avenue and Jensen Avenue, and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that the following improvements be implemented.

- Chestnut Avenue / Florence Avenue
  - Modify Florence Avenue to Chestnut Avenue access from full to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)
- Maple Avenue / Jensen Avenue
  - Add a third eastbound through with a receiving lane east of Maple Avenue;
  - Add a third westbound through with a receiving lane west of Maple Avenue; and
  - Modify the traffic signals to accommodate the added lanes.

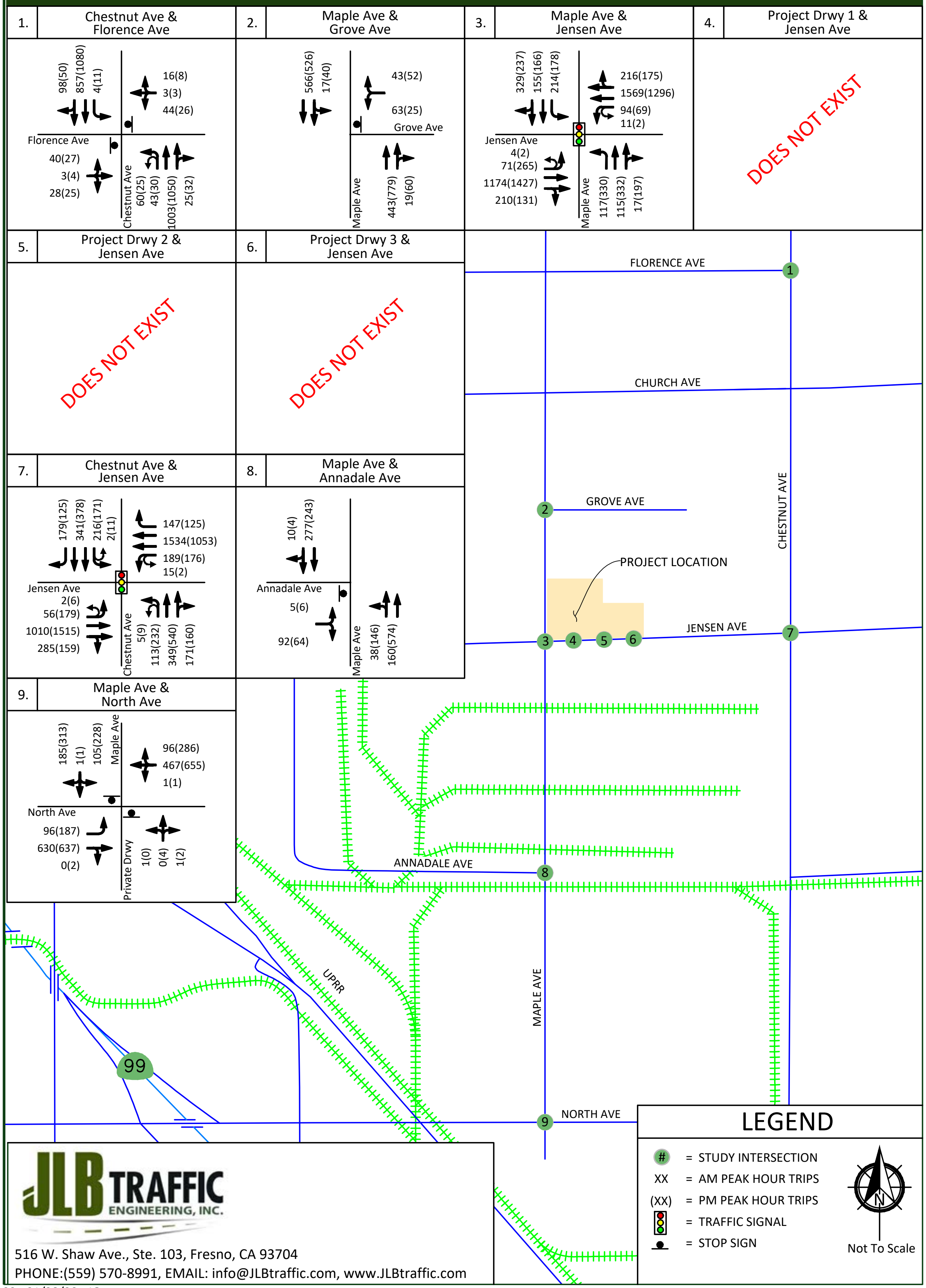
- Chestnut Avenue / Jensen Avenue
  - Add a third eastbound through with a receiving lane east of Chestnut Avenue;
  - Modify the westbound right-turn lane to a through-right lane with a receiving lane west of Chestnut Avenue; and
  - Modify the traffic signals to accommodate the added lanes.
- Maple Avenue / North Avenue
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through-right lane;
  - Signalize the intersection with protective left-turn phasing in the eastbound and westbound approaches and split phasing in the northbound and southbound approaches.

## Table XIII: Cumulative Year 2035 No Project Intersection LOS Results

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | Chestnut Avenue / Florence Avenue | Two-Way Stop | **>120.0** | **F** | **>120.0** | **F** |
| | | Two-Way Stop (Improved) | 13.7 | B | 14.6 | B |
| 2 | Maple Avenue / Grove Avenue | Two-Way Stop | 18.0 | C | 20.8 | C |
| 3 | Maple Avenue / Jensen Avenue | Signalized | 30.7 | C | **87.1** | **F** |
| | | Signalized (Improved) | 21.7 | C | 46.5 | D |
| 4 | Project Driveway 1 / Jensen Avenue | Does Not Exist | N/A | N/A | N/A | N/A |
| 5 | Project Driveway 2 / Jensen Avenue | Does Not Exist | N/A | N/A | N/A | N/A |
| 6 | Project Driveway 3 / Jensen Avenue | Does Not Exist | N/A | N/A | N/A | N/A |
| 7 | Chestnut Avenue / Jensen Avenue | Signalized | 60.5 | E | **90.7** | **F** |
| | | Signalized (Improved) | 42.4 | D | 46.3 | D |
| 8 | Maple Avenue / Annadale Avenue | One-Way Stop | 10.0 | B | 10.7 | B |
| 9 | Maple Avenue / North Avenue | One-Way Stop | **>120.0** | **F** | **>120.0** | **F** |
| | | Signalized (Improved) | 53.9 | D | 75.8 | E |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

# BDM Builders Mixed-Use Development - City of Fresno
# Figure 10
## Cumulative Year 2035 No Project - Traffic Volumes, Geometrics and Controls

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# Cumulative Year 2035 plus Project Traffic Conditions

## Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Cumulative Year 2035 plus Project Traffic Conditions scenario. These warrants are found in Appendix K. These warrants were prepared pursuant to the CA MUTCD guidelines for the preparation of traffic signal warrants. Under this scenario, the intersection of Maple Avenue and North Avenue satisfies the peak -hour signal warrant during both peak periods. Based on the signal warrant and engineering judgement, signalization of this intersection is recommended.

## Results of Cumulative Year 2035 plus Project Level of Service Analysis

The Cumulative Year 2035 plus Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls remain in place. Figure 11 illustrates the Cumulative Year 2035 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2035 plus Project Traffic Conditions scenario are provided in Appendix J. Table XIV presents a summary of the Cumulative Year 2035 plus Project peak hour LOS at the study intersections.

Under this scenario, the intersections of Chestnut Avenue and Florence Avenue, Maple Avenue and Jensen Avenue, Chestnut Avenue and Jensen Avenue, and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that the following improvements be implemented.

- Chestnut Avenue / Florence Avenue
  - Modify Florence Avenue to Chestnut Avenue access from full to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)
- Maple Avenue / Jensen Avenue
  - Add a third eastbound through with a receiving lane east of Maple Avenue;
  - Add a third westbound through with a receiving lane west of Maple Avenue; and
  - Modify the traffic signals to accommodate the added lanes.

- Chestnut Avenue / Jensen Avenue
  - Add a third eastbound through with a receiving lane east of Chestnut Avenue;
  - Modify the westbound right-turn lane to a through-right lane with a receiving lane west of Chestnut Avenue; and
  - Modify the traffic signals to accommodate the added lanes.
- Maple Avenue / North Avenue
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through-right lane;
  - Signalize the intersection with protective left-turn phasing in the eastbound and westbound approaches and split phasing in the northbound and southbound approaches.

**Table XIV: Cumulative Year 2035 plus Project Intersection LOS Results**

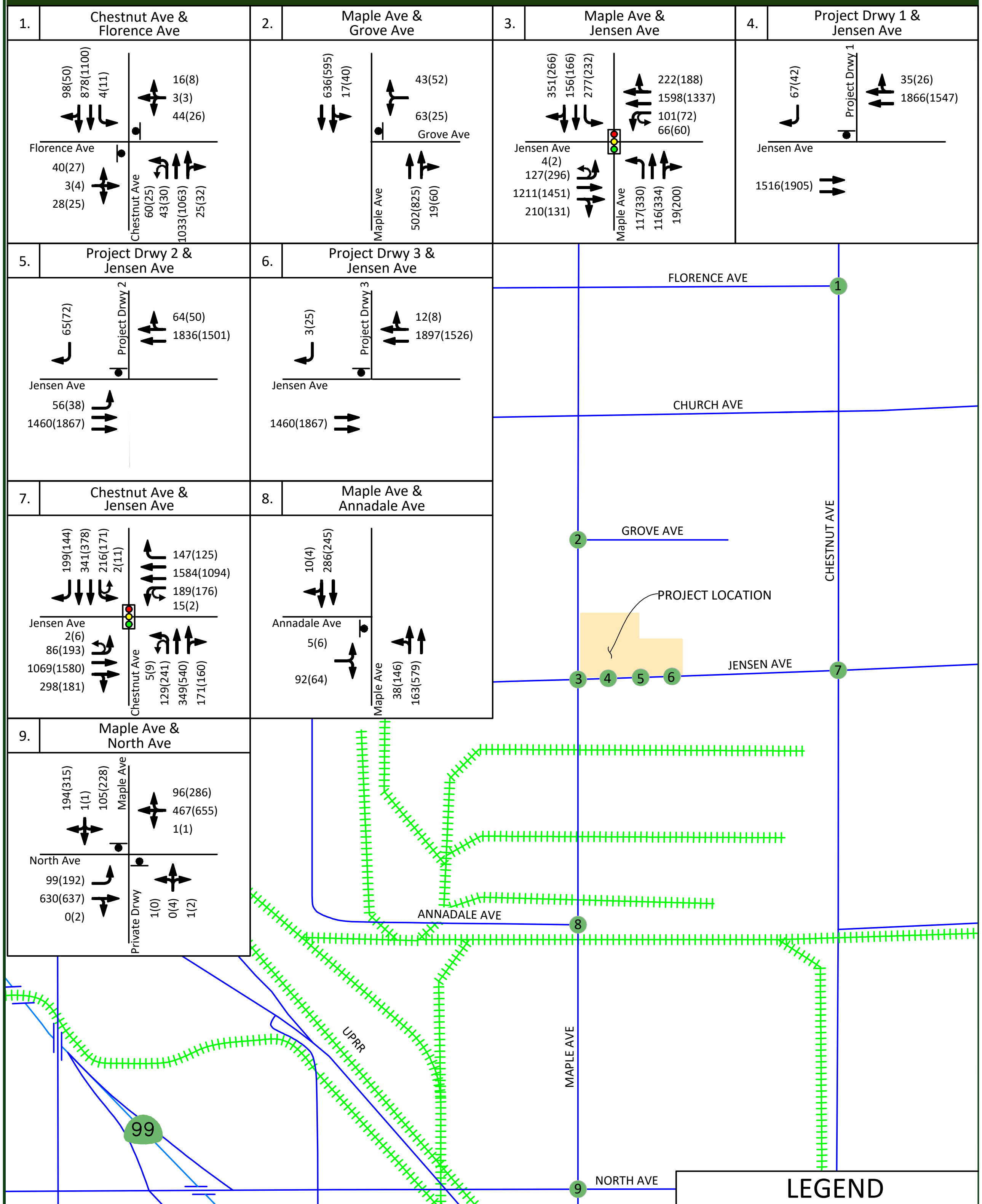
| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | Chestnut Avenue / Florence Avenue | Two-Way Stop | **>120.0** | **F** | **>120.0** | **F** |
| | | Two-Way Stop (Mitigated) | 14.0 | B | 14.8 | B |
| 2 | Maple Avenue / Grove Avenue | Two-Way Stop | 20.8 | C | 23.2 | C |
| 3 | Maple Avenue / Jensen Avenue | Signalized | 53.3 | D | **118.0** | **F** |
| | | Signalized (Mitigated) | 45.8 | D | 79.6 | E |
| 4 | Project Driveway 1 / Jensen Avenue | One-Way Stop | 28.0 | D | 19.1 | C |
| 5 | Project Driveway 2 / Jensen Avenue | One-Way Stop | 27.7 | D | 20.8 | C |
| 6 | Project Driveway 3 / Jensen Avenue | One-Way Stop | 21.2 | C | 17.8 | C |
| 7 | Chestnut Avenue / Jensen Avenue | Signalized | 66.5 | E | **100.6** | **F** |
| | | Signalized (Mitigated) | 42.4 | D | 49.7 | D |
| 8 | Maple Avenue / Annadale Avenue | One-Way Stop | 10.0 | B | 10.7 | B |
| 9 | Maple Avenue / North Avenue | One-Way Stop | **>120.0** | **F** | **>120.0** | **F** |
| | | Signalized (Mitigated) | 55.6 | E | 76.4 | E |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

## Project Only Trips to State Facilities

Figure 12 illustrates the Total Project Driveway Trips, Figure 13 presents the Pass-By Trip Reductions, and Figure 14 presents the Net New Project Trips (after pass-by trip reductions are taken into account) to the interchange of State Route 99 and Jensen Avenue.

# BDM Builders Mixed-Use Development - City of Fresno
# Figure 11
## Cumulative Year 2035 plus Project - Traffic Volumes, Geometrics and Controls

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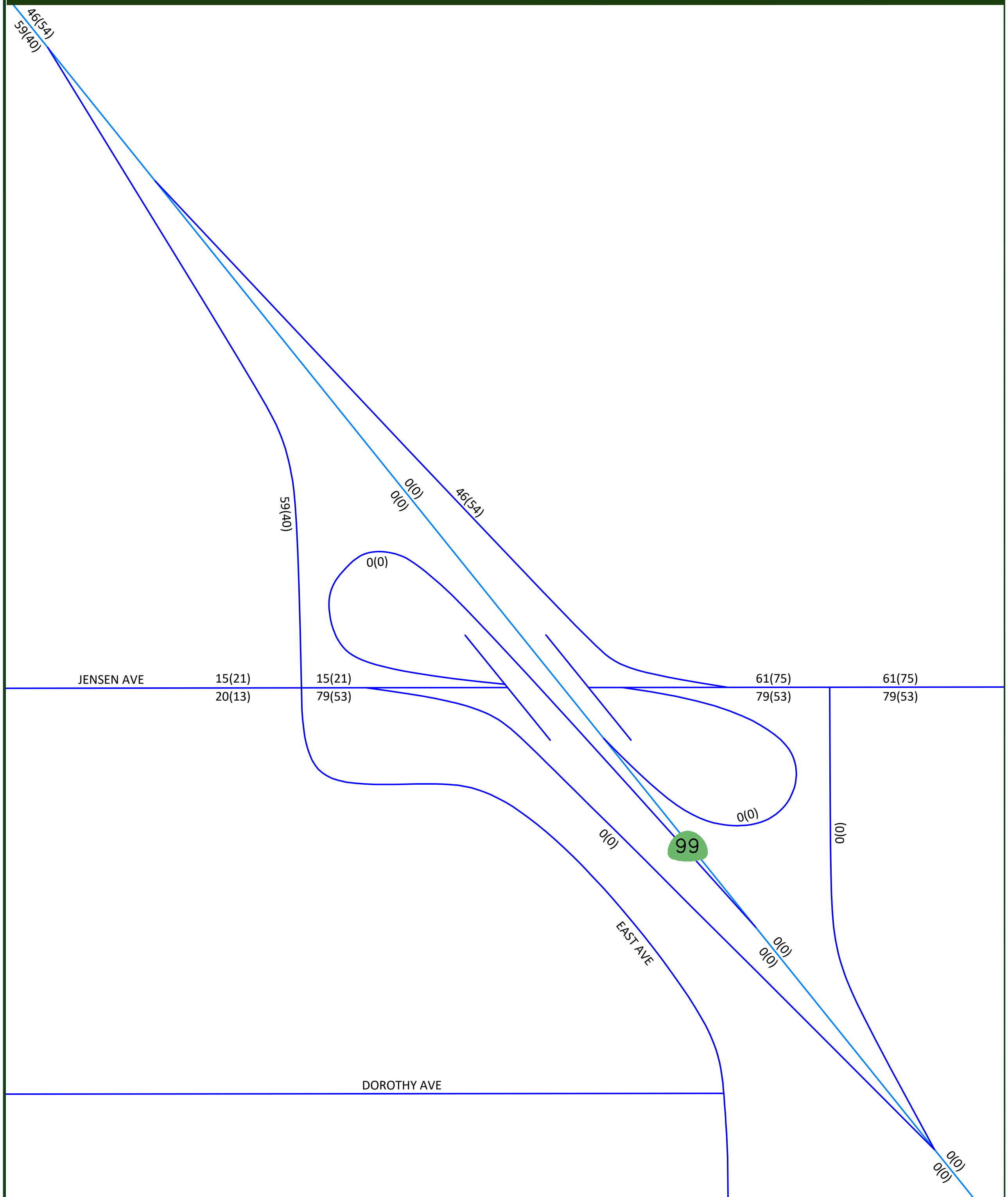
# BDM Builders Mixed-Use Development - City of Fresno
## State Route 99 and Jensen Avenue - Total Project Driveway Trips

Figure 12




## LEGEND

XX = AM DRIVEWAY TRIPS
(XX) = PM DRIVEWAY TRIPS

N

Not To Scale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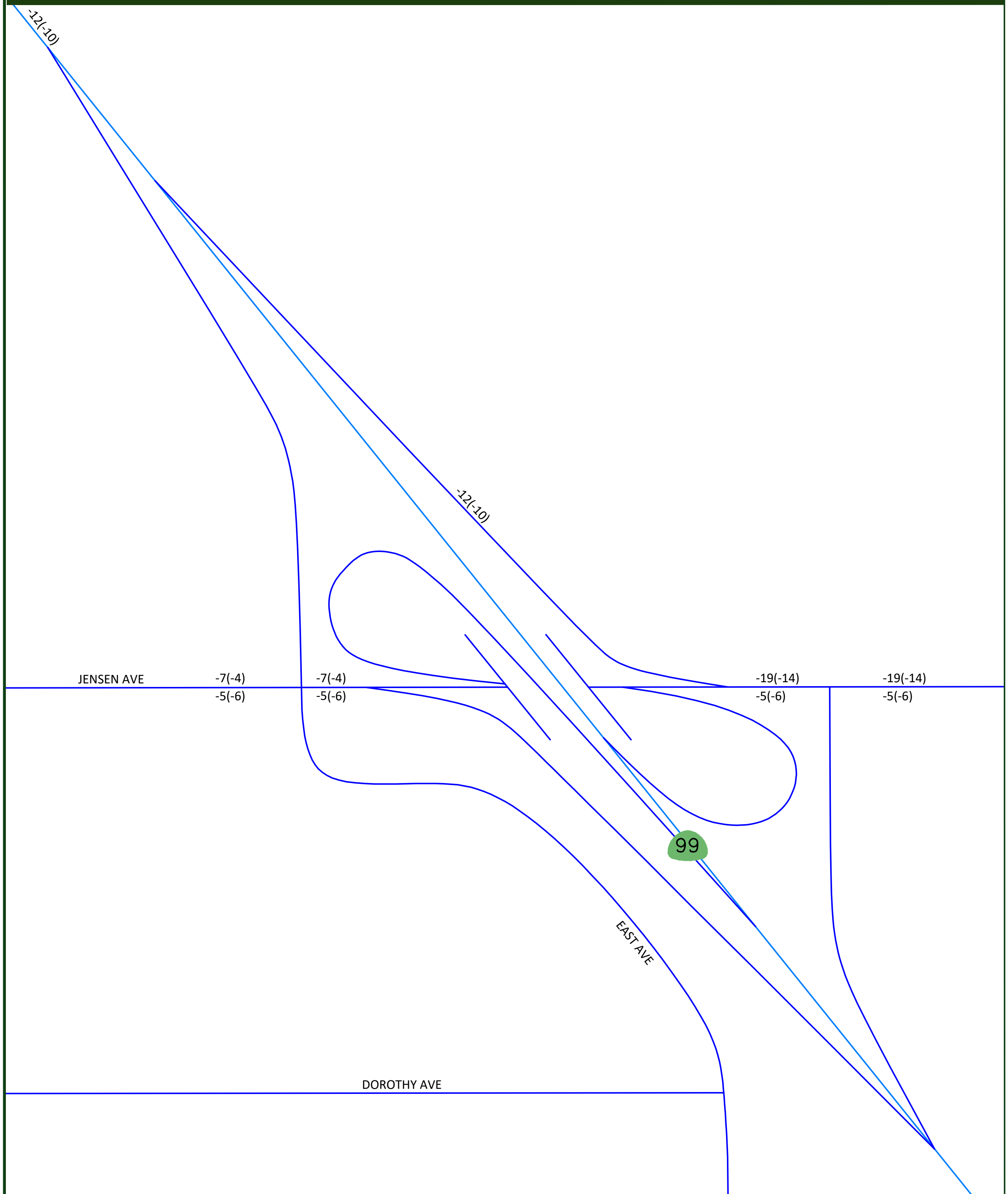
# BDM Builders Mixed-Use Development - City of Fresno
## State Route 99 and Jensen Avenue - Pass-By Trip Reductions

Figure 13




LEGEND

XX = AM PASS-BY TRIPS

(XX) = PM PASS-BY TRIPS

Not To Scale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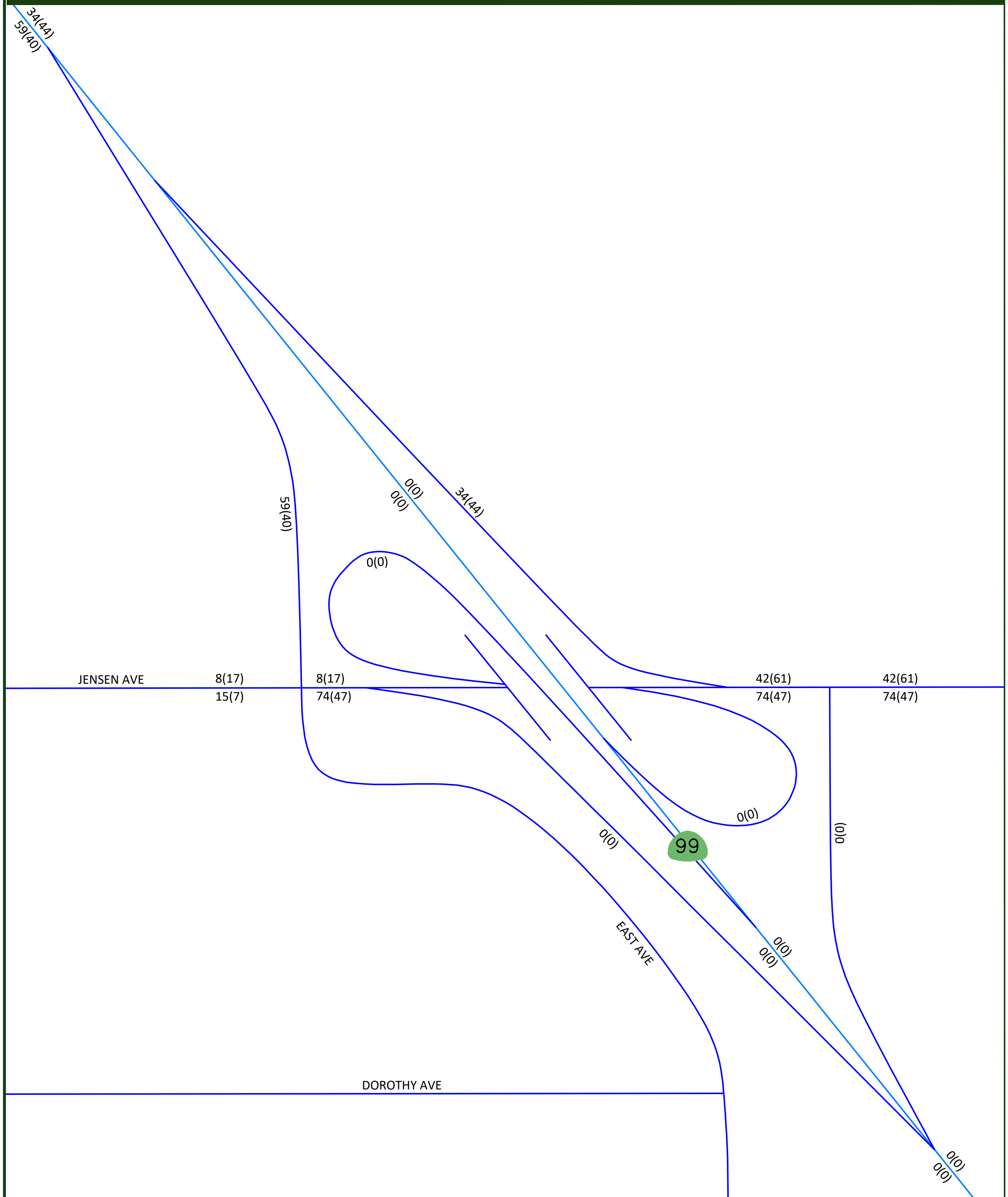
BDM Builders Mixed-Use Development - City of Fresno
State Route 99 and Jensen Avenue - Net New Project Trips

Figure 14




## LEGEND

XX = AM NET NEW TRIPS
(XX) = PM NET NEW TRIPS

Not To Scale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## Queuing Analysis

Table XV provides a queue length summary for left-turn and right-turn lanes at the study intersections under all study scenarios. The queuing analyses for the study intersections are contained in the LOS worksheets for the respective scenarios. Appendix D contains the methodologies used to evaluate these intersections. Queuing analyses were completed using Sim Traffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the Synchro manual, "the 50th percentile maximum queue is the maximum back of queue on a typical cycle and the 95th percentile queue is the maximum back of queue with 95th percentile volumes." The queues shown on Table XV are the 95th percentile queue lengths for the respective lane movements.

The Highway Design Manual (HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. Per the HDM criteria, "tapers for right-turn lanes are usually un-necessary since the main line traffic need not be shifted laterally to provide space for the right-turn lane. If, in some rare instances, a lateral shift were needed, the approach taper would use the same formula as for a left-turn lane." Therefore, a bay taper length pursuant to the Caltrans HDM would need to be added, as necessary, to the recommended storage lengths presented in Table XV.

The storage capacity for the Cumulative Year 2035 plus Project Traffic Conditions shall be based on the SimTraffic output files and engineering judgement. The values in bold presented in Table XV are the projected queue lengths that will likely need to be accommodated by the Cumulative Year 2035 plus Project Traffic Conditions scenario. At the remaining approaches of the study intersections, the existing storage capacity will be sufficient to accommodate the maximum queue.

## Table XV: Queuing Analysis

| *ID* | *Intersection* | *Existing Queue Storage Length (ft.)* | | *Existing* | | *Existing plus Project* | | *Near Term plus Project* | | *Cumulative Year 2035 No Project* | | *Cumulative Year 2035 plus Project* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ***AM*** | ***PM*** | ***AM*** | ***PM*** | ***AM*** | ***PM*** | ***AM*** | ***PM*** | ***AM*** | ***PM*** |
| 1 | Chestnut Avenue / Florence Avenue | EB Right | * | 37 | 36 | 38 | 39 | 45 | 39 | 48 | 47 | 45 | 43 |
| | | WB Right | * | 50 | 52 | 51 | 40 | 51 | 46 | 51 | 51 | 54 | 46 |
| | | NB Left | 150 | 65 | 48 | 52 | 47 | 50 | 48 | 62 | 52 | 63 | 54 |
| | | NB Thru | >500 | 0 | 10 | 0 | 9 | 0 | 0 | 0 | 10 | 0 | 10 |
| | | NB Thru-Right | >500 | 0 | 14 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 20 |
| | | SB Left | 150 | 9 | 21 | 0 | 18 | 9 | 15 | 0 | 30 | 0 | 25 |
| | | SB Thru | >500 | 0 | 9 | 0 | 26 | 0 | 14 | 0 | 14 | 0 | 21 |
| | | SB Thru-Right | >500 | 0 | 22 | 0 | 29 | 7 | 9 | 6 | 10 | 0 | 32 |
| 2 | Maple Avenue / Grove Avenue | WB Left-Right | >500 | 52 | 55 | 64 | 58 | 74 | 60 | 64 | 76 | 64 | 75 |
| | | NB Thru | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | NB Thru-Right | >500 | 0 | 7 | 0 | 0 | 0 | 7 | 0 | 7 | 0 | 0 |
| | | SB Left-Thru | >500 | 9 | 39 | 21 | 44 | 32 | 58 | 16 | 73 | 26 | 68 |
| | | SB Thru | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Maple Avenue / Jensen Avenue | EB Left | 180 | 119 | 197 | 206 | 258 | 138 | 285 | 122 | 336 | **328** | 302 |
| | | EB Thru | >500 | 129 | 222 | 167 | 329 | 232 | 411 | 237 | 570 | 516 | 1208 |
| | | EB Thru | * | * | * | * | * | * | * | 237 | 549 | 476 | 985 |
| | | EB Thru-Right | >500 | 165 | 204 | 173 | 274 | 247 | 396 | 277 | 384 | 409 | 755 |
| | | WB Left | 180 | 114 | 38 | 200 | 147 | 202 | 151 | 145 | 187 | 287 | **339** |
| | | WB Thru | >500 | 209 | 156 | 244 | 227 | 288 | 297 | 369 | 276 | 387 | 389 |
| | | WB Thru | * | * | * | * | * | * | * | 411 | 285 | 403 | 385 |
| | | WB Thru-Right | >500 | 246 | 174 | 259 | 260 | 299 | 315 | 461 | 317 | 411 | 391 |
| | | NB Left | 180 | 121 | 124 | 128 | 138 | 111 | 126 | 143 | 290 | 142 | **288** |
| | | NB Thru | >500 | 69 | 97 | 74 | 107 | 77 | 121 | 70 | 275 | 81 | 1728 |
| | | NB Thru-Right | >500 | 62 | 120 | 85 | 130 | 95 | 141 | 104 | 231 | 98 | 1491 |
| | | SB Left | 180 | 156 | 148 | 191 | 189 | 207 | 178 | 223 | 242 | 294 | **301** |
| | | SB Thru | >500 | 85 | 82 | 96 | 55 | 129 | 68 | 161 | 229 | 966 | 1430 |
| | | SB Thru-Right | >500 | 141 | 118 | 214 | 90 | 200 | 116 | 252 | 241 | 940 | 1324 |

Note: * = Does not exist or is not projected to exist

## Table XV: Queuing Analysis (cont.)

| ID | Intersection | Existing Queue Storage Length (ft.) | | Existing | | Existing plus Project | | Near Term plus Project | | Cumulative Year 2035 No Project | | Cumulative Year 2035 plus Project | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 4 | Project Driveway 1 / Jensen Avenue | EB Thru | * | * | * | 0 | 0 | 0 | 16 | * | * | 0 | 0 |
| | | EB Thru | * | * | * | 0 | 0 | 0 | 0 | * | * | 0 | 0 |
| | | EB Thru | * | * | * | * | * | * | * | * | * | 0 | 0 |
| | | WB Thru | * | * | * | 0 | 0 | 0 | 0 | * | * | 138 | 136 |
| | | WB Thru | * | * | * | * | * | * | * | * | * | 172 | 157 |
| | | WB Thru-Right | * | * | * | 7 | 8 | 0 | 6 | * | * | 197 | 162 |
| | | SB Right | * | * | * | 74 | 51 | 77 | 46 | * | * | **208** | 206 |
| 5 | Project Driveway 2 / Jensen Avenue | EB Left | * | * | * | 71 | 57 | 61 | 49 | * | * | **77** | 43 |
| | | EB Thru | * | * | * | 30 | 0 | 0 | 0 | * | * | 38 | 0 |
| | | EB Thru | * | * | * | 0 | 0 | 0 | 0 | * | * | 0 | 0 |
| | | EB Thru | * | * | * | * | * | * | * | * | * | 0 | 0 |
| | | WB Thru | * | * | * | 0 | 13 | 13 | 0 | * | * | 0 | 0 |
| | | WB Thru | * | * | * | * | * | * | * | * | * | 0 | 0 |
| | | WB Thru-Right | * | * | * | 7 | 10 | 16 | 10 | * | * | 7 | 0 |
| | | SB Right | * | * | * | 59 | 72 | 67 | 76 | * | * | **84** | 77 |
| 6 | Project Driveway 3 / Jensen Avenue | EB Thru | * | * | * | 0 | 0 | 0 | 0 | * | * | 0 | 0 |
| | | EB Thru | * | * | * | 0 | 0 | 0 | 0 | * | * | 0 | 0 |
| | | EB Thru | * | * | * | * | * | * | * | * | * | 0 | 0 |
| | | WB Thru | * | * | * | 0 | 0 | 0 | 0 | * | * | 0 | 0 |
| | | WB Thru | * | * | * | * | * | * | * | * | * | 0 | 0 |
| | | WB Thru-Right | * | * | * | 0 | 0 | 0 | 0 | * | * | 0 | 0 |
| | | SB Right | * | * | * | 18 | 50 | 24 | 44 | * | * | 36 | **52** |

Note: * = Does not exist or is not projected to exist

## Table XV: Queuing Analysis (cont.)

| ID | Intersection | Existing Queue Storage Length (ft.) | | Existing | | Existing plus Project | | Near Term plus Project | | Cumulative Year 2035 No Project | | Cumulative Year 2035 plus Project | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 7 | Chestnut Avenue / Jensen Avenue | EB Left | 250 | 63 | 148 | 119 | 227 | 128 | 215 | 123 | 396 | 134 | 208 |
| | | EB Thru | >500 | 121 | 259 | 137 | 282 | 160 | 365 | 226 | 638 | 213 | 328 |
| | | EB Thru | * | * | * | * | * | * | * | 226 | 665 | 270 | 378 |
| | | EB Thru-Right | >500 | 180 | 301 | 200 | 309 | 196 | 390 | 314 | 691 | 327 | 426 |
| | | WB Left | 140 | 133 | 128 | 144 | 66 | 212 | 172 | 310 | 232 | **297** | 276 |
| | | WB Thru | >500 | 201 | 145 | 211 | 161 | 277 | 208 | 515 | 295 | 442 | 397 |
| | | WB Thru | >500 | 200 | 149 | 207 | 167 | 273 | 213 | 486 | 279 | 430 | 370 |
| | | WB Thru-Right | * | * | * | * | * | * | * | 390 | 291 | 415 | 301 |
| | | WB Right | 75 | 87 | 115 | 116 | 69 | 118 | 107 | * | * | * | * |
| | | NB Left | 180 | 106 | 233 | 130 | 254 | 173 | 189 | 122 | 354 | 175 | **281** |
| | | NB Thru | >500 | 116 | 260 | 119 | 269 | 127 | 216 | 176 | 452 | 193 | 284 |
| | | NB Thru-Right | >500 | 118 | 282 | 95 | 253 | 161 | 224 | 215 | 396 | 249 | 294 |
| | | SB Left | 240 | 100 | 103 | 98 | 132 | 99 | 100 | 326 | 223 | 221 | 211 |
| | | SB Thru | >500 | 110 | 114 | 109 | 126 | 127 | 108 | 237 | 160 | 184 | 149 |
| | | SB Thru | >500 | 112 | 119 | 123 | 125 | 129 | 114 | 172 | 173 | 204 | 158 |
| | | SB Right | 120 | 64 | 51 | 74 | 68 | 102 | 52 | 106 | 63 | **133** | 72 |
| 8 | Maple Avenue / Annadale Avenue | EB Left-Right | >500 | 42 | 45 | 46 | 50 | 55 | 41 | 58 | 47 | 56 | 48 |
| | | NB Left-Thru | >500 | 26 | 19 | 0 | 9 | 9 | 29 | 30 | 63 | 27 | 58 |
| | | NB Thru | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 0 |
| | | SB Thru | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | SB Thru-Right | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | Maple Avenue / North Avenue | EB Left | 415 | 25 | 31 | 21 | 53 | 107 | 153 | 122 | 223 | 123 | 272 |
| | | EB Thru-Right | >500 | 0 | 0 | 0 | 0 | 69 | 101 | 199 | 296 | 204 | 303 |
| | | WB Left | * | * | * | * | * | 0 | 8 | 9 | 0 | **5** | 0 |
| | | WB Left-Thru-Right | >500 | 0 | 0 | 0 | 17 | * | * | * | * | * | * |
| | | WB Thru-Right | * | * | * | * | * | 181 | 159 | * | * | * | * |
| | | WB Thru | * | * | * | * | * | * | * | 239 | 650 | 264 | 356 |
| | | WB Right | * | * | * | * | * | * | * | 63 | 274 | 46 | **167** |
| | | NB Left-Thru-Right | >500 | 18 | 35 | 18 | 21 | 33 | 31 | 24 | 33 | 0 | 25 |
| | | SB Left | * | * | * | * | * | 93 | 94 | 110 | 240 | 148 | **244** |
| | | SB Left-Thru-Right | >500 | 61 | 97 | 63 | 94 | * | * | * | * | * | * |
| | | SB Thru-Right | * | * | * | * | * | 89 | 74 | 114 | 270 | 112 | 238 |

Note: * = Does not exist or is not projected to exist

# Project's Pro-Rata Fair Share of Future Transportation Improvements

The Project's fair share percentage impact to study intersections projected to fall below their LOS threshold and which are not covered by an existing impact fee program is provided in Table XVI. The Project's fair share percentage impacts were calculated pursuant to the Caltrans Guide for the Preparation of Traffic Impact Studies. The Project's pro-rata fair shares were calculated utilizing the Existing volumes, Net New Project Trips and Cumulative Year 2035 plus Project volumes. Figure 2 illustrates the Existing traffic volumes, Figure 6 illustrates the Net New Project Trips, and Figure 11 illustrates the Cumulative Year 2035 plus Project traffic volumes. Since the critical peak period for the study facilities was determined to be during the PM peak, the PM peak volumes are utilized to determine the Project's pro-rata fair share.

It is recommended that the Project contribute its equitable fair share as listed in Table XVI for the future improvements necessary to maintain an acceptable LOS. However, fair share contributions should only be made for those facilities, or portion thereof, currently not funded by the responsible agencies roadway impact fee program(s) or grant funded projects, as appropriate. For those improvements not presently covered by local, regional roadway impact fee programs or grant funding, it is recommended that the Project contribute its equitable fair share. Payment of the Project's equitable fair share in addition to the local and regional impact fee programs would satisfy the Project's traffic improvement measures.

This study does not provide construction costs for the recommended improvement measures; therefore, if the recommended improvement measures are implemented, it is recommended that the developer work with the City of Fresno to develop the estimated construction cost(s).

### Table XVI: Project's Fair Share of Future Roadway Improvements

| *ID* | *Intersection* | *Existing Traffic Volumes (PM Peak)* | *Cumulative Year 2035 plus Project Traffic Volumes (PM Peak)* | *Net New Project Trips (PM Peak)* | *Project's Fair Share (%)* |
|---|---|---|---|---|---|
| 1 | Chestnut Avenue / Florence Avenue | 1,595 | 2,404 | 33 | 4.08 |
| 3 | Maple Avenue / Jensen Avenue | 2,402 | 5,065 | 258 | 9.69 |
| 7 | Chestnut Avenue / Jensen Avenue | 2,678 | 5,011 | 170 | 7.29 |
| 9 | Maple Avenue / North Avenue | 808 | 2,323 | 7 | 0.46 |

Note: Project Fair Share = ((Net New Project Trips) / (Cumulative Year 2035 + Project Traffic Volumes - Existing Traffic Volumes)) x 100

# Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

## *Existing Traffic Conditions*

- JLB conducted a search of the Statewide Integrated Traffic Records System (SWITRS) to review collision reports for the most recent five-year period (January 1, 2014 to December 31, 2018).
- In the five-year period, a total of 34 collisions were reported within the influence zone of the existing study intersections. Based on this data, it is recommended that the City of Fresno analyze the intersections of Maple Avenue and Jensen Avenue as well as Chestnut Avenue and Jensen Avenue as part of its current Systematic Safety Analysis. While the average of broadside collisions per year at these locations is low (average one per year), an analysis of these intersections will help to determine if any of the broadside collisions at the aforementioned locations could be reduced.
- At present, the intersection of Chestnut Avenue and Florence Avenue exceeds its acceptable LOS threshold during both peak periods. To improve the LOS of this intersection, it is recommended that the following improvements be implemented.
    - Chestnut Avenue / Florence Avenue
        - Modify Florence Avenue to Chestnut Avenue access from full access to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)

### *Existing plus Project Traffic Conditions*

- Early versions of the Project Site Plan had the proposed Driveway 2 (left-in, right-in, right-out) along Jensen Avenue closer to Maple Avenue. However, based on the SimTraffic Queuing Reports, JLB recommended that Driveway 2 be moved further east to the placement presented in the latest Project Site Plan. Since the changes to the Project Site Plan have been incorporated, JLB is in support of the location of the proposed driveways and types of access.
- It is recommended that a corner sight distance evaluation for each of the proposed driveways be taken into account to ensure the safety of pedestrians and bicyclists along the future trail along the north side of Jensen Avenue.
- Internally within the Project site, it is recommended that a STOP sign for northbound traffic be installed at the northern terminus of the driveway aisle that serves Project Driveway 2. This should help improve traffic safety across this internal intersection while also reducing speeds.
- At buildout, the proposed Project is estimated to generate a maximum of 10,432 daily trips, 727 AM peak hour trips and 833 PM peak hour total trips (before internal capture and pass-by trip reductions are taken into account). The proposed General Plan land use is estimated to generate a maximum of 2,916 daily, 121 AM peak hour and 286 PM peak hour total trips. Compared to the proposed General Plan, the proposed Project is estimated to yield greater trips by 7,516 daily, 606 AM peak hour and 547 PM peak hour trips.
- This analysis considers reductions in trip generation as a result of internal capture and applies pass-by trip reductions pursuant to the 3rd Edition of the Trip Generation Handbook published by ITE. After internal capture trip reductions are applied, the proposed Project is estimated to generate a maximum of 8,486 daily, 625 AM peak hour and 544 PM peak hour total driveway trips (before pass-by trip reductions are taken into account). Lastly, after applying pass-by trip reductions, the maximum net new trips that the Project is estimated to generate are 7,306 daily trips, 471 AM peak hour trips and 418 PM peak hour trips.
- It is recommended that the Project implement a Class II Bike Lane along its frontage to Maple Avenue and a Class I Bike Path along its frontage to Jensen Avenue.
- It is recommended that the Project implement walkways that are ADA compliant along its frontages to Maple Avenue and Jensen Avenue.
- Based on the Fresno COG model run, the Project is anticipated to generate an average of 6.68 VMT per trip. However, the Fresno COG model does not take into account for pass-by trips. Thus, it is estimated that the actual VMT per trip will be to some extent lower than that presented in the Fresno COG model.
- Under this scenario, the intersection of Chestnut Avenue and Florence Avenue is projected to exceed its acceptable LOS threshold during both peak periods. To improve the LOS of this intersection, it is recommended that the following improvements be implemented.

- Chestnut Avenue / Florence Avenue
  - Modify Florence Avenue to Chestnut Avenue access from full to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)

### *Near Term plus Project Traffic Conditions*

- The total trip generation for the Near Term Projects is 42,925 daily trips, 6,381 AM peak hour trips and 4,572 PM peak hour trips.
- Under this scenario, the intersections of Chestnut Avenue and Florence Avenue and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that the following improvements be implemented.
  - Chestnut Avenue / Florence Avenue
    - Modify Florence Avenue to Chestnut Avenue access from full to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)

- Maple Avenue / North Avenue
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through-right lane;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through-right lane;
  - Signalize the intersection with protective left-turn phasing in the eastbound and westbound approaches and split phasing in the northbound and southbound approaches.

- It should be noted that between the Existing Traffic Conditions and the Near Term plus Project Traffic Conditions, the Project accounts for 14.5 percent of the daily trips, 6.9 percent of the AM peak hour trips and 8.4 percent of the PM peak hour trips of growth in traffic, while the rest can be attributable to the Near Term Projects. Therefore, one can deduce that the majority improvement measures presented under this scenario may not be necessary immediately upon completion of the proposed Project.

### *Cumulative Year 2035 No Project Traffic Conditions*

- Under this scenario, the intersections of Chestnut Avenue and Florence Avenue, Maple Avenue and Jensen Avenue, Chestnut Avenue and Jensen Avenue, and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that the following improvements be implemented.
  - Chestnut Avenue / Florence Avenue
    - Modify Florence Avenue to Chestnut Avenue access from full to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)
  - Maple Avenue / Jensen Avenue
    - Add a third eastbound through with a receiving lane east of Maple Avenue;
    - Add a third westbound through with a receiving lane west of Maple Avenue; and
    - Modify the traffic signals to accommodate the added lanes.

- Chestnut Avenue / Jensen Avenue
  - Add a third eastbound through with a receiving lane east of Chestnut Avenue;
  - Modify the westbound right-turn lane to a through-right lane with a receiving lane west of Chestnut Avenue; and
  - Modify the traffic signals to accommodate the added lanes.
- Maple Avenue / North Avenue
  - Add a westbound left-turn lane;
  - Modify the westbound left-through-right lane to a through lane;
  - Add a westbound right-turn lane;
  - Add a southbound left-turn lane;
  - Modify the southbound left-through-right lane to a through-right lane;
  - Signalize the intersection with protective left-turn phasing in the eastbound and westbound approaches and split phasing in the northbound and southbound approaches.

### *Cumulative Year 2035 plus Project Traffic Conditions*

- Under this scenario, the intersections of Chestnut Avenue and Florence Avenue, Maple Avenue and Jensen Avenue, Chestnut Avenue and Jensen Avenue, and Maple Avenue and North Avenue are projected to exceed their acceptable LOS threshold during one or both peak periods. To improve the LOS of these intersections, it is recommended that the following improvements be implemented.
  - Chestnut Avenue / Florence Avenue
    - Modify Florence Avenue to Chestnut Avenue access from full to limited left-in, right-in and right-out access only. To accomplish this, it is recommended that a raised median island "worm" be extended across the intersection along the center of Chestnut Avenue. With the extension of the raised median island "worm," eastbound left-turn and through maneuvers would either a) turn right onto southbound Chestnut Avenue, make a southbound-to-northbound U-turn at Belgravia Avenue, and then continue to make a northbound through or right-turn maneuver at Florence Avenue or b) utilize Belgravia Avenue to make an eastbound left-turn and then continue to make a northbound through or right-turn maneuver at Florence Avenue. Similarly, westbound left-turn and through maneuvers would either a) turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue or b) utilize Geary Street to turn right onto northbound Chestnut Avenue, make a northbound-to-southbound U-turn at Dwight Way, and then continue to make a southbound through or right-turn maneuver at Florence Avenue. (Note: This analysis assumes that trips affected by the implementation of this recommendation are split evenly amongst their respective alternate travel paths.)
  - Maple Avenue / Jensen Avenue
    - Add a third eastbound through with a receiving lane east of Maple Avenue;
    - Add a third westbound through with a receiving lane west of Maple Avenue; and
    - Modify the traffic signals to accommodate the added lanes.

- Chestnut Avenue / Jensen Avenue
    - Add a third eastbound through with a receiving lane east of Chestnut Avenue;
    - Modify the westbound right-turn lane to a through-right lane with a receiving lane west of Chestnut Avenue; and
    - Modify the traffic signals to accommodate the added lanes.
- Maple Avenue / North Avenue
    - Add a westbound left-turn lane;
    - Modify the westbound left-through-right lane to a through lane;
    - Add a westbound right-turn lane;
    - Add a southbound left-turn lane;
    - Modify the southbound left-through-right lane to a through-right lane;
    - Signalize the intersection with protective left-turn phasing in the eastbound and westbound approaches and split phasing in the northbound and southbound approaches.

### *Queuing Analysis*

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

### *Project's Equitable Fair Share*

- It is recommended that the Project contribute its equitable fair share as listed in Table XVI for the future improvements necessary at study intersections projected to fall below their LOS threshold and which are not covered by an existing impact fee program.

# Study Participants

**JLB Traffic Engineering, Inc. Personnel:**

| | |
|---|---|
| Jose Luis Benavides, PE, TE | Project Manager |
| Susana Maciel, EIT | Project Engineer |
| Matthew Arndt, EIT | Engineer I/II |
| Jove Alcazar, EIT | Engineer I/II |
| Javier Rios | Engineer I/II |
| Jesus Garcia | Engineer I/II |
| Dennis Wynn | Sr. Engineering Technician |
| Adrian Benavides | Engineering Aide |
| Justin Barnett | Engineering Aide |
| Michael McConnell | Engineering Aide |
| Christian Sanchez | Engineering Aide |

**Persons Consulted:**

| | |
|---|---|
| Shishu Bedi | BDM Builders |
| Jill Gormley | City of Fresno |
| Harmanjit Dhaliwal | City of Fresno |
| Brian Spaunhurst | County of Fresno |
| David Padilla | Caltrans |
| Kai Han | Fresno COG |
| Lang Yu | Fresno COG |

# References

1. City of Fresno, *Fresno General Plan (2014)*.
2. County of Fresno, *2000 General Plan*.
3. *Guide for the Preparation of Traffic Impact Studies*, Caltrans, dated December 2002.
4. *Trip Generation,* 10th Edition, Washington D.C., Institute of Transportation Engineers, 2017.
5. *2014 California Manual on Uniform Traffic Control Devices*, Caltrans, November 7, 2014.
6. City of Fresno, *Active Transportation Plan*, December 2016, adopted March 2, 2017.

# Appendix A: Scope of Work

November 6, 2019

Mrs. Jill Gormley
Traffic Engineer
City of Fresno
2600 Fresno Street
Fresno, CA 93721-3616

Via Email Only: Jill.Gormley@fresno.gov

***Subject: Draft Scope of Work for the Preparation of a Traffic Impact Analysis for a Mixed-Use Development Project Located on the Northeast Corner of Maple Avenue and Jensen Avenue in the City of Fresno (JLB Project 004-109)***

Dear Mrs. Gormley,

JLB Traffic Engineering, Inc. (JLB) hereby submits this Draft Scope of Work for the preparation of a Traffic Impact Analysis (TIA) for a Mixed-Use Development (Project) located on the northeast corner of Maple Avenue and Jensen Avenue in the City of Fresno. The Project proposes to construct a 4,000 square-foot gasoline/service station with convenience market (16 fueling positions), a 5,000 square-foot small office building, a 14,500 square-foot medical-dental office building, 32,000 square feet of shopping center, a 6,000 square-foot walk-in bank, a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-foot restaurant without drive-through window, a 4,000 square-foot day care, 150 units of multi-family housing (3-story), and a 2,000 square-foot coffee/donut shop with drive-through window. Based on information provided to JLB, the Project will undergo a General Plan Amendment. An aerial of the Project vicinity and the Project Site Plan are presented in Exhibits A and B, respectively.

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. To evaluate the on-site and off-site traffic impacts of the proposed Project, JLB proposes the following Scope of Work.

### *Scope of Work*

- JLB will request a Fresno Council of Governments (Fresno COG) traffic forecast model run for the Project (Select Zone Analysis) which will include the Project and the streets to be analyzed. The Fresno COG traffic forecasting model will be used to forecast traffic volumes for the Base Year 2019 and Cumulative Year 2035 scenarios.
- JLB will, as necessary, obtain recent (less than 12 months) or schedule and conduct new traffic counts at the study facilities. These counts will include pedestrians and vehicles. These counts will be conducted on typical school schedule and non-inclement weather days as soon as possible. These counts will not take place during weeks with holidays, non-school days, roadway construction, etc.
- JLB will perform a site visit to observe existing traffic conditions, especially during the AM and PM peak hours. Existing roadway conditions including intersection geometrics and traffic controls will be verified.

- JLB will evaluate onsite circulation and provide recommendations as necessary to improve circulation to and within the Project site. Particular attention will be paid to conflicting traffic movements, location of local roadways to major streets, and onsite vehicular ingress and egress routes.
- JLB will prepare California Manual on Uniform Traffic Control Devices (CA MUTCD) Warrant 1 "8-hour" and Warrant 2 "4-hour" for existing unsignalized study intersections under the Existing Traffic Conditions scenario.
- JLB will prepare CA MUTCD Warrant 3 "Peak Hour" for unsignalized study intersections under the Existing plus Project, Near Term plus Project, and Cumulative Year 2035 Traffic Conditions scenarios.
- JLB will qualitatively analyze existing and planned transit routes in the vicinity of the Project.
- JLB will qualitatively analyze existing and planned bikeways in the vicinity of the Project.
- JLB will qualitatively analyze existing and planned walkways in the vicinity of the Project.
- JLB will forecast trip distribution based on turn count information and knowledge of the existing and planned circulation network in the vicinity of the Project.
- JLB will evaluate existing and forecast future levels of service (LOS) at the study intersection(s) and/or segment(s). JLB will use HCM 6th Edition or HCM 2000 methodologies, as appropriate, within Synchro software to perform this analysis for the AM and PM peak hours. JLB will identify the cause(s) of poor LOS and propose improvement measures (if any).
- JLB will prepare a five-year collision analysis based on the Statewide Integrated Traffic Reporting Systems (SWITRS) database for all existing study intersections under the Existing Traffic Conditions scenario.

***Study Scenarios:***

1. Existing Traffic Conditions with needed improvements (if any);
2. Existing plus Project Traffic Conditions with proposed mitigation measures (if any);
3. Near Term plus Project, plus Approved and Pending Development Traffic Conditions with proposed mitigation measures (if any);
4. Cumulative Year 2035 No Project Traffic Conditions with proposed improvement measures (if any); and
5. Cumulative Year 2035 plus Project Traffic Conditions with proposed mitigation measures (if any).

***Weekday peak hours to be analyzed (Tuesday through Thursday only):***

1. 7 - 9 AM peak hour
2. 4 - 6 PM peak hour

***Study Intersections:***

1. Chestnut Avenue / Florence Avenue
2. Maple Avenue / Grove Avenue
3. Maple Avenue / Jensen Avenue
4. Project Driveway 1 (right-in and right-out) / Jensen Avenue
5. Project Driveway 2 (left-in, right-in, and right-out) / Jensen Avenue
6. Project Driveway 3 (right-in, and right-out) / Jensen Avenue
7. Chestnut Avenue / Jensen Avenue
8. Maple Avenue / Annadale Avenue
9. Maple Avenue / North Avenue

Queuing analysis is included in the proposed Scope of Work for the study intersection(s) listed above under all study scenarios. This analysis will be utilized to recommend minimum storage lengths for left-turn and right-turn lanes at all study intersections.

***Study Segments:***

1. None

***Project Only Trip Assignment to the following State Facilities:***

1. State Route 99 / Jensen Avenue

***Project Trip Generation***

Trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table I presents the trip generation for the proposed Project with trip generation rates for Gasoline/Service Station with Convenience Market, Small Office Building, Medical-Dental Office Building, Shopping Center, Walk-in Bank, Fast-Food Restaurant with Drive-Through Window, Fast-Food Restaurant without Drive-Through Window, Day Care Center, Multifamily Housing (Mid-Rise) and Coffee Shop. While the ITE Trip Generation Manual does not provide a weekday daily rate for a Walk-in Bank, JLB utilized the weekday daily rate for a Drive-in Bank as a conservative measure. At buildout, the proposed Project is estimated to generate a maximum of 10,432 daily trips, 727 AM peak hour trips and 833 PM peak hour driveway trips (before internal capture and pass-by rate reductions are taken into account).

The TIA proposes to consider reductions in trip generation as a result of internal capture. Internal capture rates were prepared pursuant to the NCHRP 684 Internal Trip Capture procedure. Internal capture trip reductions are applied to account for the interaction between various individual land uses assumed for the trip generation of the Project. For example, in a mixed-use development containing offices and shops, trips made by the office workers to the stops within the site are defined as internal, or captured, trips within the site. Table II presents the results of the internal capture trip analysis for the proposed Project. Captured trips are presented as negative numbers because they are deducted from the total number of driveway trips presented in Table I. Table III presents the adjusted trip generation resulting from the internal capture trip reductions. As can be seen from Table III, the proposed Project is estimated to generate a maximum of 8,486 daily, 625 AM peak hour and 544 PM peak hour driveway trips (before pass-by trip rate reductions are taken into account). Furthermore, JLB proposes to utilize pass-by rate reductions to reflect net new traffic to study facilities.

***Table I: Project Trip Generation***

| Land Use (ITE Code) | Size | Unit | Daily | | AM (7-9) Peak Hour | | | | | | PM (4-6) Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rate | Total | Trip Rate | In % | Out % | In | Out | Total | Trip Rate | In % | Out % | In | Out | Total |
| Gasoline/Service Station with Convenience Market (945) | 16 | f.p. | 205.36 | 3,286 | 12.47 | 51 | 49 | 102 | 98 | 200 | 13.99 | 51 | 49 | 114 | 110 | 224 |
| Small Office Building (712) | 5.000 | k.s.f. | 16.19 | 81 | 1.92 | 83 | 18 | 8 | 2 | 10 | 2.45 | 32 | 68 | 4 | 8 | 12 |
| Medical-Dental Office Building (720) | 14.500 | k.s.f. | 34.80 | 505 | 2.78 | 78 | 22 | 31 | 9 | 40 | 3.46 | 28 | 72 | 14 | 36 | 50 |
| Shopping Center (820) | 32.000 | k.s.f. | 37.75 | 1,208 | 0.94 | 62 | 38 | 19 | 11 | 30 | 3.81 | 48 | 52 | 59 | 63 | 122 |
| Walk-in Bank (911) | 6.000 | k.s.f. | 100.03 | 600 | 0.00 | 0 | 0 | 0 | 0 | 0 | 12.13 | 44 | 56 | 32 | 41 | 73 |
| Fast-Food Restaurant with Drive-Through Window (934) | 3.000 | k.s.f. | 470.95 | 1,413 | 40.19 | 51 | 49 | 62 | 59 | 121 | 32.67 | 52 | 48 | 51 | 47 | 98 |
| Fast-Food Restaurant without Drive-Through Window (933) | 2.000 | k.s.f. | 346.23 | 692 | 25.10 | 60 | 40 | 30 | 20 | 50 | 28.34 | 50 | 50 | 28 | 29 | 57 |
| Day Care Center (565) | 4.000 | k.s.f. | 47.62 | 190 | 11.00 | 53 | 47 | 23 | 21 | 44 | 11.12 | 47 | 53 | 21 | 23 | 44 |
| Multifamily Housing (Mid-Rise) (221) | 150 | d.u. | 5.44 | 816 | 0.36 | 26 | 74 | 14 | 40 | 54 | 0.44 | 61 | 39 | 40 | 26 | 66 |
| Coffee/Donut Shop with Drive-Through Window (937) | 2.000 | k.s.f. | 820.38 | 1,641 | 88.99 | 51 | 49 | 91 | 87 | 178 | 43.38 | 50 | 50 | 43 | 44 | 87 |
| ***Total Project Driveway Trips*** | | | | **10,432** | | | | **380** | **347** | **727** | | | | **406** | **427** | **833** |

Note: f.p. = Fueling Positions
k.s.f = Thousand Square Feet
d.u. = Dwelling Units

***Table II: Internal Capture Trip Reductions***

| Land Use (ITE Code) | Daily | AM (7-9) Peak Hour | | | PM (4-6) Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | Total | In | Out | Total | In | Out | Total |
| Gasoline/Service Station with Convenience Market (945) | -663 | -11 | -14 | -25 | -45 | -36 | -81 |
| Small Office Building (712) | -16 | -2 | -2 | -4 | -2 | -2 | -4 |
| Medical-Dental Office Building (720) | -102 | -6 | -8 | -14 | -6 | -10 | -16 |
| Shopping Center (820) | -244 | -2 | -2 | -4 | -24 | -20 | -44 |
| Walk-in Bank (911) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fast-Food Restaurant with Drive-Through Window (934) | -285 | -10 | -6 | -16 | -18 | -23 | -41 |
| Fast-Food Restaurant without Drive-Through Window (933) | -140 | -5 | -2 | -7 | -10 | 14 | -24 |
| Day Care Center (565) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Multifamily Housing (Mid-Rise) (221) | -165 | -1 | -9 | -10 | -25 | -17 | -42 |
| Coffee/Donut Shop with Drive-Through Window (937) | -331 | -14 | -8 | -22 | -15 | -22 | -37 |
| ***Internal Capture Trip Reductions*** | **-1,946** | **-51** | **-51** | **-102** | **-145** | **-144** | **-289** |

***Table III: Project Trip Generation Adjusted for Internal Capture Trip Reductions***

| *Land Use (ITE Code)* | *Daily* | *AM (7-9) Peak Hour* | | | *PM (4-6) Peak Hour* | | |
|---|---|---|---|---|---|---|---|
| | *Total* | *In* | *Out* | *Total* | *Total* | *In* | *Out* |
| Gasoline/Service Station with Convenience Market (945) | 2,623 | 91 | 84 | 175 | 69 | 74 | 143 |
| Small Office Building (712) | 65 | 6 | 0 | 6 | 2 | 6 | 8 |
| Medical-Dental Office Building (720) | 403 | 25 | 1 | 26 | 8 | 26 | 34 |
| Shopping Center (820) | 964 | 17 | 9 | 26 | 35 | 43 | 78 |
| Walk-in Bank (911) | 600 | 0 | 0 | 0 | 32 | 41 | 73 |
| Fast-Food Restaurant with Drive-Through Window (934) | 1,128 | 52 | 53 | 105 | 33 | 24 | 57 |
| Fast-Food Restaurant without Drive-Through Window (933) | 552 | 25 | 18 | 43 | 18 | 15 | 33 |
| Day Care Center (565) | 190 | 23 | 21 | 44 | 21 | 23 | 44 |
| Multifamily Housing (Mid-Rise) (221) | 651 | 13 | 31 | 44 | 15 | 9 | 24 |
| Coffee/Donut Shop with Drive-Through Window (937) | 1,310 | 77 | 79 | 156 | 28 | 22 | 50 |
| ***Adjusted Project Driveway Trips*** | **8,486** | **329** | **296** | **625** | **261** | **283** | **544** |

## *Near Term Projects to be Included*

Based on our local knowledge of the study area and consultation with City of Fresno Planning & Development staff, JLB proposes to include near term projects in the vicinity of the proposed Project under the Near Term plus Project scenario. Near term projects proposed to be included are:

| Project Name | General Location |
|---|---|
| 1. TT 5171 (portion of) | SWQ Clovis Avenue and Church Avenue |
| 2. TT 5464 | SWC Temperance Avenue and Hamilton Avenue |
| 3. TT 5466 | NEC Minnewawa Avenue and Church Avenue |
| 4. TT 5498 | NEC Peach Avenue and Church Avenue |
| 5. TT 5531 | SWC Temperance Avenue and California Avenue |
| 6. TT 5626 | SEC Fowler Avenue and Hamilton Avenue |
| 7. TT 5638 | NWQ Armstrong Avenue and Church Avenue |
| 8. TT 5913 | NEC Armstrong Avenue and California Avenue |
| 9. TT 5953 | NEC Armstrong Avenue and Butler Avenue |
| 10. TT 6095 | NEQ Armstrong Avenue and Church Avenue |
| 11. Sanger Unified School District | NEC Fowler Avenue and Jensen Avenue |
| 12. Fresno Unified School District | SWC Peach Avenue and Church Avenue |
| 13. 4780 S Maple Avenue Rezone | NEC Maple Avenue and American Avenue |
| 14. 2778 S Willow Avenue Rezone (portion of) | NWC Willow Avenue and Annadale Avenue |
| 15. G3 Development (Ulta) (portion of) | NWQ East Avenue and Central Avenue |
| 16. TPM 2012-06 (Amazon) (portion of) | NWQ Orange Avenue and Central Avenue |
| 17. Orange Industrial Park | NEQ Orange Avenue and Central Avenue |

| | |
|---|---|
| 18. North Pointe (portion of) | SWC Orange Avenue and North Avenue |
| 19. Commercial Development | NEC Orange Avenue and North Avenue |
| 20. RP East Industrial | NEQ East Avenue and Central Avenue |

Other Near Term Projects the City, County or Caltrans has knowledge and for which it is anticipated that said project(s) is/are projected to be whole or partially built by the Near Term Project Year 2025, City, County and Caltrans, as appropriate, would provide JLB with project details such as a project description, location, proposed land uses with breakdowns and type of residential units and amount of square footages for non-residential uses.

The above Scope of Work is based on our understanding of this Project and our experience with similar TIAs. In the absence of comments by November 27, 2019, it will be assumed that the above Scope of Work is acceptable to the agency(ies) that have not submitted any comments. If you have any questions or require additional information, please feel welcome to contact me by phone at 559.664.3159 or by email at jgarcia@JLBtraffic.com.

Sincerely,

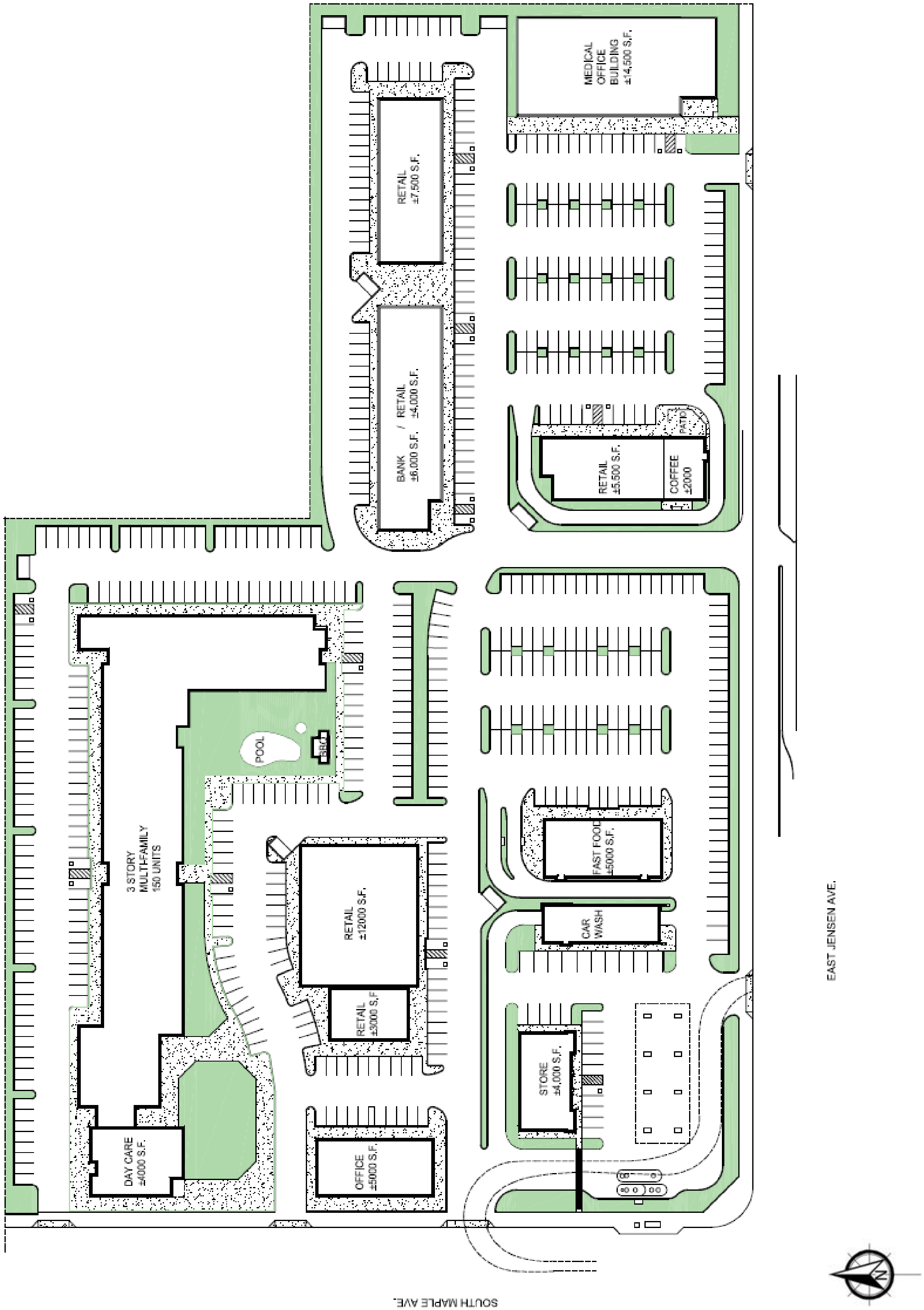
Jesus Garcia

Jesus Garcia
Engineering Aide

cc: Harmanjit Dhaliwal, City of Fresno
Brian Spaunhurst, County of Fresno
David Padilla, Caltrans
Jose Benavides, JLB Traffic Engineering, Inc.

## Exhibit A – Project Aerial

## Exhibit B - Project Site Plan



## Matt Arndt

**From:** Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
**Sent:** Wednesday, December 18, 2019 3:47 PM
**To:** Jose Benavides; Matt Arndt
**Cc:** Jill Gormley
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Good Afternoon Jose/Matt,

Thank you for providing the Select Zone pdf's. Based on this information we will not add any additional intersections. However, we will need Vehicle Miles Traveled (VMTs) to be analyzed. As you are aware, CEQA requirements for traffic impacts will be changed from Level of Service (LOS) to VMT effective July 1, 2020. Please include a qualitative VMT analysis in the study. Also note, if this project is not approved prior to July 1, 2020 additional analysis to address VMT impacts may be required.

Thanks,

**Harmanjit Dhaliwal, PE**

City of FRESNO
**Public Works Department**
***Traffic Operations & Planning Division***
2600 Fresno Street, Room 4064
Fresno, CA 93721
Ph: (559) 621-8694
Harmanjit.Dhaliwal@fresno.gov

---

**From:** Jose Benavides [mailto:jbenavides@jlbtraffic.com]
**Sent:** Wednesday, December 18, 2019 9:30 AM
**To:** Matt Arndt; Harmanjit Dhaliwal
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Good morning Harman,

Have you had a chance to review the Project Select Zone and if so when can we anticipate comments from the City on the scope of work for this project?

Sincerely,

Jose Luis Benavides, P.E., T.E.
President
JLB TRAFFIC ENGINEERING, INC.
*Traffic Engineering, Transportation Planning and Parking Solutions*
**Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)**

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Main: (559) 570-8991
Cell: (559) 694-6000
Fax: (559) 317-6854
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**From:** Matt Arndt <marndt@jlbtraffic.com>
**Sent:** Thursday, December 12, 2019 9:50 AM
**To:** Harmanjit Dhaliwal <Harmanjit.Dhaliwal@fresno.gov>
**Cc:** Jose Benavides <jbenavides@jlbtraffic.com>
**Subject:** Mixed-Use Development TIA: Draft Scope of Work

Hello Harman,

Attached are models of the project trips for the Mixed-Use Development on the northeast corner of Maple Avenue and Jensen Avenue.
Is there any chance I can get an ETA for comments from the City on this project? Thank you.

Sincerely,

Matthew Arndt

JLB TRAFFIC ENGINEERING

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## Matt Arndt

**From:** Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
**Sent:** Tuesday, January 7, 2020 11:17 AM
**To:** Jose Benavides
**Cc:** Jesus Garcia; Nakagawa, Wendy; Matt Arndt
**Subject:** Re: Mixed-Use Development TIA: Draft Scope of Work

Good Morning Jose,

After our conversation this morning I am in agreement with your reasoning. LOS and signal warrants would likely not be met thus making the study of these intersections unreasonable. Please move forward with removing Jensen/Dearing, Vine/Maple, and Date/Maple.

Respectfully,

**Brian Spaunhurst** | **Senior Planner**
**Department of Public Works and Planning | Design Division**
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

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**From:** Jose Benavides <jbenavides@jlbtraffic.com>
**Sent:** Tuesday, January 7, 2020 11:08 AM
**To:** Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
**Cc:** Jesus Garcia <jgarcia@jlbtraffic.com>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>; Matt Arndt <marndt@jlbtraffic.com>
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Good morning Brian,

Based on our conversation regarding the intersections to analyze for this project the County of Fresno will no longer be requesting that we include in the analysis the intersection of Jensen at Dearing Avenue for the reason that it is limited to right-in and right-out access.

Furthermore, the county will be taking another evaluation to determine if the intersections of Maple at Vine and Maple at Date need to be analyzed after all. As we discussed, the project is not anticipated to add any traffic to Vine Avenue or Date Avenue, the speed limit for Maple Avenue is 40, the volumes on Vine and Date are low and as a result these intersections are not anticipated to satisfy any of the signal warrants or exceed the LOS D. Based on this information and the County's additional review, let us know if we can also omit these two intersections from the study.

The study will be analyzing the following intersections which are within the County's jurisdiction:

1. Maple Avenue / Jensen Avenue
2. Chestnut Avenue / Jensen Avenue
3. Maple Avenue / Annadale Avenue
4. Maple Avenue / North Avenue

Sincerely,

Jose Luis Benavides, P.E., T.E.
President

*Traffic Engineering, Transportation Planning and Parking Solutions*
**Certified Disadvantaged Business Enterprise (DBE) and Small Business Enterprise (SBE)**

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Direct: (559) 317-6249
Main: (559) 570-8991
Cell: (559) 694-6000
Fax: (559) 317-6854
www.JLBtraffic.com

---

**From:** Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
**Sent:** Monday, December 23, 2019 9:38 AM
**To:** Jose Benavides <jbenavides@jlbtraffic.com>; Matt Arndt <marndt@jlbtraffic.com>
**Cc:** Jesus Garcia <jgarcia@jlbtraffic.com>; Nakagawa, Wendy <WNakagawa@fresnocountyca.gov>
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Good Morning Jose,

Will the study analyze the intersections of Date/Maple, Vine/Maple and Dearing/Jensen?

I agree that project traffic won't likely use these streets, but what I am concerned with is the possibility of existing traffic on these minor streets having an impacted Level of Service due to new project traffic plus existing traffic as they try to access Maple and Jensen. Maple is of a specific concern as traffic from Vine would have to potentially cross four lanes of uncontrolled traffic.

Respectfully,

**Brian Spaunhurst** | **Senior Planner**
**Department of Public Works and Planning | Design Division**
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

---

**From:** Jose Benavides <jbenavides@jlbtraffic.com>
**Sent:** Friday, December 20, 2019 1:07 PM
**To:** Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>; Matt Arndt <marndt@jlbtraffic.com>
**Cc:** Jesus Garcia <jgarcia@jlbtraffic.com>
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Hi Brian,

We anticipate that no **new** traffic will be added from the minor streets that the County has mentioned.

Traffic to and from the project at Date and Maple will be limited to Maple Avenue northbound and southbound.
Traffic to and from the project at Dearing and Jensen will be limited to Jensen Avenue eastbound and westbound.
Traffic to and from the project at Vine and Maple will be limited to Maple Avenue northbound and southbound.

Sincerely,

Jose Luis Benavides, P.E., T.E.
President

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---

**From:** Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
**Sent:** Friday, December 20, 2019 12:47 PM
**To:** Jose Benavides <jbenavides@jlbtraffic.com>; Matt Arndt <marndt@jlbtraffic.com>
**Cc:** Jesus Garcia <jgarcia@jlbtraffic.com>
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Thanks Matt,

If I am unable to determine which, if any, of these minor streets might have an impact created by this project then to be safe we need to include them all.

Respectfully,

**Brian Spaunhurst** | **Senior Planner**
**Department of Public Works and Planning | Design Division**
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

---

**From:** Jose Benavides <jbenavides@jlbtraffic.com>
**Sent:** Friday, December 20, 2019 11:49 AM
**To:** Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>; Matt Arndt <marndt@jlbtraffic.com>

**Cc:** Jesus Garcia <jgarcia@jlbtraffic.com>
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Hi Brian,

Minor streets are not part of the model network so those would not show up at all. All majors streets are included in the model and they are also named.

Let me know if there are any other questions.

Sincerely,

Jose Luis Benavides, P.E., T.E.
President

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---

**From:** Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
**Sent:** Friday, December 20, 2019 11:41 AM
**To:** Matt Arndt <marndt@jlbtraffic.com>
**Cc:** Jose Benavides <jbenavides@jlbtraffic.com>; Jesus Garcia <jgarcia@jlbtraffic.com>
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Good Morning Matt,

I'm trying to make heads from tails here, if you have a quick moment could you please place some street labels on these so that I can get a better sense of what streets I am looking at?

Respectfully,

**Brian Spaunhurst** | **Senior Planner**
**Department of Public Works and Planning | Design Division**
2220 Tulare St. 7th Floor Fresno, CA 93721
Main Office: (559) 600-4109 Direct: (559) 600-4532
Your input matters! Customer Service Survey

**From:** Matt Arndt <marndt@jlbtraffic.com>
**Sent:** Thursday, December 12, 2019 10:02 AM
**To:** Spaunhurst, Brian <bspaunhurst@fresnocountyca.gov>
**Cc:** Jose Benavides <jbenavides@jlbtraffic.com>; Jesus Garcia <jgarcia@jlbtraffic.com>
**Subject:** Mixed-Use Development TIA: Draft Scope of Work

**CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK**

Hello Brian,

Attached are models of the project trips for the Mixed-Use Development on the northeast corner of Maple Avenue and Jensen Avenue. Please let me know if this changes anything and if the County still finds they want to add the intersections of Maple/Vine, Maple/Date, and Jensen/Dearing.
Thank you.

Sincerely,

Matthew Arndt

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**Jose Benavides**

---

**From:** Padilla, Dave@DOT <dave.padilla@dot.ca.gov>
**Sent:** Wednesday, January 8, 2020 10:05 AM
**To:** Jesus Garcia; Jill.Gormley@fresno.gov
**Cc:** Harmanjit.Dhaliwal@fresno.gov; bspaunhurst@fresnocountyca.gov; Jose Benavides
**Subject:** RE: Mixed-Use Development TIA: Draft Scope of Work

Hello Jesus,

I am not sure if I provided comments to this SOW, however, we have no concerns with it.

Thank you,

DAVID PADILLA
Associate Transportation Planner
Caltrans
Office of Planning & Local Assistance
1352 W. Olive Avenue
Fresno, CA 93778-2616
Office: (559) 444-2493, Fax: (559) 445-5875

---

**From:** Jesus Garcia <jgarcia@jlbtraffic.com>
**Sent:** Wednesday, November 06, 2019 12:14 PM
**To:** Jill.Gormley@fresno.gov
**Cc:** Harmanjit.Dhaliwal@fresno.gov; bspaunhurst@fresnocountyca.gov; Padilla, Dave@DOT <dave.padilla@dot.ca.gov>; Jose Benavides <jbenavides@jlbtraffic.com>
**Subject:** Mixed-Use Development TIA: Draft Scope of Work

Good afternoon Mrs. Gormley,

Attached you will find a Draft Scope of Work for the preparation of a Traffic Impact Analysis for a Project in the City of Fresno.

We kindly ask that you take a moment to review and comment on the proposed Scope of Work. In the absence of comments by November 27, 2019, it will be assumed that the proposed Scope of Work is acceptable to the agency(ies) that have not submitted any comments.

If you have any questions or require additional information, please contact me by phone at 559.664.3159 or by e-mail at jgarcia@JLBtraffic.com. We appreciate your time and attention to this matter.

Sincerely,

Jesus Garcia
Engineering Aide
JLB TRAFFIC ENGINEERING, INC.

*Traffic Engineering, Transportation Planning and Parking Solutions*
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# Appendix B: Traffic Counts

# JLB Traffic Engineering, Inc.

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File Name : Chestnut and Florence
Site Code : 00000000
Start Date : 11/20/2019
Page No : 1

**Groups Printed- Unshifted - Bank 2**

| | CHESTNUT Southbound | | | | FLORENCE Westbound | | | | CHESTNUT Northbound | | | | FLORENCE Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Int. Total |
| 07:00 AM | 0 | 65 | 5 | 0 | 6 | 0 | 2 | 0 | 10 | 85 | 3 | 0 | 2 | 1 | 1 | 1 | 181 |
| 07:15 AM | 0 | 86 | 10 | 0 | 11 | 0 | 5 | 0 | 25 | 99 | 8 | 0 | 5 | 0 | 4 | 0 | 253 |
| 07:30 AM | 1 | 128 | 31 | 0 | 14 | 2 | 5 | 0 | 24 | 157 | 5 | 0 | 14 | 0 | 4 | 0 | 385 |
| 07:45 AM | 1 | 160 | 32 | 0 | 8 | 1 | 3 | 0 | 42 | 162 | 8 | 0 | 11 | 1 | 9 | 0 | 438 |
| Total | 2 | 439 | 78 | 0 | 39 | 3 | 15 | 0 | 101 | 503 | 24 | 0 | 32 | 2 | 18 | 1 | 1257 |
| | | | | | | | | | | | | | | | | | |
| 08:00 AM | 2 | 104 | 11 | 0 | 11 | 0 | 3 | 0 | 7 | 115 | 4 | 0 | 10 | 2 | 5 | 0 | 274 |
| 08:15 AM | 3 | 82 | 6 | 0 | 7 | 1 | 6 | 0 | 8 | 108 | 1 | 0 | 4 | 0 | 2 | 0 | 228 |
| 08:30 AM | 1 | 95 | 6 | 1 | 3 | 0 | 3 | 0 | 2 | 104 | 1 | 1 | 5 | 0 | 3 | 0 | 225 |
| 08:45 AM | 1 | 72 | 4 | 0 | 4 | 0 | 3 | 0 | 4 | 125 | 1 | 0 | 3 | 0 | 1 | 0 | 218 |
| Total | 7 | 353 | 27 | 1 | 25 | 1 | 15 | 0 | 21 | 452 | 7 | 1 | 22 | 2 | 11 | 0 | 945 |
| | | | | | | | | | | | | | | | | | |
| ****** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 04:00 PM | 1 | 126 | 9 | 0 | 5 | 1 | 3 | 0 | 16 | 190 | 10 | 0 | 4 | 1 | 4 | 0 | 370 |
| 04:15 PM | 2 | 128 | 13 | 0 | 5 | 2 | 4 | 0 | 6 | 182 | 7 | 0 | 11 | 1 | 4 | 0 | 365 |
| 04:30 PM | 0 | 146 | 6 | 0 | 5 | 1 | 0 | 1 | 16 | 170 | 8 | 5 | 5 | 2 | 6 | 0 | 371 |
| 04:45 PM | 4 | 158 | 10 | 0 | 5 | 0 | 2 | 0 | 6 | 184 | 5 | 4 | 7 | 1 | 6 | 3 | 395 |
| Total | 7 | 558 | 38 | 0 | 20 | 4 | 9 | 1 | 44 | 726 | 30 | 9 | 27 | 5 | 20 | 3 | 1501 |
| | | | | | | | | | | | | | | | | | |
| 05:00 PM | 3 | 156 | 15 | 0 | 9 | 1 | 2 | 0 | 15 | 208 | 11 | 0 | 10 | 1 | 5 | 0 | 436 |
| 05:15 PM | 4 | 170 | 10 | 0 | 7 | 1 | 4 | 0 | 15 | 176 | 8 | 0 | 5 | 0 | 6 | 0 | 406 |
| 05:30 PM | 5 | 156 | 19 | 0 | 2 | 1 | 1 | 0 | 11 | 149 | 8 | 0 | 7 | 2 | 7 | 3 | 371 |
| 05:45 PM | 6 | 127 | 17 | 0 | 8 | 0 | 3 | 0 | 9 | 148 | 8 | 0 | 9 | 0 | 5 | 0 | 340 |
| Total | 18 | 609 | 61 | 0 | 26 | 3 | 10 | 0 | 50 | 681 | 35 | 0 | 31 | 3 | 23 | 3 | 1553 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 34 | 1959 | 204 | 1 | 110 | 11 | 49 | 1 | 216 | 2362 | 96 | 10 | 112 | 12 | 72 | 7 | 5256 |
| Apprch % | 1.5 | 89.1 | 9.3 | 0 | 64.3 | 6.4 | 28.7 | 0.6 | 8 | 88 | 3.6 | 0.4 | 55.2 | 5.9 | 35.5 | 3.4 | |
| Total % | 0.6 | 37.3 | 3.9 | 0 | 2.1 | 0.2 | 0.9 | 0 | 4.1 | 44.9 | 1.8 | 0.2 | 2.1 | 0.2 | 1.4 | 0.1 | |
| Unshifted | 33 | 1959 | 204 | 1 | 110 | 11 | 49 | 1 | 96 | 2362 | 96 | 10 | 112 | 12 | 72 | 7 | 5135 |
| % Unshifted | 97.1 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 44.4 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 97.7 |
| Bank 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| % Bank 2 | 2.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.3 |

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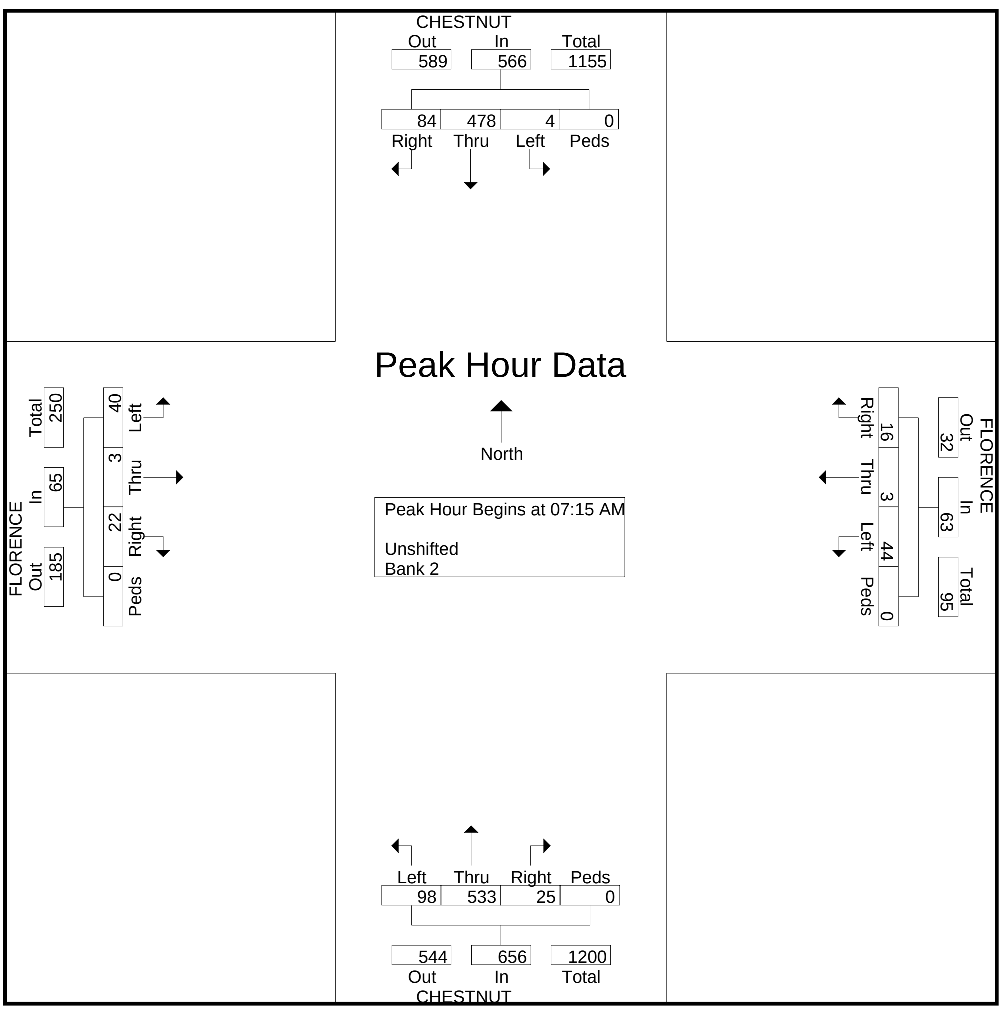
File Name : Chestnut and Florence
Site Code : 00000000
Start Date : 11/20/2019
Page No : 2

| | CHESTNUT Southbound | | | | | FLORENCE Westbound | | | | | CHESTNUT Northbound | | | | | FLORENCE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 86 | 10 | 0 | 96 | 11 | 0 | **5** | 0 | 16 | 25 | 99 | **8** | 0 | 132 | 5 | 0 | 4 | 0 | 9 | 253 |
| 07:30 AM | 1 | 128 | 31 | 0 | 160 | **14** | **2** | 5 | 0 | **21** | 24 | 157 | 5 | 0 | 186 | **14** | 0 | 4 | 0 | 18 | 385 |
| 07:45 AM | 1 | **160** | **32** | 0 | **193** | 8 | 1 | 3 | 0 | 12 | **42** | **162** | 8 | 0 | **212** | 11 | 1 | **9** | 0 | **21** | **438** |
| 08:00 AM | **2** | 104 | 11 | 0 | 117 | 11 | 0 | 3 | 0 | 14 | 7 | 115 | 4 | 0 | 126 | 10 | **2** | 5 | 0 | 17 | 274 |
| Total Volume | 4 | 478 | 84 | 0 | 566 | 44 | 3 | 16 | 0 | 63 | 98 | 533 | 25 | 0 | 656 | 40 | 3 | 22 | 0 | 65 | 1350 |
| % App. Total | 0.7 | 84.5 | 14.8 | 0 | | 69.8 | 4.8 | 25.4 | 0 | | 14.9 | 81.2 | 3.8 | 0 | | 61.5 | 4.6 | 33.8 | 0 | | |
| PHF | .500 | .747 | .656 | .000 | .733 | .786 | .375 | .800 | .000 | .750 | .583 | .823 | .781 | .000 | .774 | .714 | .375 | .611 | .000 | .774 | .771 |



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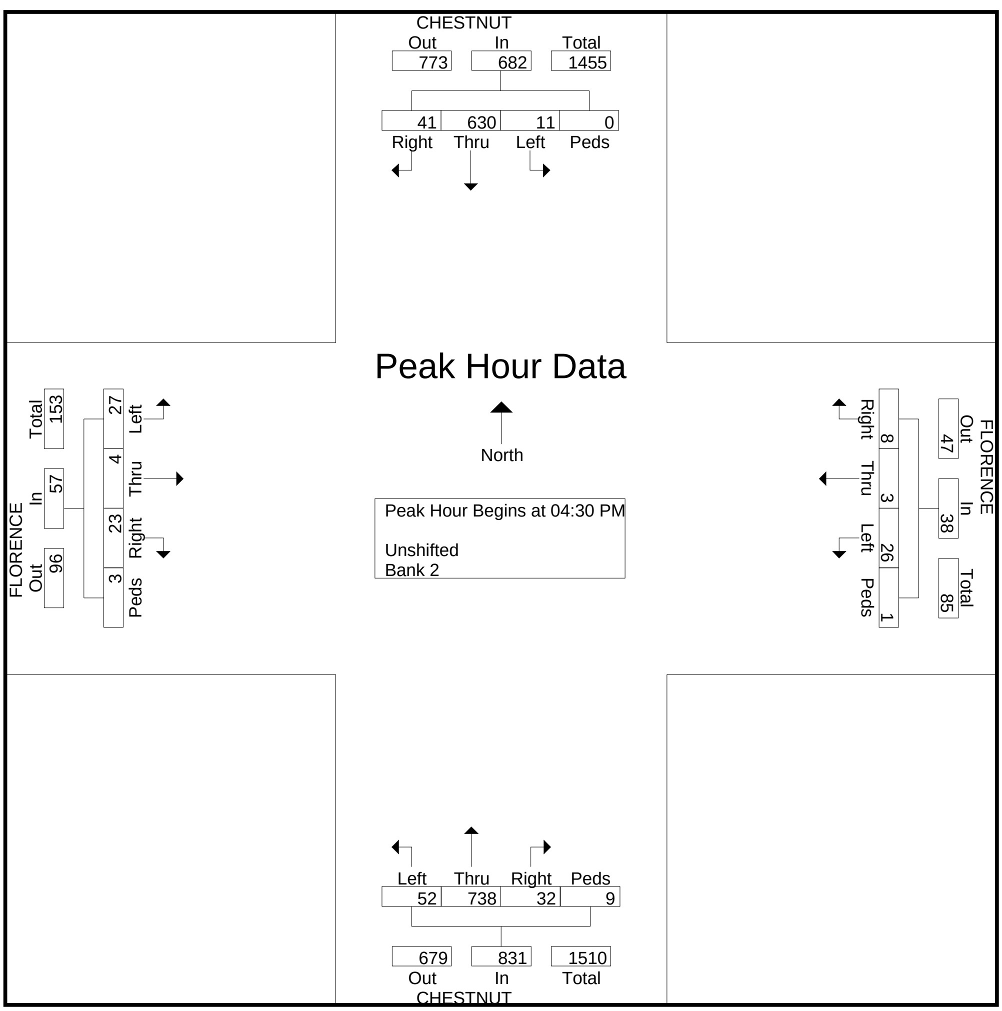
File Name : Chestnut and Florence
Site Code : 00000000
Start Date : 11/20/2019
Page No : 3

| | CHESTNUT Southbound | | | | | FLORENCE Westbound | | | | | CHESTNUT Northbound | | | | | FLORENCE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 0 | 146 | 6 | 0 | 152 | 5 | **1** | 0 | **1** | 7 | **16** | 170 | 8 | **5** | 199 | 5 | **2** | **6** | 0 | 13 | 371 |
| 04:45 PM | **4** | 158 | 10 | 0 | 172 | 5 | 0 | 2 | 0 | 7 | 6 | 184 | 5 | 4 | 199 | 7 | 1 | 6 | **3** | **17** | 395 |
| 05:00 PM | 3 | 156 | **15** | 0 | 174 | **9** | 1 | 2 | 0 | **12** | 15 | **208** | **11** | 0 | **234** | **10** | 1 | 5 | 0 | 16 | **436** |
| 05:15 PM | 4 | **170** | 10 | 0 | **184** | 7 | 1 | **4** | 0 | 12 | 15 | 176 | 8 | 0 | 199 | 5 | 0 | 6 | 0 | 11 | 406 |
| Total Volume | 11 | 630 | 41 | 0 | 682 | 26 | 3 | 8 | 1 | 38 | 52 | 738 | 32 | 9 | 831 | 27 | 4 | 23 | 3 | 57 | 1608 |
| % App. Total | 1.6 | 92.4 | 6 | 0 | | 68.4 | 7.9 | 21.1 | 2.6 | | 6.3 | 88.8 | 3.9 | 1.1 | | 47.4 | 7 | 40.4 | 5.3 | | |
| PHF | .688 | .926 | .683 | .000 | .927 | .722 | .750 | .500 | .250 | .792 | .813 | .887 | .727 | .450 | .888 | .675 | .500 | .958 | .250 | .838 | .922 |



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File Name : 01 Chestnut and Florence
Site Code : 00000000
Start Date : 11/20/2019
Page No : 1

**Groups Printed- Bank 2 - U-Turns**

| | CHESTNUT Southbound | | | | FLORENCE Westbound | | | | CHESTNUT Northbound | | | | FLORENCE Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | U-Turns | Thru | Right | Peds | Left | Thru | Right | Peds | U-Turns | Thru | Right | Peds | Left | Thru | Right | Peds | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| | | | | | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 08:15 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| | | | | | | | | | | | | | | | | | |
| ****** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| | | | | | | | | | | | | | | | | | |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| Apprch % | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total % | 0.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

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(559) 570-8991

*Traffic Engineering, Transportation Planning & Parking Solutions*

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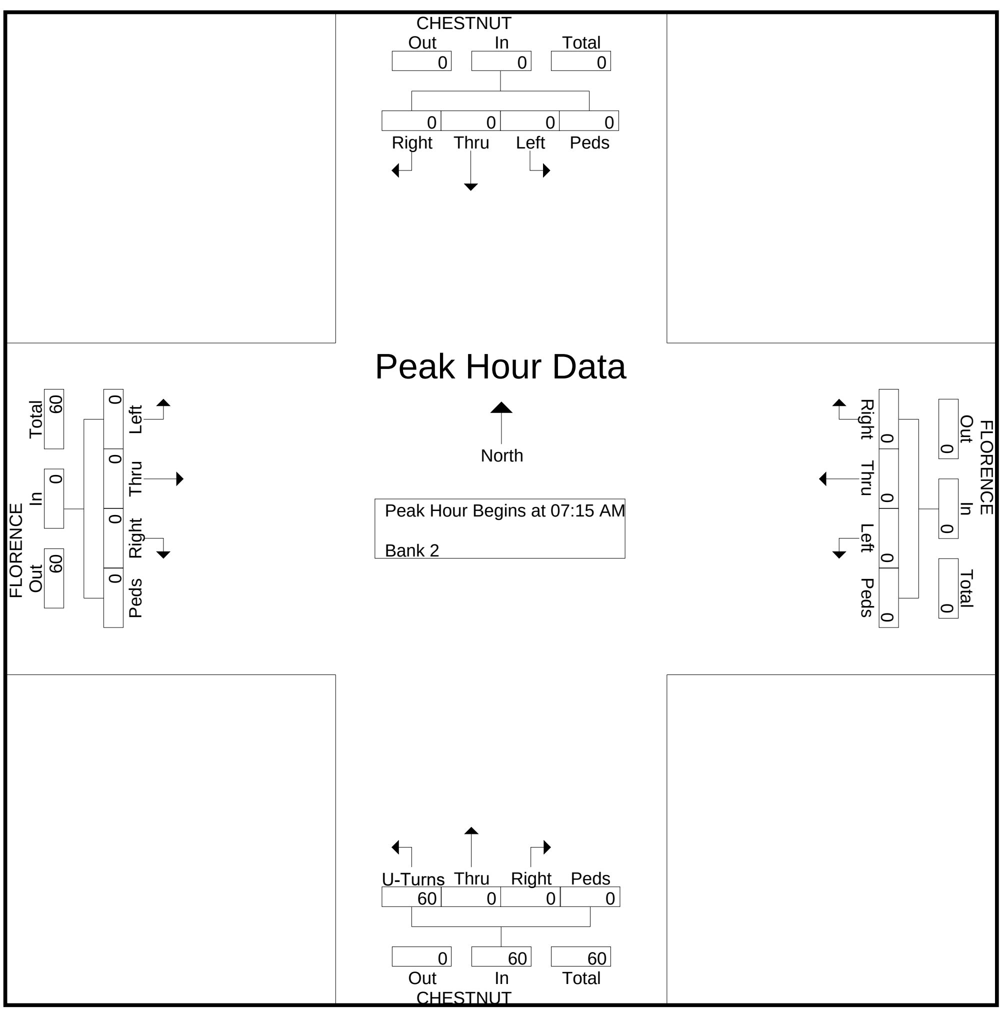
File Name : 01 Chestnut and Florence
Site Code : 00000000
Start Date : 11/20/2019


| | **CHESTNUT Southbound** | | | | | **FLORENCE Westbound** | | | | | **CHESTNUT Northbound** | | | | | **FLORENCE Eastbound** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | U-Turns | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 14 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 16 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **25** | 0 | 0 | 0 | **25** | 0 | 0 | 0 | 0 | 0 | **25** |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 60 |
| % App. Total | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .600 | .000 | .000 | .000 | .600 | .000 | .000 | .000 | .000 | .000 | .600 |



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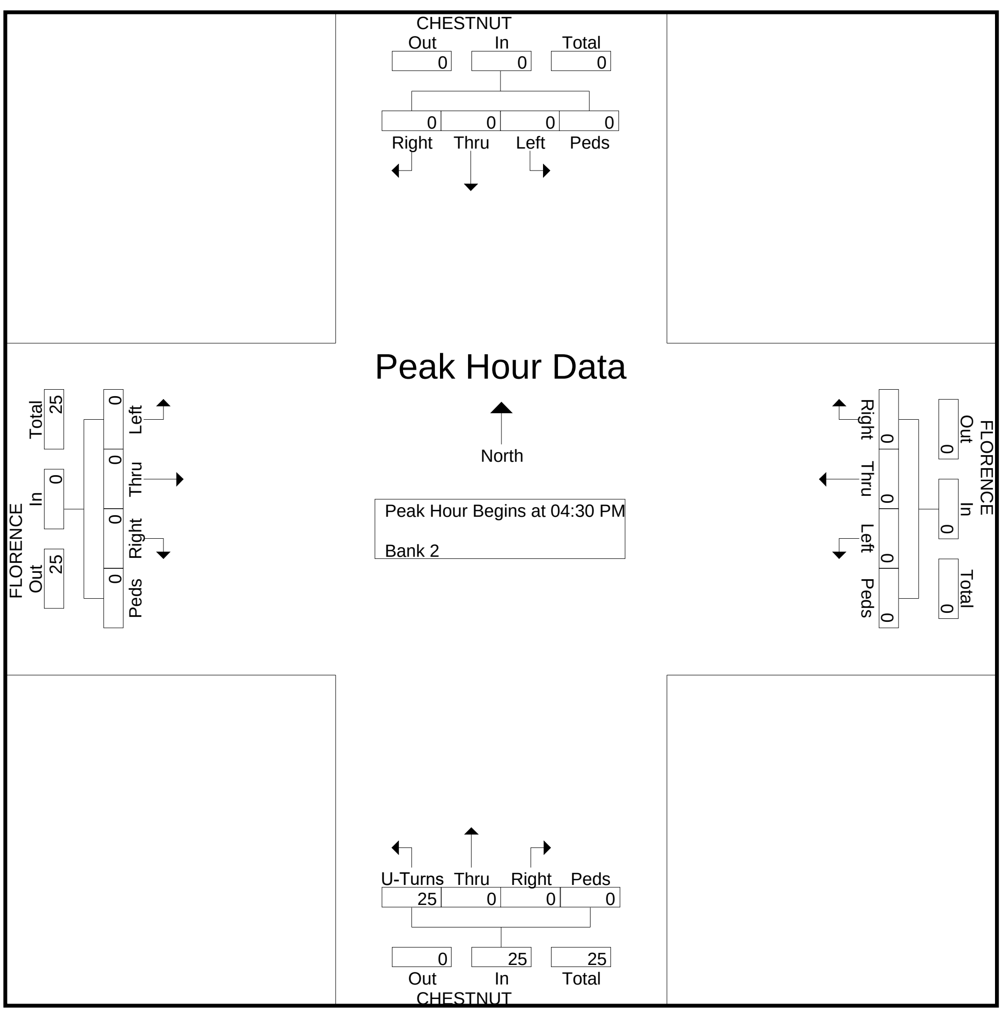
www.JLBtraffic.com


File Name : 01 Chestnut and Florence
Site Code : 00000000
Start Date : 11/20/2019


| | CHESTNUT Southbound | | | | | FLORENCE Westbound | | | | | CHESTNUT Northbound | | | | | FLORENCE Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | U-Turns | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **10** | 0 | 0 | 0 | **10** | 0 | 0 | 0 | 0 | 0 | **10** |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 25 |
| % App. Total | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .625 | .000 | .000 | .000 | .625 | .000 | .000 | .000 | .000 | .000 | .625 |



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File Name : 02 Maple and Grove
Site Code : 00000000
Start Date : 11/19/2019
Page No : 1

**Groups Printed- Unshifted**

| | MAPLE Southbound | | | GROVE Westbound | | MAPLE Northbound | | | |
|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Peds | Left | Right | Thru | Right | Peds | Int. Total |
| 07:00 AM | 1 | 80 | 0 | 12 | 4 | 55 | 2 | 0 | 154 |
| 07:15 AM | 5 | 78 | 0 | 12 | 5 | 75 | 4 | 0 | 179 |
| 07:30 AM | 7 | 106 | 0 | 19 | 20 | 78 | 8 | 0 | 238 |
| 07:45 AM | 4 | 104 | 0 | 14 | 14 | 84 | 3 | 0 | 223 |
| Total | 17 | 368 | 0 | 57 | 43 | 292 | 17 | 0 | 794 |
| 08:00 AM | 3 | 72 | 0 | 11 | 8 | 52 | 3 | 0 | 149 |
| 08:15 AM | 2 | 58 | 0 | 7 | 4 | 43 | 1 | 0 | 115 |
| 08:30 AM | 3 | 58 | 0 | 10 | 6 | 34 | 1 | 0 | 112 |
| 08:45 AM | 4 | 43 | 1 | 10 | 5 | 33 | 1 | 0 | 97 |
| Total | 12 | 231 | 1 | 38 | 23 | 162 | 6 | 0 | 473 |
| ****** | | | | | | | | | |
| 04:00 PM | 8 | 65 | 0 | 1 | 6 | 119 | 7 | 0 | 206 |
| 04:15 PM | 7 | 65 | 0 | 3 | 11 | 107 | 16 | 0 | 209 |
| 04:30 PM | 12 | 68 | 0 | 3 | 12 | 117 | 13 | 0 | 225 |
| 04:45 PM | 13 | 59 | 0 | 6 | 14 | 100 | 16 | 0 | 208 |
| Total | 40 | 257 | 0 | 13 | 43 | 443 | 52 | 0 | 848 |
| 05:00 PM | 8 | 71 | 0 | 11 | 15 | 116 | 10 | 0 | 231 |
| 05:15 PM | 11 | 60 | 0 | 7 | 13 | 79 | 11 | 1 | 182 |
| 05:30 PM | 6 | 67 | 0 | 10 | 10 | 86 | 11 | 0 | 190 |
| 05:45 PM | 13 | 54 | 0 | 0 | 8 | 70 | 11 | 0 | 156 |
| Total | 38 | 252 | 0 | 28 | 46 | 351 | 43 | 1 | 759 |
| ****** | | | | | | | | | |
| Grand Total | 107 | 1108 | 1 | 136 | 155 | 1248 | 118 | 1 | 2874 |
| Apprch % | 8.8 | 91.1 | 0.1 | 46.7 | 53.3 | 91.3 | 8.6 | 0.1 | |
| Total % | 3.7 | 38.6 | 0 | 4.7 | 5.4 | 43.4 | 4.1 | 0 | |

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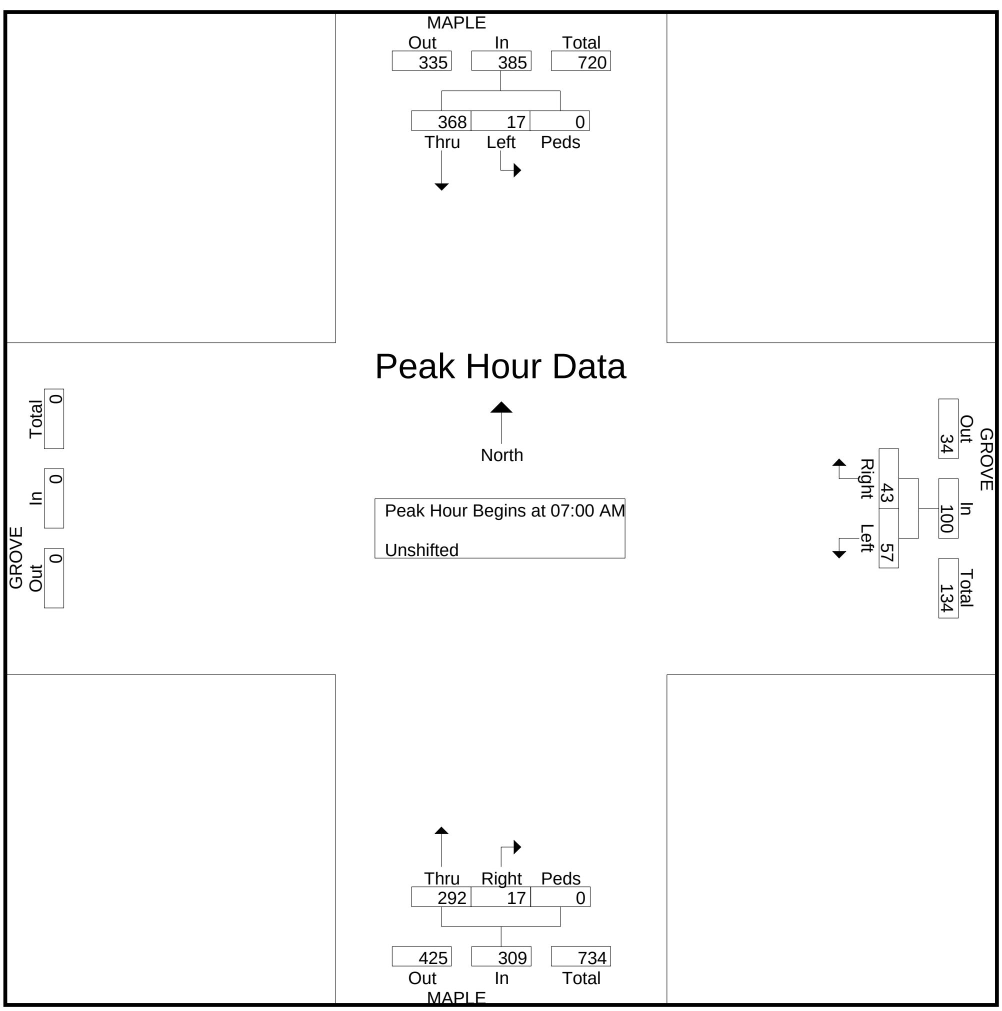
File Name : 02 Maple and Grove
Site Code : 00000000
Start Date : 11/19/2019


| | MAPLE Southbound | | | | GROVE Westbound | | | MAPLE Northbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Peds | App. Total | Left | Right | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | |
| 07:00 AM | 1 | 80 | 0 | 81 | 12 | 4 | 16 | 55 | 2 | 0 | 57 | 154 |
| 07:15 AM | 5 | 78 | 0 | 83 | 12 | 5 | 17 | 75 | 4 | 0 | 79 | 179 |
| 07:30 AM | **7** | **106** | 0 | **113** | **19** | **20** | **39** | 78 | **8** | 0 | 86 | **238** |
| 07:45 AM | 4 | 104 | 0 | 108 | 14 | 14 | 28 | **84** | 3 | 0 | **87** | 223 |
| Total Volume | 17 | 368 | 0 | 385 | 57 | 43 | 100 | 292 | 17 | 0 | 309 | 794 |
| % App. Total | 4.4 | 95.6 | 0 | | 57 | 43 | | 94.5 | 5.5 | 0 | | |
| PHF | .607 | .868 | .000 | .852 | .750 | .538 | .641 | .869 | .531 | .000 | .888 | .834 |



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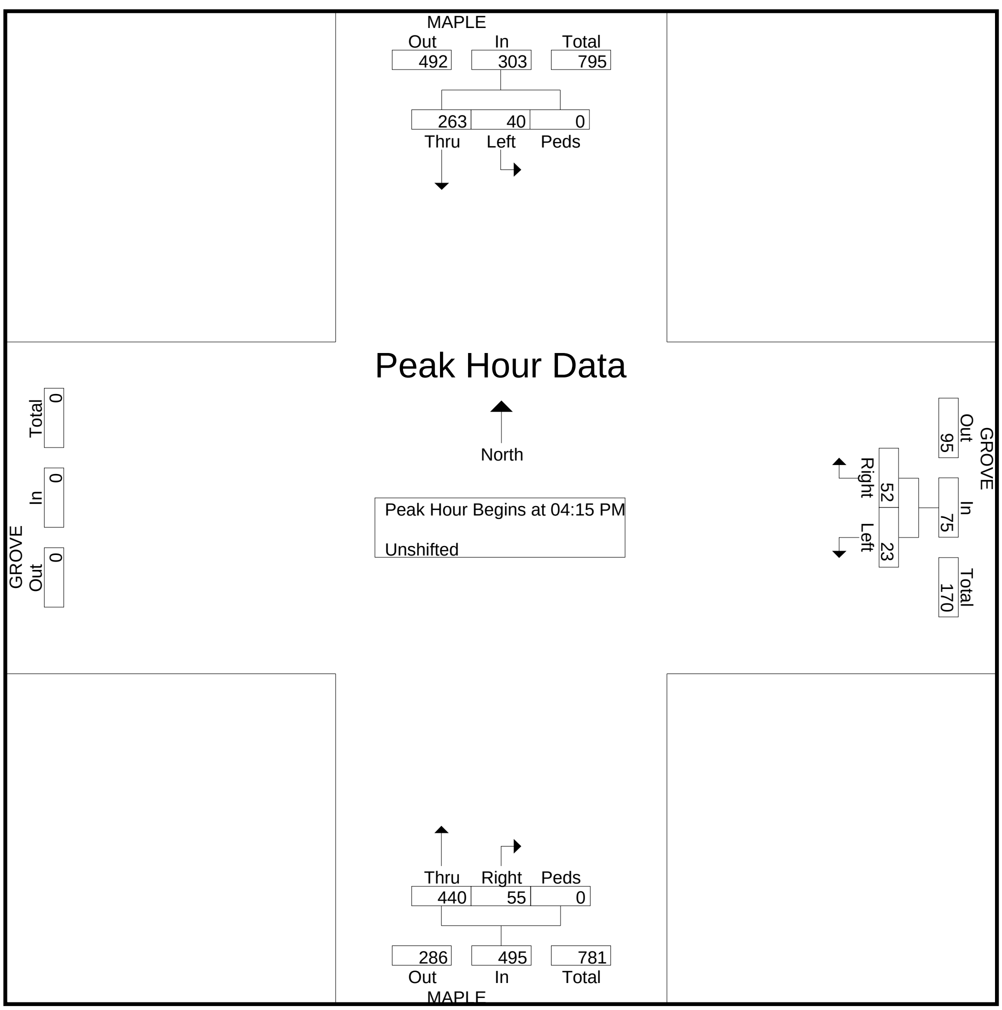
File Name : 02 Maple and Grove
Site Code : 00000000
Start Date : 11/19/2019
Page No : 3

| | MAPLE Southbound | | | | GROVE Westbound | | | MAPLE Northbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Peds | App. Total | Left | Right | App. Total | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 06:00 PM - Peak 1 of 1 | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | | | |
| 04:15 PM | 7 | 65 | 0 | 72 | 3 | 11 | 14 | 107 | **16** | 0 | 123 | 209 |
| 04:30 PM | 12 | 68 | 0 | **80** | 3 | 12 | 15 | **117** | 13 | 0 | **130** | 225 |
| 04:45 PM | **13** | 59 | 0 | 72 | 6 | 14 | 20 | 100 | 16 | 0 | 116 | 208 |
| 05:00 PM | 8 | **71** | 0 | 79 | **11** | **15** | **26** | 116 | 10 | 0 | 126 | **231** |
| Total Volume | 40 | 263 | 0 | 303 | 23 | 52 | 75 | 440 | 55 | 0 | 495 | 873 |
| % App. Total | 13.2 | 86.8 | 0 | | 30.7 | 69.3 | | 88.9 | 11.1 | 0 | | |
| PHF | .769 | .926 | .000 | .947 | .523 | .867 | .721 | .940 | .859 | .000 | .952 | .945 |



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File Name : Jensen and Maple
Site Code : 00000000
Start Date : 10/30/2019
Page No : 1

**Groups Printed- Unshifted - Bank 2**

| | MAPLE Southbound | | | | JENSEN Westbound | | | | MAPLE Northbound | | | | JENSEN Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Int. Total |
| 07:00 AM | 37 | 16 | 43 | 0 | 16 | 161 | 20 | 0 | 13 | 25 | 4 | 0 | 16 | 90 | 28 | 0 | 469 |
| 07:15 AM | 22 | 13 | 59 | 0 | 11 | 211 | 31 | 0 | 23 | 35 | 2 | 0 | 17 | 131 | 26 | 0 | 581 |
| 07:30 AM | 50 | 36 | 78 | 0 | 16 | 260 | 31 | 2 | 20 | 24 | 5 | 1 | 22 | 115 | 28 | 0 | 688 |
| 07:45 AM | 47 | 36 | 53 | 1 | 31 | 206 | 38 | 2 | 39 | 20 | 3 | 0 | 16 | 132 | 41 | 1 | 666 |
| Total | 156 | 101 | 233 | 1 | 74 | 838 | 120 | 4 | 95 | 104 | 14 | 1 | 71 | 468 | 123 | 1 | 2404 |
| | | | | | | | | | | | | | | | | | |
| 08:00 AM | 21 | 12 | 41 | 0 | 14 | 222 | 17 | 1 | 18 | 18 | 5 | 0 | 15 | 102 | 29 | 0 | 515 |
| 08:15 AM | 23 | 21 | 40 | 0 | 11 | 143 | 20 | 0 | 22 | 15 | 4 | 0 | 22 | 81 | 20 | 0 | 422 |
| 08:30 AM | 20 | 19 | 49 | 0 | 9 | 141 | 13 | 0 | 16 | 13 | 2 | 0 | 23 | 95 | 17 | 0 | 417 |
| 08:45 AM | 26 | 8 | 29 | 0 | 11 | 116 | 11 | 1 | 19 | 12 | 4 | 0 | 18 | 106 | 14 | 0 | 375 |
| Total | 90 | 60 | 159 | 0 | 45 | 622 | 61 | 2 | 75 | 58 | 15 | 0 | 78 | 384 | 80 | 0 | 1729 |
| | | | | | | | | | | | | | | | | | |
| ****** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 04:00 PM | 21 | 16 | 37 | 1 | 9 | 115 | 24 | 0 | 32 | 50 | 15 | 0 | 41 | 174 | 21 | 0 | 556 |
| 04:15 PM | 16 | 18 | 45 | 1 | 6 | 120 | 25 | 0 | 38 | 44 | 10 | 0 | 50 | 128 | 17 | 0 | 518 |
| 04:30 PM | 31 | 15 | 36 | 1 | 5 | 134 | 27 | 0 | 42 | 49 | 17 | 0 | 59 | 193 | 15 | 0 | 624 |
| 04:45 PM | 27 | 22 | 31 | 0 | 4 | 121 | 25 | 0 | 19 | 42 | 19 | 0 | 48 | 194 | 25 | 0 | 577 |
| Total | 95 | 71 | 149 | 3 | 24 | 490 | 101 | 0 | 131 | 185 | 61 | 0 | 198 | 689 | 78 | 0 | 2275 |
| | | | | | | | | | | | | | | | | | |
| 05:00 PM | 27 | 9 | 33 | 0 | 6 | 157 | 34 | 0 | 44 | 41 | 17 | 0 | 49 | 220 | 9 | 0 | 646 |
| 05:15 PM | 30 | 10 | 38 | 0 | 5 | 139 | 14 | 0 | 12 | 25 | 13 | 0 | 53 | 213 | 4 | 0 | 556 |
| 05:30 PM | 21 | 8 | 42 | 0 | 1 | 131 | 14 | 0 | 26 | 20 | 5 | 0 | 64 | 165 | 4 | 0 | 501 |
| 05:45 PM | 23 | 11 | 42 | 0 | 6 | 123 | 27 | 0 | 11 | 8 | 2 | 1 | 60 | 139 | 8 | 0 | 461 |
| Total | 101 | 38 | 155 | 0 | 18 | 550 | 89 | 0 | 93 | 94 | 37 | 1 | 226 | 737 | 25 | 0 | 2164 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 442 | 270 | 696 | 4 | 161 | 2500 | 371 | 6 | 394 | 441 | 127 | 2 | 573 | 2278 | 306 | 1 | 8572 |
| Apprch % | 31.3 | 19.1 | 49.3 | 0.3 | 5.3 | 82.3 | 12.2 | 0.2 | 40.9 | 45.7 | 13.2 | 0.2 | 18.1 | 72.1 | 9.7 | 0 | |
| Total % | 5.2 | 3.1 | 8.1 | 0 | 1.9 | 29.2 | 4.3 | 0.1 | 4.6 | 5.1 | 1.5 | 0 | 6.7 | 26.6 | 3.6 | 0 | |
| Unshifted | 442 | 270 | 696 | 4 | 141 | 2500 | 371 | 6 | 394 | 441 | 127 | 2 | 559 | 2278 | 306 | 1 | 8538 |
| % Unshifted | 100 | 100 | 100 | 100 | 87.6 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 97.6 | 100 | 100 | 100 | 99.6 |
| Bank 2 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 34 |
| % Bank 2 | 0 | 0 | 0 | 0 | 12.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.4 | 0 | 0 | 0 | 0.4 |

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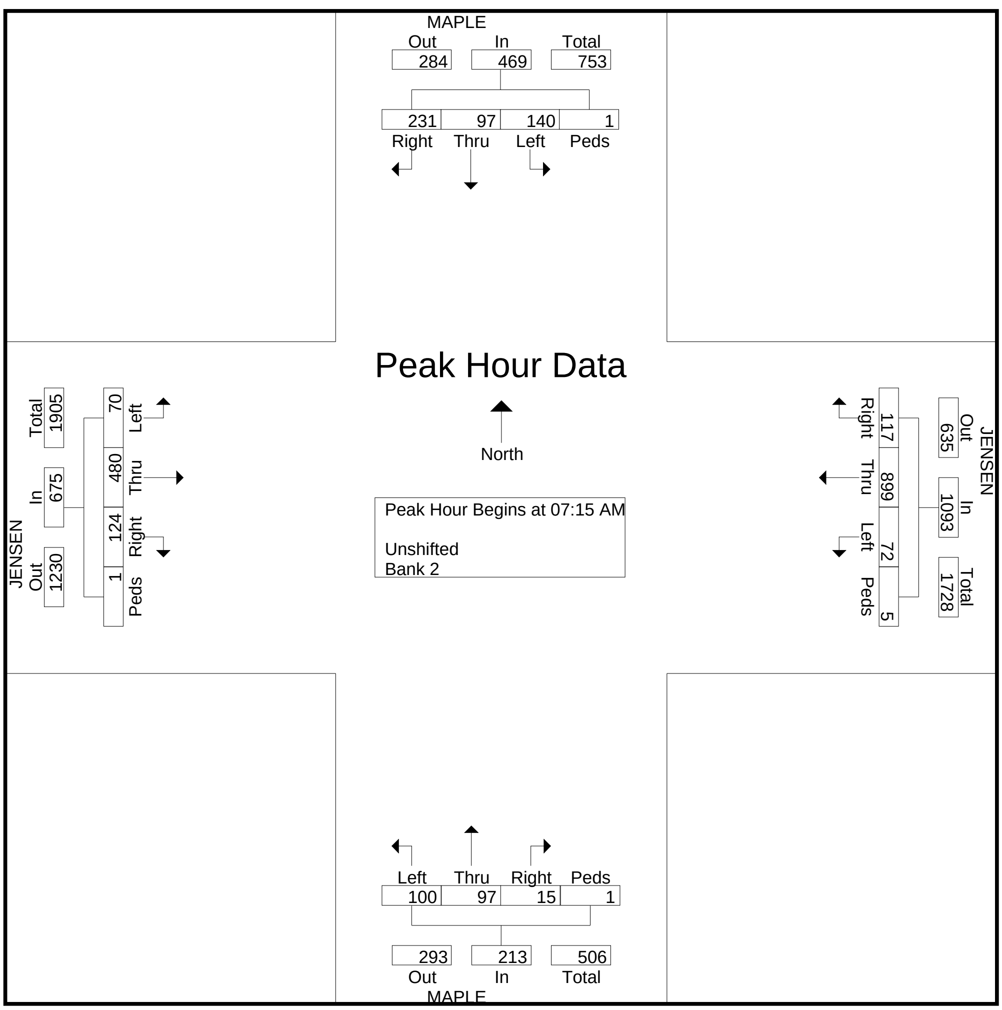
File Name : Jensen and Maple
Site Code : 00000000
Start Date : 10/30/2019


| | MAPLE Southbound | | | | | JENSEN Westbound | | | | | MAPLE Northbound | | | | | JENSEN Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 22 | 13 | 59 | 0 | 94 | 11 | 211 | 31 | 0 | 253 | 23 | **35** | 2 | 0 | 60 | 17 | 131 | 26 | 0 | 174 | 581 |
| 07:30 AM | **50** | **36** | **78** | 0 | **164** | 16 | **260** | 31 | **2** | **309** | 20 | 24 | **5** | **1** | 50 | **22** | 115 | 28 | 0 | 165 | **688** |
| 07:45 AM | 47 | 36 | 53 | **1** | 137 | **31** | 206 | **38** | 2 | 277 | **39** | 20 | 3 | 0 | **62** | 16 | **132** | **41** | **1** | **190** | 666 |
| 08:00 AM | 21 | 12 | 41 | 0 | 74 | 14 | 222 | 17 | 1 | 254 | 18 | 18 | 5 | 0 | 41 | 15 | 102 | 29 | 0 | 146 | 515 |
| Total Volume | 140 | 97 | 231 | 1 | 469 | 72 | 899 | 117 | 5 | 1093 | 100 | 97 | 15 | 1 | 213 | 70 | 480 | 124 | 1 | 675 | 2450 |
| % App. Total | 29.9 | 20.7 | 49.3 | 0.2 | | 6.6 | 82.3 | 10.7 | 0.5 | | 46.9 | 45.5 | 7 | 0.5 | | 10.4 | 71.1 | 18.4 | 0.1 | | |
| PHF | .700 | .674 | .740 | .250 | .715 | .581 | .864 | .770 | .625 | .884 | .641 | .693 | .750 | .250 | .859 | .795 | .909 | .756 | .250 | .888 | .890 |



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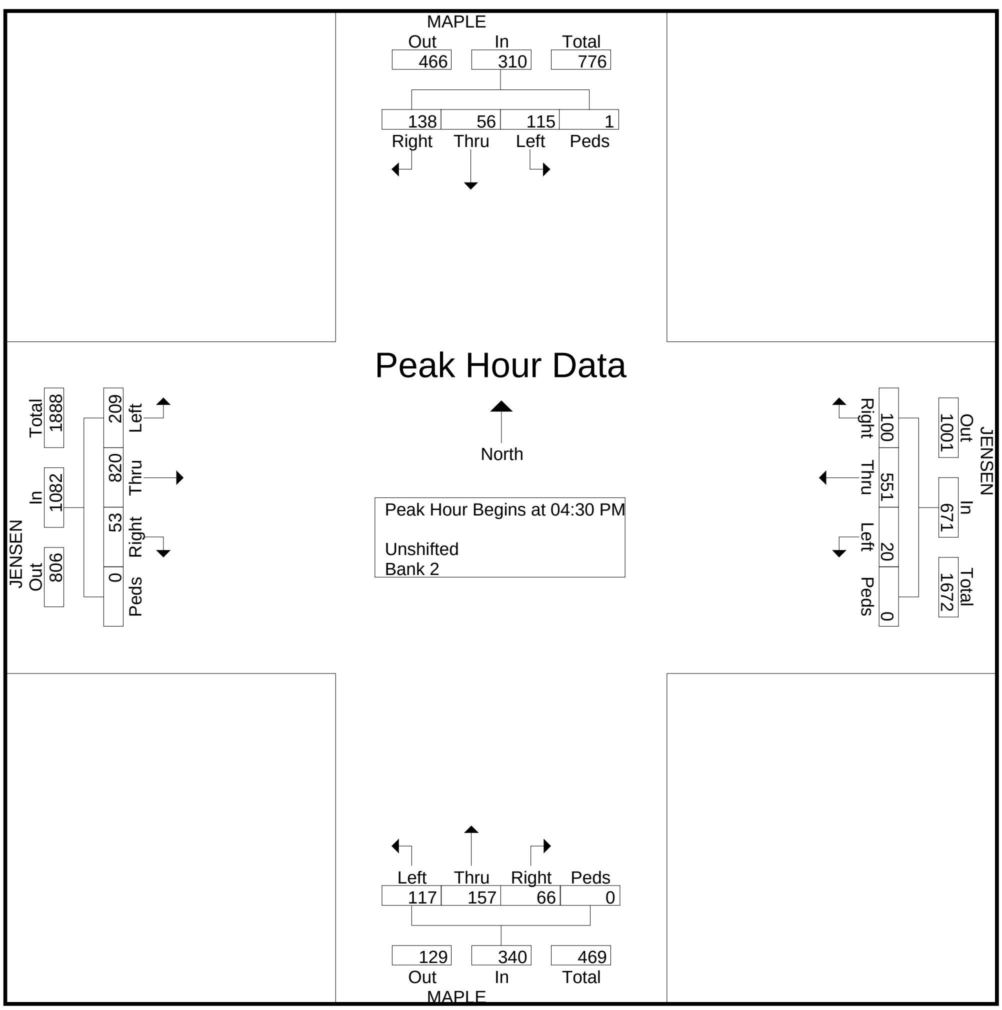
File Name : Jensen and Maple
Site Code : 00000000
Start Date : 10/30/2019


| | MAPLE Southbound | | | | | JENSEN Westbound | | | | | MAPLE Northbound | | | | | JENSEN Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | **31** | 15 | 36 | **1** | **83** | 5 | 134 | 27 | 0 | 166 | 42 | **49** | 17 | 0 | **108** | **59** | 193 | 15 | 0 | 267 | 624 |
| 04:45 PM | 27 | **22** | 31 | 0 | 80 | 4 | 121 | 25 | 0 | 150 | 19 | 42 | **19** | 0 | 80 | 48 | 194 | **25** | 0 | 267 | 577 |
| 05:00 PM | 27 | 9 | 33 | 0 | 69 | **6** | **157** | **34** | 0 | **197** | **44** | 41 | 17 | 0 | 102 | 49 | **220** | 9 | 0 | **278** | **646** |
| 05:15 PM | 30 | 10 | **38** | 0 | 78 | 5 | 139 | 14 | 0 | 158 | 12 | 25 | 13 | 0 | 50 | 53 | 213 | 4 | 0 | 270 | 556 |
| Total Volume | 115 | 56 | 138 | 1 | 310 | 20 | 551 | 100 | 0 | 671 | 117 | 157 | 66 | 0 | 340 | 209 | 820 | 53 | 0 | 1082 | 2403 |
| % App. Total | 37.1 | 18.1 | 44.5 | 0.3 | | 3 | 82.1 | 14.9 | 0 | | 34.4 | 46.2 | 19.4 | 0 | | 19.3 | 75.8 | 4.9 | 0 | | |
| PHF | .927 | .636 | .908 | .250 | .934 | .833 | .877 | .735 | .000 | .852 | .665 | .801 | .868 | .000 | .787 | .886 | .932 | .530 | .000 | .973 | .930 |



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File Name : Jensen and Maple
Site Code : 00000000
Start Date : 10/30/2019


**Groups Printed- Bank 2 - U-turns**

| | MAPLE Southbound | | | | JENSEN Westbound | | | | MAPLE Northbound | | | | JENSEN Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | U-turn | Thru | Right | Peds | Left | Thru | Right | Peds | U-turn | Thru | Right | Peds | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 07:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 |
| 07:30 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| 07:45 AM | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Total | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 16 |
| | | | | | | | | | | | | | | | | | |
| 08:00 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| ****** | | | | | | | | | | | | | | | | | |
| 08:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| | | | | | | | | | | | | | | | | | |
| ****** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 04:00 PM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 7 |
| | | | | | | | | | | | | | | | | | |
| ****** | | | | | | | | | | | | | | | | | |
| 05:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| Total | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 7 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 34 |
| Apprch % | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 58.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41.2 | 0 | 0 | 0 | |

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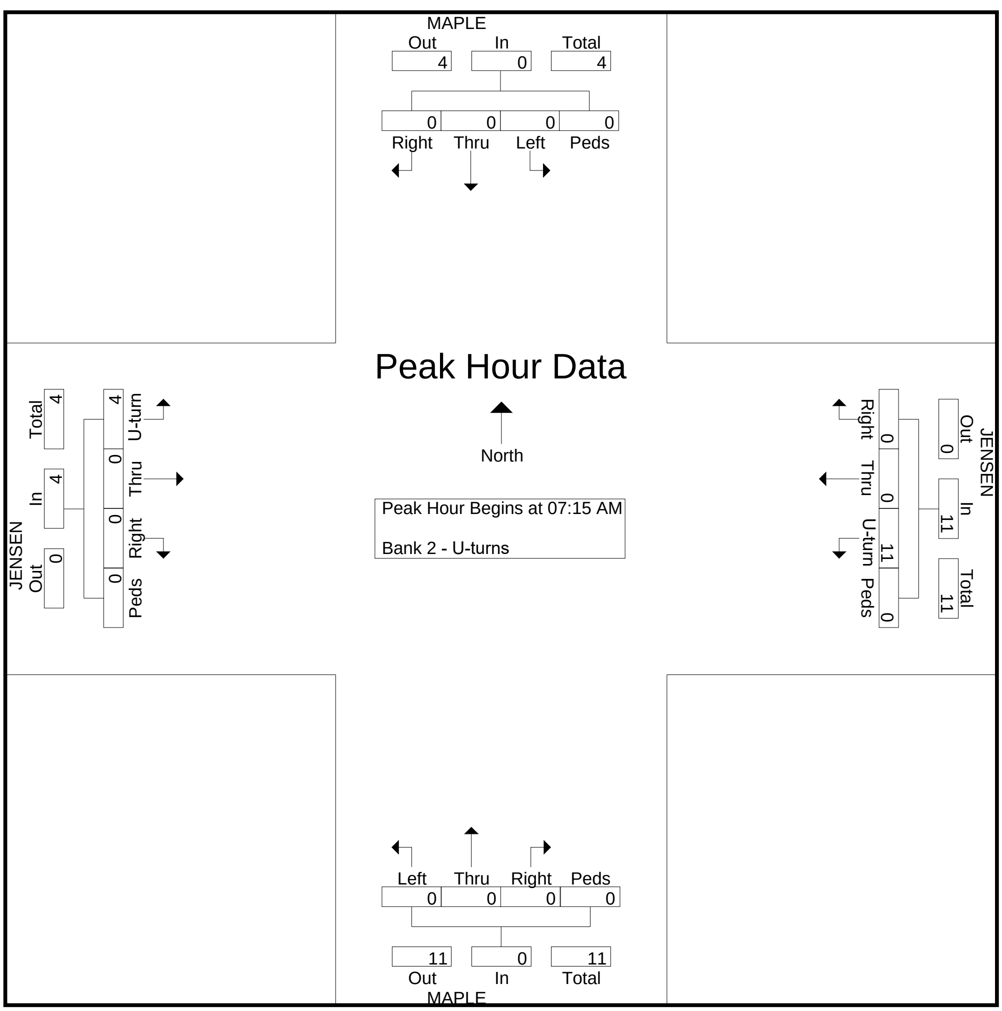
File Name : Jensen and Maple
Site Code : 00000000
Start Date : 10/30/2019


| | MAPLE Southbound | | | | | JENSEN Westbound | | | | | MAPLE Northbound | | | | | JENSEN Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **2** | 0 | 0 | 0 | **2** | 3 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | **6** | 0 | 0 | 0 | **6** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **6** |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 15 |
| % App. Total | 0 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .458 | .000 | .000 | .000 | .458 | .000 | .000 | .000 | .000 | .000 | .500 | .000 | .000 | .000 | .500 | .625 |



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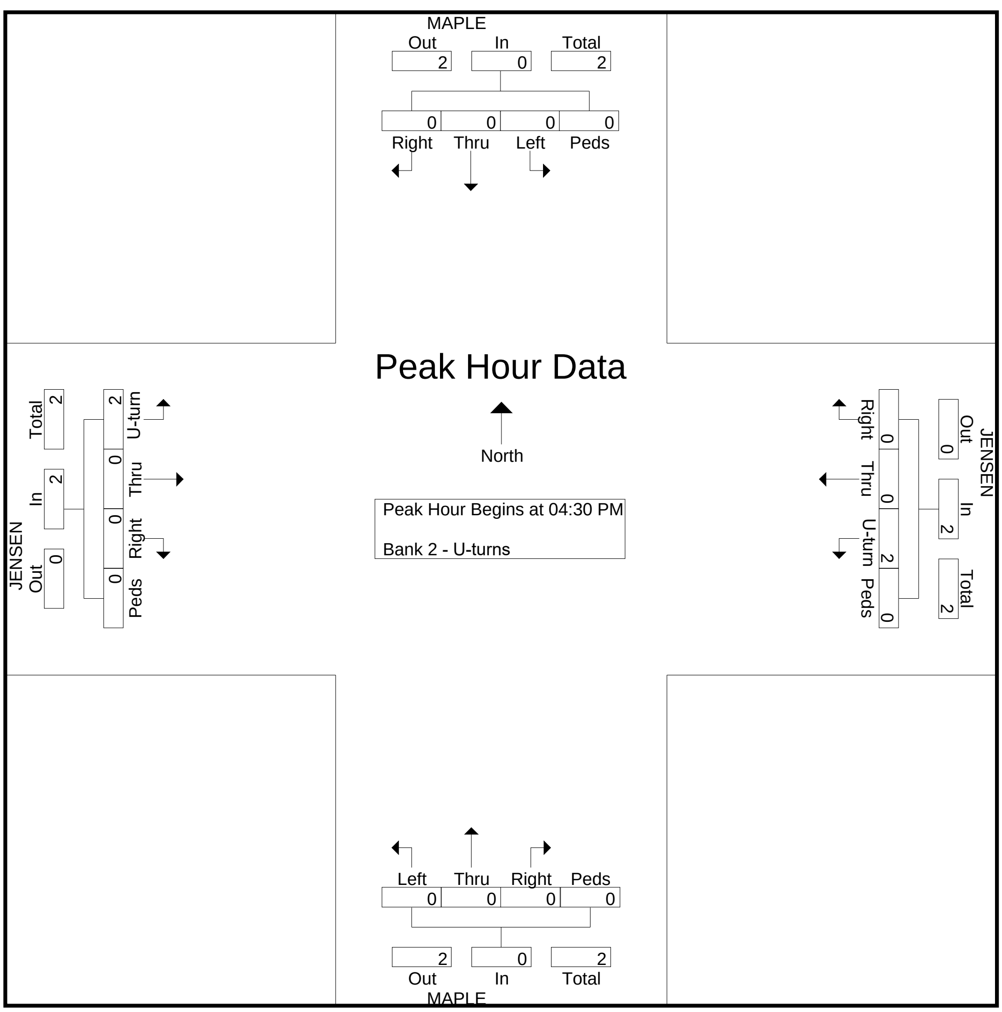
File Name : Jensen and Maple
Site Code : 00000000
Start Date : 10/30/2019
Page No : 3

| | MAPLE Southbound | | | | | JENSEN Westbound | | | | | MAPLE Northbound | | | | | JENSEN Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | **1** | 0 | 0 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | **1** | 0 | 0 | 0 | **1** | **2** |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 |
| % App. Total | 0 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .500 | .000 | .000 | .000 | .500 | .000 | .000 | .000 | .000 | .000 | .500 | .000 | .000 | .000 | .500 | .500 |



# JLB Traffic Engineering, Inc.

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Fresno, CA 93704

(559) 570-8991

*Traffic Engineering, Transportation Planning & Parking Solutions*

www.JLBtraffic.com


File Name : Jensen and Chestnut
Site Code : 00000000
Start Date : 10/31/2019
Page No : 1

**Groups Printed- Unshifted - Bank 2**

| | CHESTNUT Southbound | | | | JENSEN Westbound | | | | CHESTNUT Northbound | | | | JENSEN Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Int. Total |
| 07:00 AM | 9 | 54 | 16 | 0 | 16 | 161 | 5 | 0 | 20 | 32 | 7 | 0 | 17 | 71 | 43 | 0 | 451 |
| 07:15 AM | 14 | 53 | 42 | 0 | 23 | 214 | 13 | 0 | 15 | 48 | 14 | 0 | 13 | 96 | 64 | 0 | 609 |
| 07:30 AM | 25 | 87 | 37 | 0 | 25 | 234 | 22 | 0 | 25 | 67 | 12 | 0 | 19 | 79 | 48 | 0 | 680 |
| 07:45 AM | 18 | 65 | 34 | 0 | 35 | 239 | 21 | 0 | 30 | 44 | 11 | 0 | 9 | 103 | 66 | 0 | 675 |
| Total | 66 | 259 | 129 | 0 | 99 | 848 | 61 | 0 | 90 | 191 | 44 | 0 | 58 | 349 | 221 | 0 | 2415 |
| | | | | | | | | | | | | | | | | | |
| 08:00 AM | 15 | 42 | 33 | 0 | 32 | 166 | 7 | 0 | 25 | 48 | 12 | 0 | 17 | 86 | 42 | 0 | 525 |
| 08:15 AM | 8 | 56 | 18 | 0 | 20 | 134 | 12 | 0 | 35 | 48 | 15 | 1 | 15 | 55 | 32 | 0 | 449 |
| 08:30 AM | 7 | 36 | 20 | 0 | 17 | 114 | 7 | 0 | 37 | 61 | 14 | 0 | 14 | 52 | 41 | 0 | 420 |
| 08:45 AM | 8 | 41 | 18 | 0 | 9 | 94 | 7 | 0 | 21 | 58 | 16 | 0 | 18 | 50 | 29 | 0 | 369 |
| Total | 38 | 175 | 89 | 0 | 78 | 508 | 33 | 0 | 118 | 215 | 57 | 1 | 64 | 243 | 144 | 0 | 1763 |
| | | | | | | | | | | | | | | | | | |
| ****** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 04:00 PM | 14 | 54 | 23 | 1 | 17 | 97 | 17 | 0 | 38 | 113 | 18 | 0 | 28 | 172 | 44 | 0 | 636 |
| 04:15 PM | 21 | 58 | 26 | 1 | 12 | 91 | 17 | 0 | 68 | 121 | 21 | 0 | 36 | 141 | 47 | 0 | 660 |
| 04:30 PM | 16 | 60 | 20 | 0 | 11 | 78 | 22 | 0 | 77 | 111 | 17 | 0 | 48 | 206 | 33 | 0 | 699 |
| 04:45 PM | 26 | 54 | 21 | 1 | 14 | 100 | 11 | 0 | 40 | 115 | 15 | 0 | 47 | 139 | 36 | 2 | 621 |
| Total | 77 | 226 | 90 | 3 | 54 | 366 | 67 | 0 | 223 | 460 | 71 | 0 | 159 | 658 | 160 | 2 | 2616 |
| | | | | | | | | | | | | | | | | | |
| 05:00 PM | 19 | 64 | 36 | 0 | 10 | 82 | 13 | 1 | 47 | 118 | 31 | 0 | 36 | 205 | 39 | 0 | 701 |
| 05:15 PM | 25 | 67 | 26 | 2 | 11 | 81 | 5 | 1 | 36 | 116 | 23 | 0 | 35 | 218 | 18 | 0 | 664 |
| 05:30 PM | 21 | 57 | 30 | 0 | 14 | 93 | 11 | 0 | 32 | 81 | 26 | 0 | 45 | 164 | 28 | 0 | 602 |
| 05:45 PM | 29 | 52 | 24 | 1 | 15 | 76 | 15 | 0 | 30 | 84 | 15 | 0 | 42 | 151 | 26 | 0 | 560 |
| Total | 94 | 240 | 116 | 3 | 50 | 332 | 44 | 2 | 145 | 399 | 95 | 0 | 158 | 738 | 111 | 0 | 2527 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 275 | 900 | 424 | 6 | 281 | 2054 | 205 | 2 | 576 | 1265 | 267 | 1 | 439 | 1988 | 636 | 2 | 9321 |
| Apprch % | 17.1 | 56.1 | 26.4 | 0.4 | 11.1 | 80.8 | 8.1 | 0.1 | 27.3 | 60 | 12.7 | 0 | 14.3 | 64.9 | 20.8 | 0.1 | |
| Total % | 3 | 9.7 | 4.5 | 0.1 | 3 | 22 | 2.2 | 0 | 6.2 | 13.6 | 2.9 | 0 | 4.7 | 21.3 | 6.8 | 0 | |
| Unshifted | 246 | 900 | 424 | 6 | 248 | 2054 | 205 | 2 | 552 | 1265 | 266 | 1 | 424 | 1988 | 636 | 2 | 9219 |
| % Unshifted | 89.5 | 100 | 100 | 100 | 88.3 | 100 | 100 | 100 | 95.8 | 100 | 99.6 | 100 | 96.6 | 100 | 100 | 100 | 98.9 |
| Bank 2 | 29 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 24 | 0 | 1 | 0 | 15 | 0 | 0 | 0 | 102 |
| % Bank 2 | 10.5 | 0 | 0 | 0 | 11.7 | 0 | 0 | 0 | 4.2 | 0 | 0.4 | 0 | 3.4 | 0 | 0 | 0 | 1.1 |

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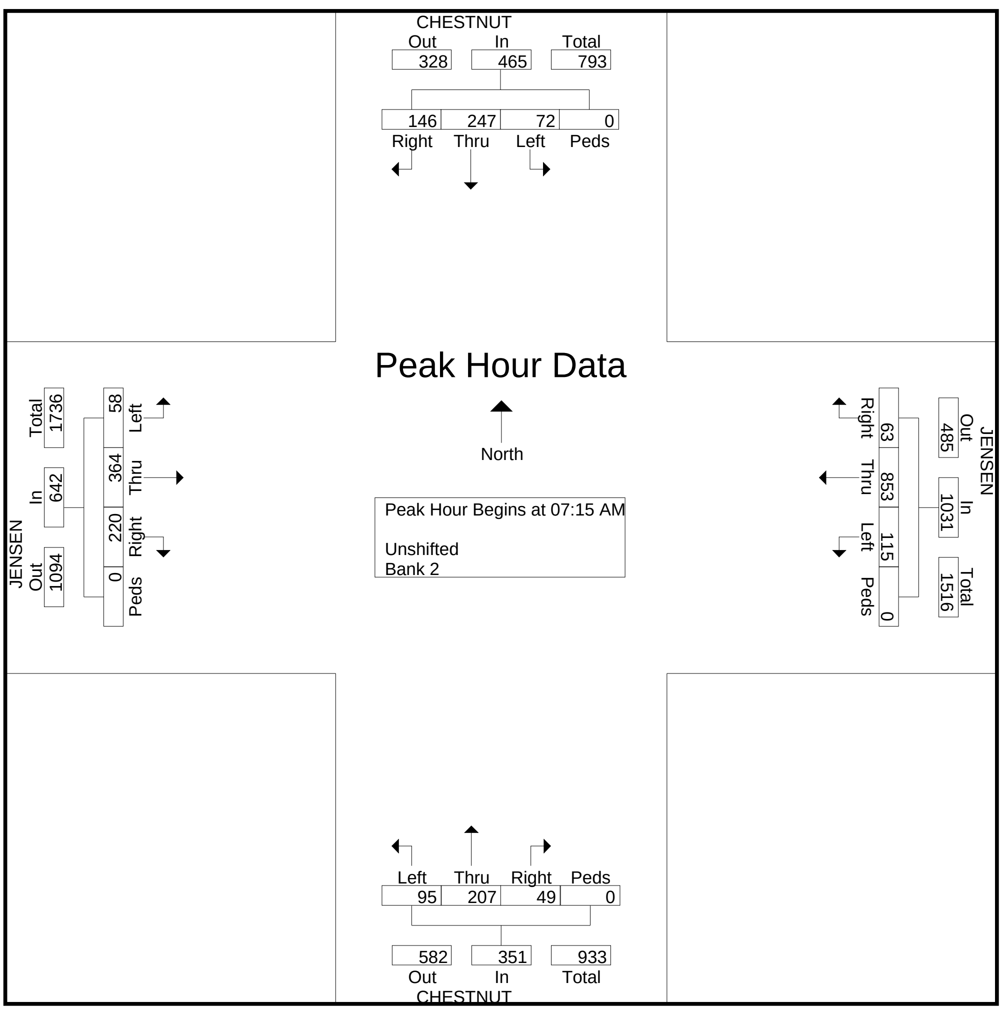
File Name : Jensen and Chestnut
Site Code : 00000000
Start Date : 10/31/2019


| | CHESTNUT Southbound | | | | | JENSEN Westbound | | | | | CHESTNUT Northbound | | | | | JENSEN Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 14 | 53 | **42** | 0 | 109 | 23 | 214 | 13 | 0 | 250 | 15 | 48 | **14** | 0 | 77 | 13 | 96 | 64 | 0 | 173 | 609 |
| 07:30 AM | **25** | **87** | 37 | 0 | **149** | 25 | 234 | **22** | 0 | 281 | 25 | **67** | 12 | 0 | **104** | **19** | 79 | 48 | 0 | 146 | **680** |
| 07:45 AM | 18 | 65 | 34 | 0 | 117 | **35** | **239** | 21 | 0 | **295** | **30** | 44 | 11 | 0 | 85 | 9 | **103** | **66** | 0 | **178** | 675 |
| 08:00 AM | 15 | 42 | 33 | 0 | 90 | 32 | 166 | 7 | 0 | 205 | 25 | 48 | 12 | 0 | 85 | 17 | 86 | 42 | 0 | 145 | 525 |
| Total Volume | 72 | 247 | 146 | 0 | 465 | 115 | 853 | 63 | 0 | 1031 | 95 | 207 | 49 | 0 | 351 | 58 | 364 | 220 | 0 | 642 | 2489 |
| % App. Total | 15.5 | 53.1 | 31.4 | 0 | | 11.2 | 82.7 | 6.1 | 0 | | 27.1 | 59 | 14 | 0 | | 9 | 56.7 | 34.3 | 0 | | |
| PHF | .720 | .710 | .869 | .000 | .780 | .821 | .892 | .716 | .000 | .874 | .792 | .772 | .875 | .000 | .844 | .763 | .883 | .833 | .000 | .902 | .915 |



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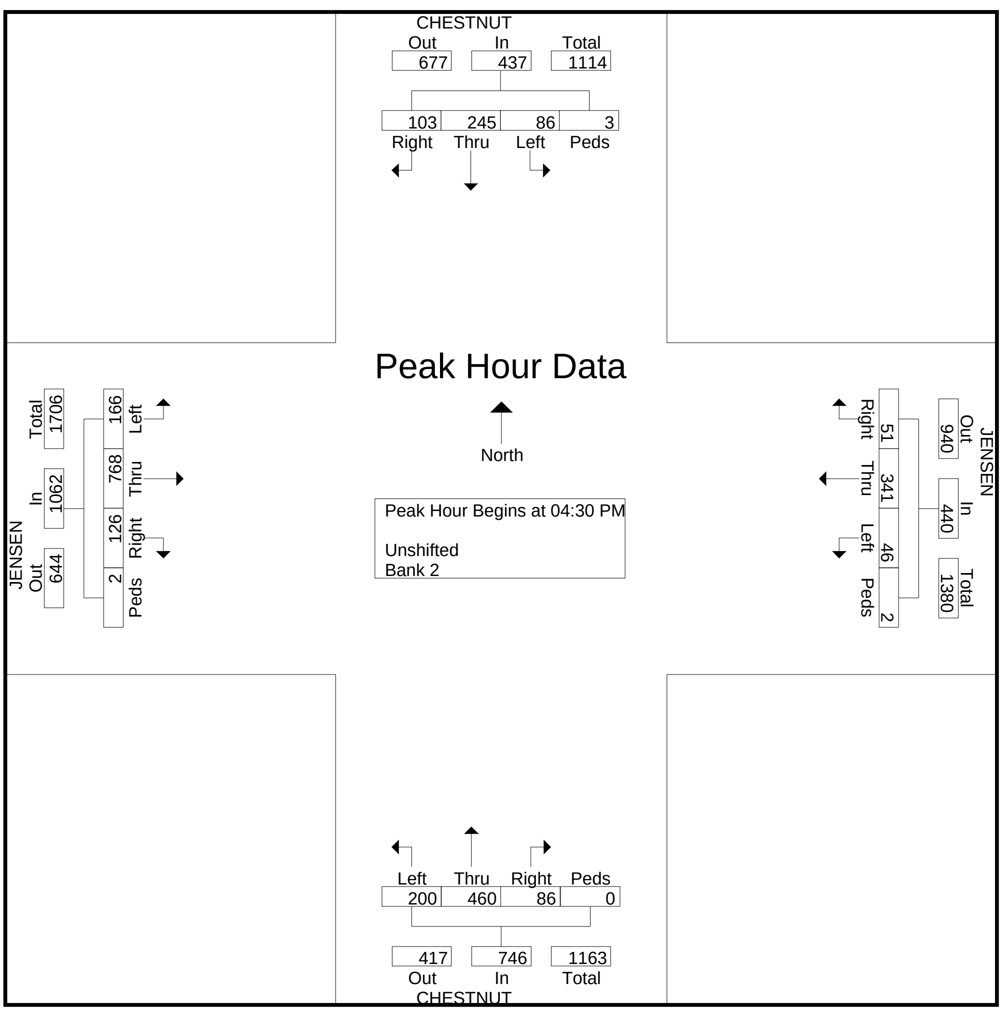
File Name : Jensen and Chestnut
Site Code : 00000000
Start Date : 10/31/2019


| | CHESTNUT Southbound | | | | | JENSEN Westbound | | | | | CHESTNUT Northbound | | | | | JENSEN Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 16 | 60 | 20 | 0 | 96 | 11 | 78 | **22** | 0 | 111 | **77** | 111 | 17 | 0 | **205** | **48** | 206 | 33 | 0 | **287** | 699 |
| 04:45 PM | **26** | 54 | 21 | 1 | 102 | **14** | **100** | 11 | 0 | **125** | 40 | 115 | 15 | 0 | 170 | 47 | 139 | 36 | **2** | 224 | 621 |
| 05:00 PM | 19 | 64 | **36** | 0 | 119 | 10 | 82 | 13 | **1** | 106 | 47 | **118** | **31** | 0 | 196 | 36 | 205 | **39** | 0 | 280 | **701** |
| 05:15 PM | 25 | **67** | 26 | **2** | **120** | 11 | 81 | 5 | 1 | 98 | 36 | 116 | 23 | 0 | 175 | 35 | **218** | 18 | 0 | 271 | 664 |
| Total Volume | 86 | 245 | 103 | 3 | 437 | 46 | 341 | 51 | 2 | 440 | 200 | 460 | 86 | 0 | 746 | 166 | 768 | 126 | 2 | 1062 | 2685 |
| % App. Total | 19.7 | 56.1 | 23.6 | 0.7 | | 10.5 | 77.5 | 11.6 | 0.5 | | 26.8 | 61.7 | 11.5 | 0 | | 15.6 | 72.3 | 11.9 | 0.2 | | |
| PHF | .827 | .914 | .715 | .375 | .910 | .821 | .853 | .580 | .500 | .880 | .649 | .975 | .694 | .000 | .910 | .865 | .881 | .808 | .250 | .925 | .958 |



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File Name : Jensen and Chestnut
Site Code : 00000000
Start Date : 10/31/2019
Page No : 1

**Groups Printed- Bank 2 - U-turns**

| | CHESTNUT Southbound | | | | JENSEN Westbound | | | | CHESTNUT Northbound | | | | JENSEN Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | U-turn | Thru | Right | Peds | U-turn | Thru | Right | Peds | U-turn | Thru | Right | Peds | U-turn | Thru | Right | Peds | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 07:30 AM | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 |
| 07:45 AM | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 1 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 15 |
| | | | | | | | | | | | | | | | | | |
| 08:00 AM | 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 |
| 08:15 AM | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 |
| Total | 3 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 21 |
| | | | | | | | | | | | | | | | | | |
| ****** | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 04:00 PM | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 10 |
| 04:15 PM | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 11 |
| 04:30 PM | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 7 |
| 04:45 PM | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 |
| Total | 10 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 7 | 0 | 0 | 0 | 35 |
| | | | | | | | | | | | | | | | | | |
| 05:00 PM | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 |
| 05:15 PM | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 9 |
| 05:30 PM | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 |
| 05:45 PM | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Total | 15 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 31 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 29 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 24 | 0 | 1 | 0 | 15 | 0 | 0 | 0 | 102 |
| Apprch % | 100 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 96 | 0 | 4 | 0 | 100 | 0 | 0 | 0 | |
| Total % | 28.4 | 0 | 0 | 0 | 32.4 | 0 | 0 | 0 | 23.5 | 0 | 1 | 0 | 14.7 | 0 | 0 | 0 | |

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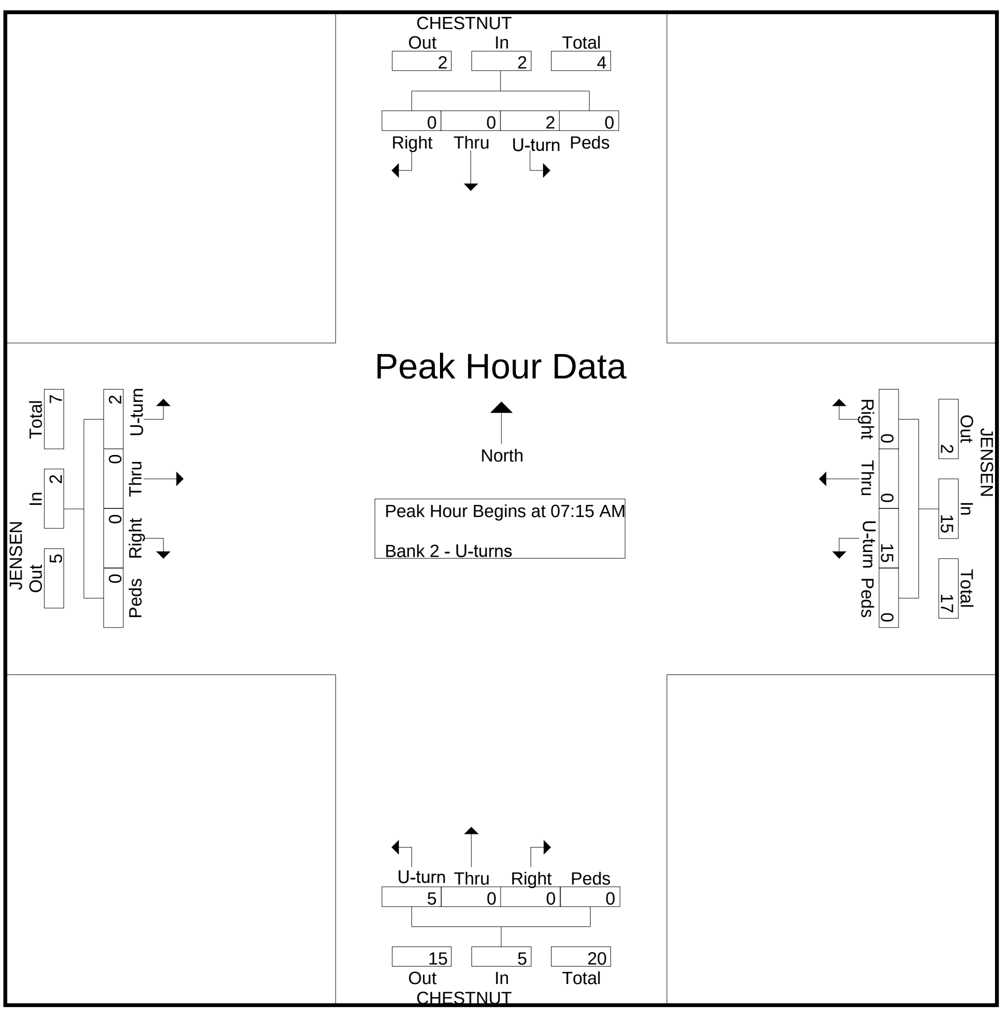
File Name : Jensen and Chestnut
Site Code : 00000000
Start Date : 10/31/2019


| | CHESTNUT Southbound | | | | | JENSEN Westbound | | | | | CHESTNUT Northbound | | | | | JENSEN Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | U-turn | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | **5** | 0 | 0 | 0 | **5** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 2 | **1** | 0 | 0 | 0 | **1** | 6 |
| 07:45 AM | **1** | 0 | 0 | 0 | **1** | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 08:00 AM | 1 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 5 | **3** | 0 | 0 | 0 | **3** | 1 | 0 | 0 | 0 | 1 | **10** |
| Total Volume | 2 | 0 | 0 | 0 | 2 | 15 | 0 | 0 | 0 | 15 | 5 | 0 | 0 | 0 | 5 | 2 | 0 | 0 | 0 | 2 | 24 |
| % App. Total | 100 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | |
| PHF | .500 | .000 | .000 | .000 | .500 | .750 | .000 | .000 | .000 | .750 | .417 | .000 | .000 | .000 | .417 | .500 | .000 | .000 | .000 | .500 | .600 |



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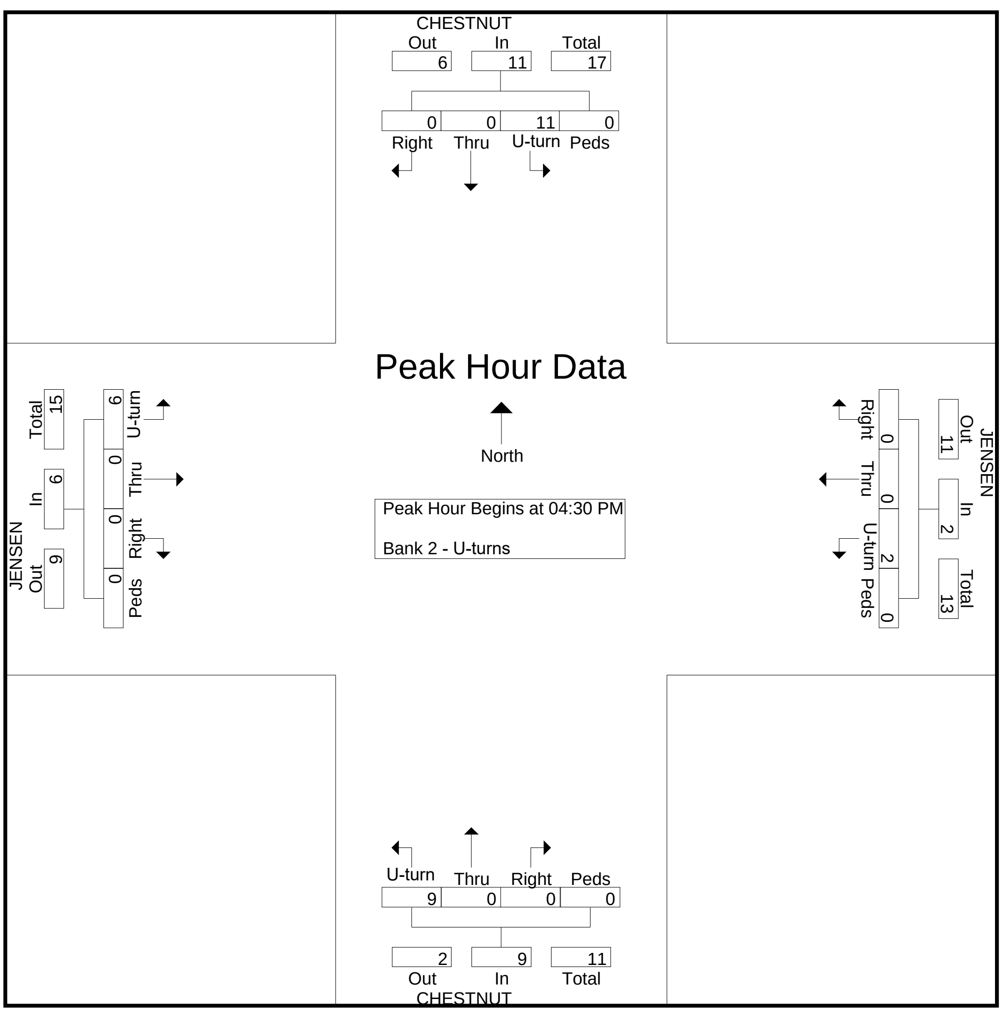
File Name : Jensen and Chestnut
Site Code : 00000000
Start Date : 10/31/2019
Page No : 3

| | CHESTNUT Southbound | | | | | JENSEN Westbound | | | | | CHESTNUT Northbound | | | | | JENSEN Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | U-turn | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | U-turn | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | **2** | 0 | 0 | 0 | **2** | 7 |
| 04:45 PM | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | **4** | 0 | 0 | 0 | **4** | 1 | 0 | 0 | 0 | 1 | 7 |
| 05:00 PM | 2 | 0 | 0 | 0 | 2 | **2** | 0 | 0 | 0 | **2** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 5 |
| 05:15 PM | **5** | 0 | 0 | 0 | **5** | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 2 | **9** |
| Total Volume | 11 | 0 | 0 | 0 | 11 | 2 | 0 | 0 | 0 | 2 | 9 | 0 | 0 | 0 | 9 | 6 | 0 | 0 | 0 | 6 | 28 |
| % App. Total | 100 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | 100 | 0 | 0 | 0 | | |
| PHF | .550 | .000 | .000 | .000 | .550 | .250 | .000 | .000 | .000 | .250 | .563 | .000 | .000 | .000 | .563 | .750 | .000 | .000 | .000 | .750 | .778 |



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File Name : Maple and Annadale
Site Code : 00000000
Start Date : 11/5/2019
Page No : 1

**Groups Printed- Unshifted**

| | MAPLE Southbound | | | MAPLE Northbound | | | ANNADALE Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Right | Peds | Left | Thru | Peds | Left | Right | Peds | Int. Total |
| 07:00 AM | 26 | 0 | 0 | 7 | 15 | 0 | 2 | 16 | 0 | 66 |
| 07:15 AM | 28 | 1 | 0 | 6 | 11 | 0 | 0 | 17 | 0 | 63 |
| 07:30 AM | 45 | 2 | 0 | 7 | 24 | 0 | 0 | 17 | 0 | 95 |
| 07:45 AM | 39 | 1 | 0 | 11 | 33 | 0 | 1 | 30 | 0 | 115 |
| Total | 138 | 4 | 0 | 31 | 83 | 0 | 3 | 80 | 0 | 339 |
| | | | | | | | | | | |
| 08:00 AM | 22 | 0 | 0 | 5 | 27 | 0 | 1 | 7 | 0 | 62 |
| 08:15 AM | 34 | 2 | 0 | 2 | 23 | 0 | 1 | 6 | 0 | 68 |
| 08:30 AM | 22 | 0 | 0 | 5 | 32 | 0 | 1 | 10 | 0 | 70 |
| 08:45 AM | 27 | 0 | 1 | 1 | 15 | 0 | 0 | 11 | 0 | 55 |
| Total | 105 | 2 | 1 | 13 | 97 | 0 | 3 | 34 | 0 | 255 |
| | | | | | | | | | | |
| ****** | | | | | | | | | | |
| | | | | | | | | | | |
| 04:00 PM | 20 | 0 | 0 | 21 | 50 | 0 | 0 | 5 | 0 | 96 |
| 04:15 PM | 16 | 0 | 0 | 10 | 37 | 0 | 0 | 10 | 0 | 73 |
| 04:30 PM | 18 | 0 | 0 | 12 | 32 | 0 | 1 | 6 | 0 | 69 |
| 04:45 PM | 14 | 0 | 0 | 15 | 43 | 0 | 1 | 8 | 0 | 81 |
| Total | 68 | 0 | 0 | 58 | 162 | 0 | 2 | 29 | 0 | 319 |
| | | | | | | | | | | |
| 05:00 PM | 17 | 1 | 0 | 22 | 81 | 0 | 1 | 6 | 0 | 128 |
| 05:15 PM | 11 | 1 | 0 | 14 | 31 | 0 | 0 | 4 | 0 | 61 |
| 05:30 PM | 15 | 0 | 0 | 9 | 31 | 0 | 0 | 8 | 0 | 63 |
| 05:45 PM | 18 | 0 | 0 | 3 | 24 | 0 | 0 | 2 | 0 | 47 |
| Total | 61 | 2 | 0 | 48 | 167 | 0 | 1 | 20 | 0 | 299 |
| | | | | | | | | | | |
| Grand Total | 372 | 8 | 1 | 150 | 509 | 0 | 9 | 163 | 0 | 1212 |
| Apprch % | 97.6 | 2.1 | 0.3 | 22.8 | 77.2 | 0 | 5.2 | 94.8 | 0 | |
| Total % | 30.7 | 0.7 | 0.1 | 12.4 | 42 | 0 | 0.7 | 13.4 | 0 | |

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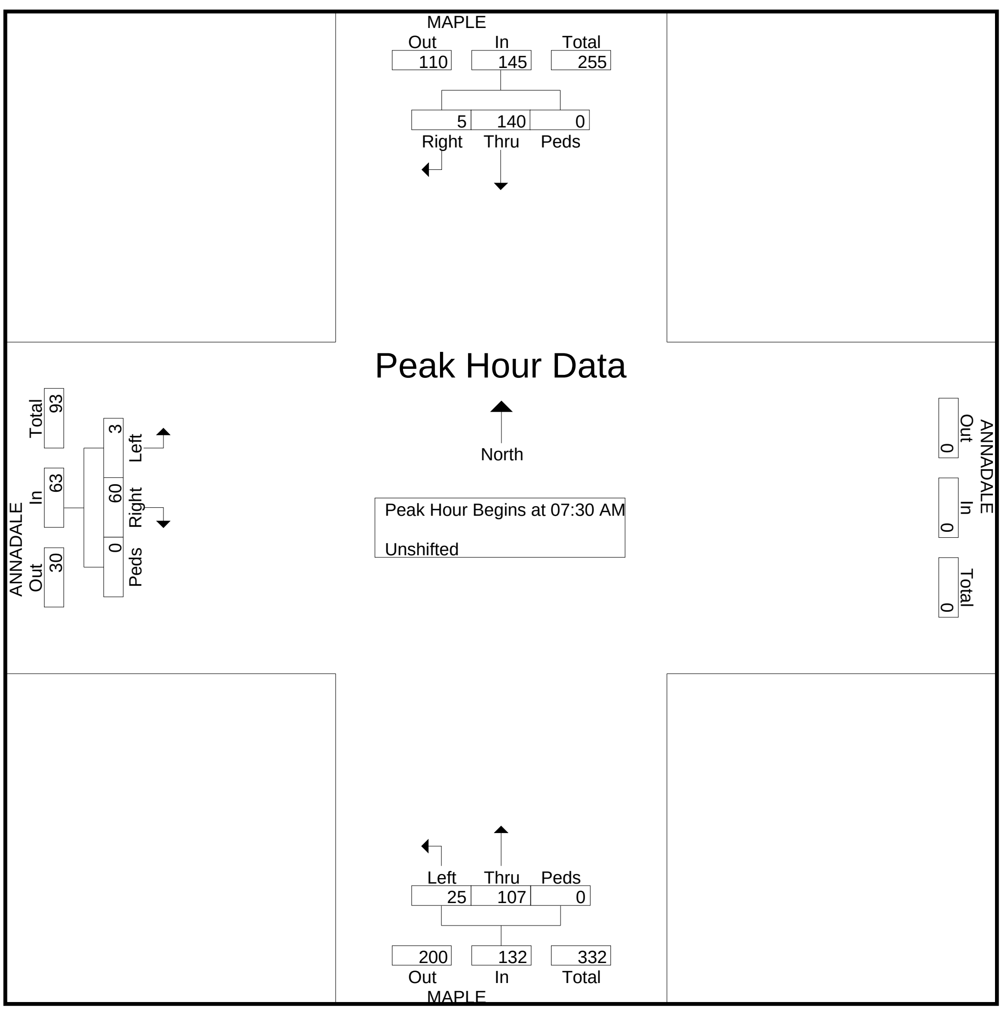
File Name : Maple and Annadale
Site Code : 00000000
Start Date : 11/5/2019
Page No : 2

| | MAPLE Southbound | | | | MAPLE Northbound | | | | ANNADALE Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | |
| 07:30 AM | **45** | **2** | 0 | **47** | 7 | 24 | 0 | 31 | 0 | 17 | 0 | 17 | 95 |
| 07:45 AM | 39 | 1 | 0 | 40 | **11** | **33** | 0 | **44** | **1** | **30** | 0 | **31** | **115** |
| 08:00 AM | 22 | 0 | 0 | 22 | 5 | 27 | 0 | 32 | 1 | 7 | 0 | 8 | 62 |
| 08:15 AM | 34 | 2 | 0 | 36 | 2 | 23 | 0 | 25 | 1 | 6 | 0 | 7 | 68 |
| Total Volume | 140 | 5 | 0 | 145 | 25 | 107 | 0 | 132 | 3 | 60 | 0 | 63 | 340 |
| % App. Total | 96.6 | 3.4 | 0 | | 18.9 | 81.1 | 0 | | 4.8 | 95.2 | 0 | | |
| PHF | .778 | .625 | .000 | .771 | .568 | .811 | .000 | .750 | .750 | .500 | .000 | .508 | .739 |

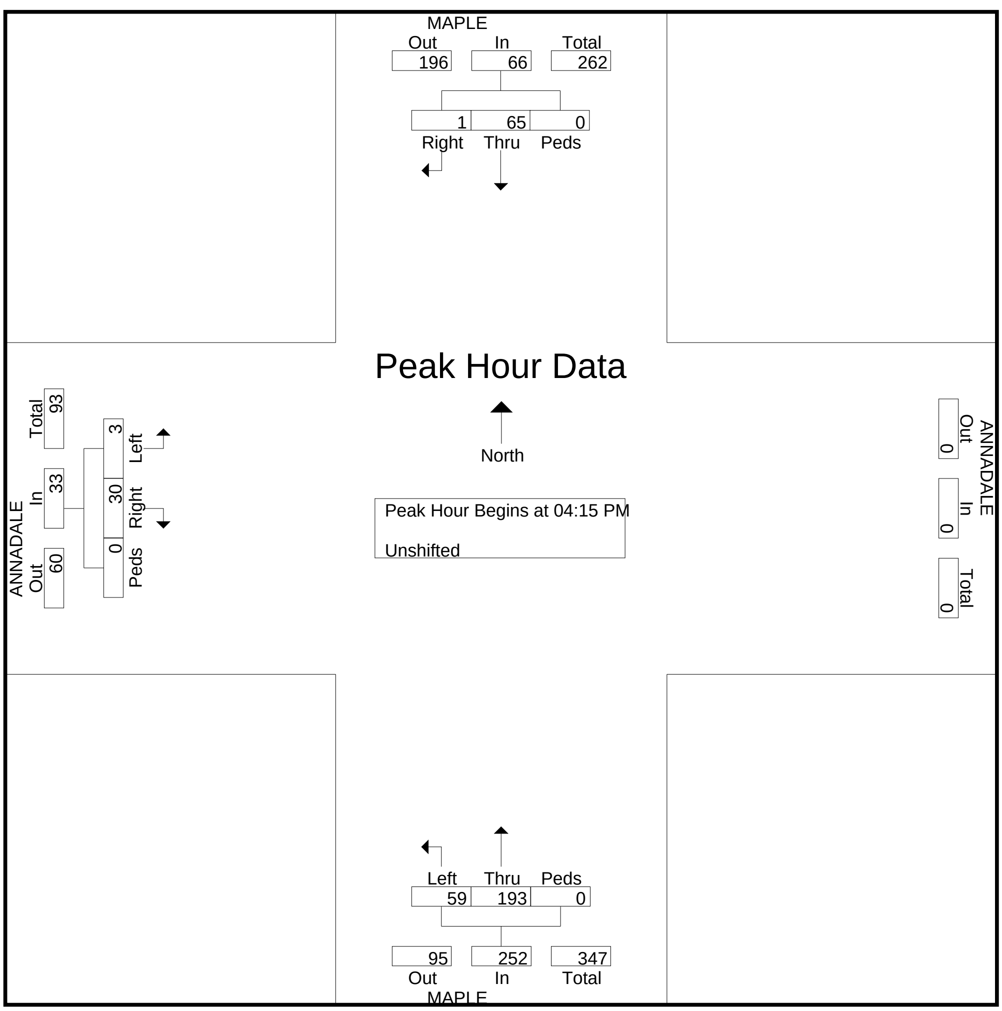


# JLB Traffic Engineering, Inc.

516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
(559) 570-8991
*Traffic Engineering, Transportation Planning & Parking Solutions*
www.JLBtraffic.com

File Name : Maple and Annadale
Site Code : 00000000
Start Date : 11/5/2019


| | MAPLE Southbound | | | | MAPLE Northbound | | | | ANNADALE Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | | | | |
| 04:15 PM | 16 | 0 | 0 | 16 | 10 | 37 | 0 | 47 | 0 | **10** | 0 | **10** | 73 |
| 04:30 PM | **18** | 0 | 0 | **18** | 12 | 32 | 0 | 44 | **1** | 6 | 0 | 7 | 69 |
| 04:45 PM | 14 | 0 | 0 | 14 | 15 | 43 | 0 | 58 | 1 | 8 | 0 | 9 | 81 |
| 05:00 PM | 17 | **1** | 0 | 18 | **22** | **81** | 0 | **103** | 1 | 6 | 0 | 7 | **128** |
| Total Volume | 65 | 1 | 0 | 66 | 59 | 193 | 0 | 252 | 3 | 30 | 0 | 33 | 351 |
| % App. Total | 98.5 | 1.5 | 0 | | 23.4 | 76.6 | 0 | | 9.1 | 90.9 | 0 | | |
| PHF | .903 | .250 | .000 | .917 | .670 | .596 | .000 | .612 | .750 | .750 | .000 | .825 | .686 |



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File Name : Maple and North
Site Code : 00000000
Start Date : 11/6/2019
Page No : 1

**Groups Printed- Unshifted**

| | MAPLE Southbound | | | NORTH Westbound | | | NORTH Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | Thru | Right | Peds | Left | Thru | Peds | Int. Total |
| 07:00 AM | 13 | 18 | 0 | 45 | 16 | 0 | 7 | 34 | 0 | 133 |
| 07:15 AM | 3 | 14 | 0 | 54 | 11 | 0 | 6 | 36 | 0 | 124 |
| 07:30 AM | 24 | 8 | 0 | 48 | 22 | 0 | 11 | 41 | 0 | 154 |
| 07:45 AM | 24 | 22 | 0 | 41 | 31 | 0 | 16 | 37 | 0 | 171 |
| Total | 64 | 62 | 0 | 188 | 80 | 0 | 40 | 148 | 0 | 582 |
| | | | | | | | | | | |
| 08:00 AM | 9 | 10 | 0 | 38 | 20 | 0 | 20 | 34 | 0 | 131 |
| 08:15 AM | 11 | 16 | 0 | 27 | 22 | 0 | 5 | 29 | 0 | 110 |
| 08:30 AM | 11 | 17 | 0 | 38 | 16 | 0 | 10 | 46 | 0 | 138 |
| 08:45 AM | 12 | 8 | 0 | 30 | 16 | 0 | 10 | 45 | 0 | 121 |
| Total | 43 | 51 | 0 | 133 | 74 | 0 | 45 | 154 | 0 | 500 |
| | | | | | | | | | | |
| ****** | | | | | | | | | | |
| | | | | | | | | | | |
| 04:00 PM | 17 | 31 | 0 | 56 | 18 | 0 | 12 | 64 | 0 | 198 |
| 04:15 PM | 24 | 28 | 0 | 51 | 17 | 0 | 11 | 63 | 0 | 194 |
| 04:30 PM | 31 | 37 | 0 | 68 | 24 | 0 | 18 | 48 | 0 | 226 |
| 04:45 PM | 15 | 29 | 0 | 50 | 16 | 1 | 15 | 55 | 0 | 181 |
| Total | 87 | 125 | 0 | 225 | 75 | 1 | 56 | 230 | 0 | 799 |
| | | | | | | | | | | |
| 05:00 PM | 18 | 15 | 0 | 57 | 14 | 0 | 13 | 61 | 0 | 178 |
| 05:15 PM | 14 | 17 | 0 | 43 | 11 | 0 | 8 | 47 | 0 | 140 |
| 05:30 PM | 7 | 14 | 0 | 41 | 22 | 1 | 11 | 20 | 0 | 116 |
| 05:45 PM | 13 | 4 | 0 | 41 | 7 | 0 | 18 | 49 | 0 | 132 |
| Total | 52 | 50 | 0 | 182 | 54 | 1 | 50 | 177 | 0 | 566 |
| | | | | | | | | | | |
| Grand Total | 246 | 288 | 0 | 728 | 283 | 2 | 191 | 709 | 0 | 2447 |
| Apprch % | 46.1 | 53.9 | 0 | 71.9 | 27.9 | 0.2 | 21.2 | 78.8 | 0 | |
| Total % | 10.1 | 11.8 | 0 | 29.8 | 11.6 | 0.1 | 7.8 | 29 | 0 | |

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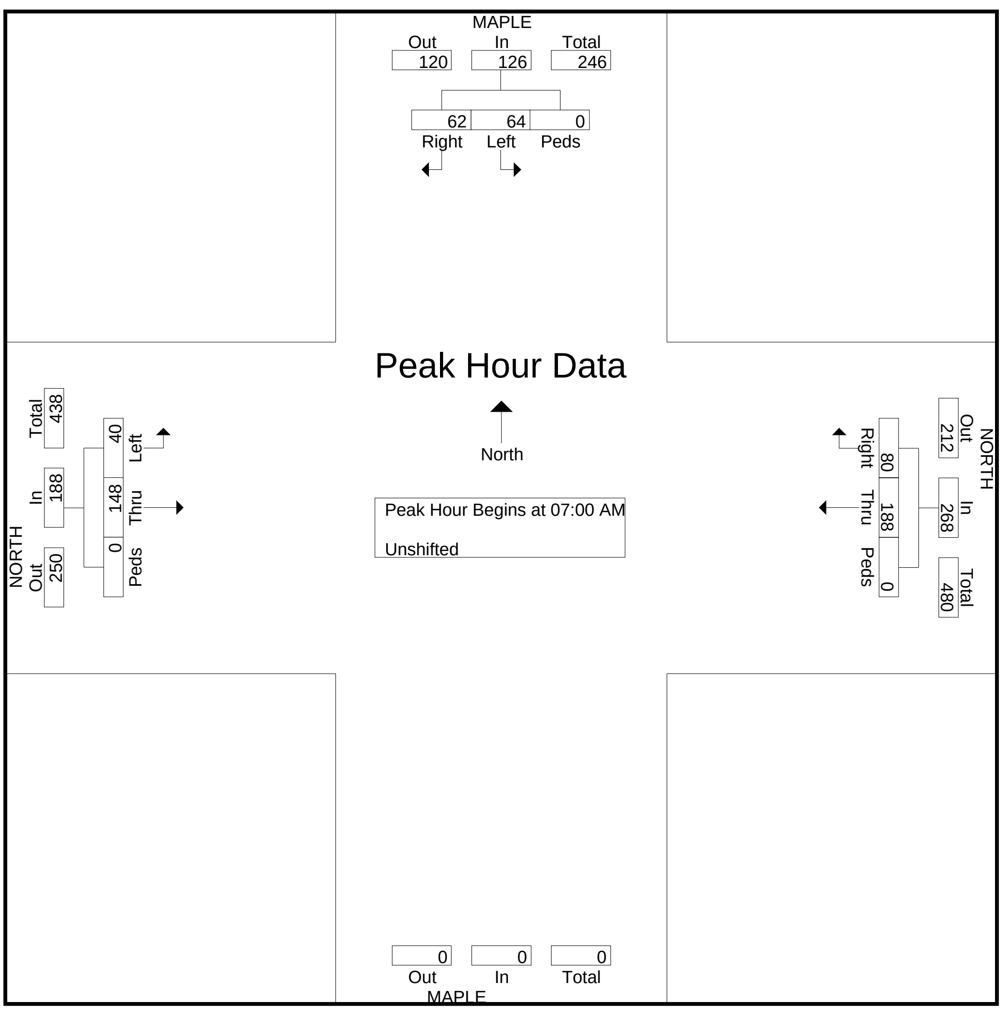
File Name : Maple and North
Site Code : 00000000
Start Date : 11/6/2019
Page No : 2

| | MAPLE Southbound | | | | NORTH Westbound | | | | NORTH Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:00 AM | | | | | | | | | | | | | |
| 07:00 AM | 13 | 18 | 0 | 31 | 45 | 16 | 0 | 61 | 7 | 34 | 0 | 41 | 133 |
| 07:15 AM | 3 | 14 | 0 | 17 | **54** | 11 | 0 | 65 | 6 | 36 | 0 | 42 | 124 |
| 07:30 AM | **24** | 8 | 0 | 32 | 48 | 22 | 0 | 70 | 11 | **41** | 0 | 52 | 154 |
| 07:45 AM | 24 | **22** | 0 | **46** | 41 | **31** | 0 | **72** | **16** | 37 | 0 | **53** | **171** |
| Total Volume | 64 | 62 | 0 | 126 | 188 | 80 | 0 | 268 | 40 | 148 | 0 | 188 | 582 |
| % App. Total | 50.8 | 49.2 | 0 | | 70.1 | 29.9 | 0 | | 21.3 | 78.7 | 0 | | |
| PHF | .667 | .705 | .000 | .685 | .870 | .645 | .000 | .931 | .625 | .902 | .000 | .887 | .851 |



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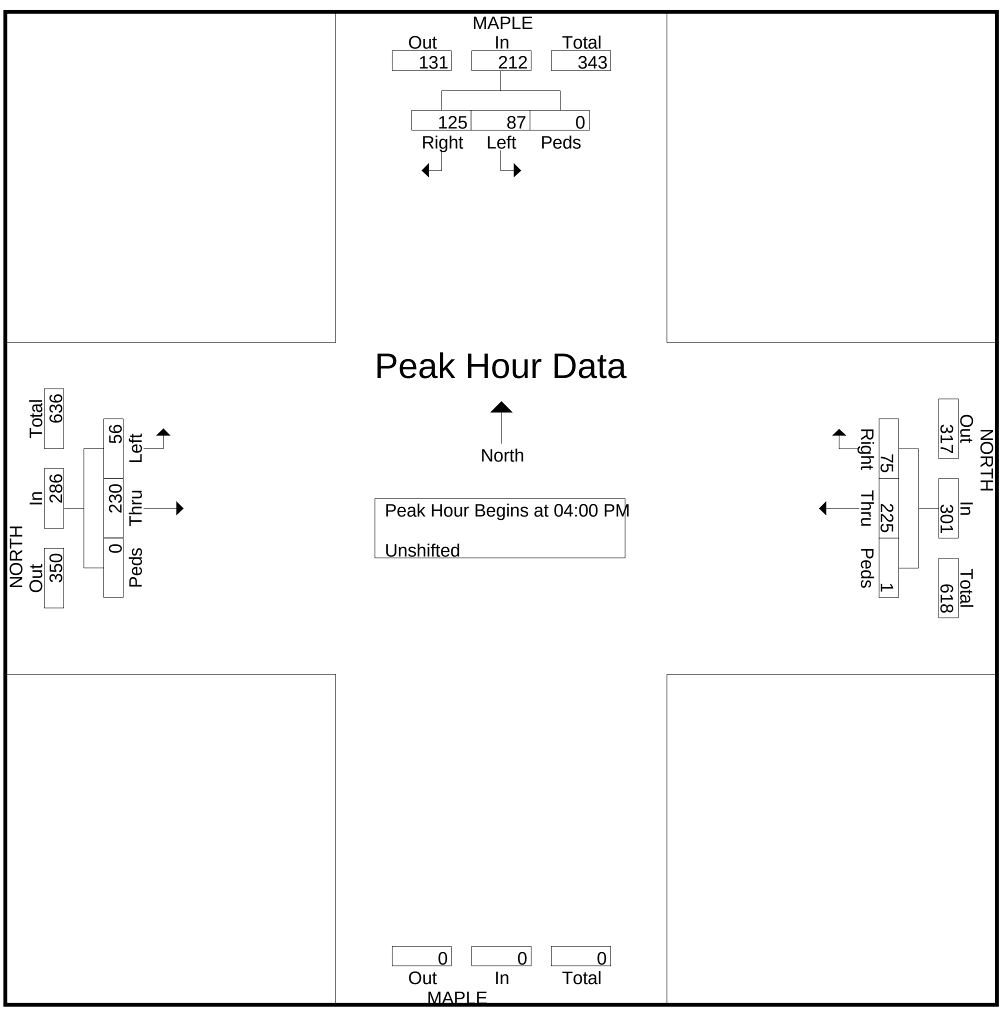
File Name : Maple and North
Site Code : 00000000
Start Date : 11/6/2019


| | MAPLE Southbound | | | | NORTH Westbound | | | | NORTH Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:00 PM | | | | | | | | | | | | | |
| 04:00 PM | 17 | 31 | 0 | 48 | 56 | 18 | 0 | 74 | 12 | **64** | 0 | **76** | 198 |
| 04:15 PM | 24 | 28 | 0 | 52 | 51 | 17 | 0 | 68 | 11 | 63 | 0 | 74 | 194 |
| 04:30 PM | **31** | **37** | 0 | **68** | **68** | **24** | 0 | **92** | **18** | 48 | 0 | 66 | **226** |
| 04:45 PM | 15 | 29 | 0 | 44 | 50 | 16 | **1** | 67 | 15 | 55 | 0 | 70 | 181 |
| Total Volume | 87 | 125 | 0 | 212 | 225 | 75 | 1 | 301 | 56 | 230 | 0 | 286 | 799 |
| % App. Total | 41 | 59 | 0 | | 74.8 | 24.9 | 0.3 | | 19.6 | 80.4 | 0 | | |
| PHF | .702 | .845 | .000 | .779 | .827 | .781 | .250 | .818 | .778 | .898 | .000 | .941 | .884 |



Prepared by National Data & Surveying Services

# VOLUME

## Maple Ave Bet. Burns Ave & Grove Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_001

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,830 | 4,074 | 0 | 0 | 7,904 |

| AM Period | NB | | SB | | EB | WB | TOTAL | | PM Period | NB | | SB | | EB | WB | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 9 | | 14 | | | | 23 | | 12:00 | 49 | | 51 | | | | 100 | |
| 00:15 | 5 | | 6 | | | | 11 | | 12:15 | 48 | | 46 | | | | 94 | |
| 00:30 | 6 | | 6 | | | | 12 | | 12:30 | 53 | | 45 | | | | 98 | |
| 00:45 | 4 | 24 | 5 | 31 | | | 9 | 55 | 12:45 | 34 | 184 | 66 | 208 | | | 100 | 392 |
| 01:00 | 4 | | 2 | | | | 6 | | 13:00 | 44 | | 56 | | | | 100 | |
| 01:15 | 4 | | 6 | | | | 10 | | 13:15 | 44 | | 56 | | | | 100 | |
| 01:30 | 4 | | 2 | | | | 6 | | 13:30 | 70 | | 73 | | | | 143 | |
| 01:45 | 1 | 13 | 4 | 14 | | | 5 | 27 | 13:45 | 57 | 215 | 64 | 249 | | | 121 | 464 |
| 02:00 | 4 | | 5 | | | | 9 | | 14:00 | 59 | | 49 | | | | 108 | |
| 02:15 | 5 | | 2 | | | | 7 | | 14:15 | 54 | | 54 | | | | 108 | |
| 02:30 | 6 | | 9 | | | | 15 | | 14:30 | 107 | | 71 | | | | 178 | |
| 02:45 | 13 | 28 | 12 | 28 | | | 25 | 56 | 14:45 | 71 | 291 | 89 | 263 | | | 160 | 554 |
| 03:00 | 6 | | 9 | | | | 15 | | 15:00 | 70 | | 75 | | | | 145 | |
| 03:15 | 5 | | 5 | | | | 10 | | 15:15 | 76 | | 59 | | | | 135 | |
| 03:30 | 5 | | 11 | | | | 16 | | 15:30 | 105 | | 73 | | | | 178 | |
| 03:45 | 9 | 25 | 18 | 43 | | | 27 | 68 | 15:45 | 94 | 345 | 73 | 280 | | | 167 | 625 |
| 04:00 | 4 | | 13 | | | | 17 | | 16:00 | 112 | | 81 | | | | 193 | |
| 04:15 | 9 | | 16 | | | | 25 | | 16:15 | 105 | | 74 | | | | 179 | |
| 04:30 | 17 | | 26 | | | | 43 | | 16:30 | 119 | | 53 | | | | 172 | |
| 04:45 | 12 | 42 | 38 | 93 | | | 50 | 135 | 16:45 | 92 | 428 | 87 | 295 | | | 179 | 723 |
| 05:00 | 10 | | 22 | | | | 32 | | 17:00 | 93 | | 69 | | | | 162 | |
| 05:15 | 12 | | 43 | | | | 55 | | 17:15 | 98 | | 66 | | | | 164 | |
| 05:30 | 23 | | 48 | | | | 71 | | 17:30 | 92 | | 68 | | | | 160 | |
| 05:45 | 18 | 63 | 60 | 173 | | | 78 | 236 | 17:45 | 74 | 357 | 58 | 261 | | | 132 | 618 |
| 06:00 | 26 | | 59 | | | | 85 | | 18:00 | 83 | | 40 | | | | 123 | |
| 06:15 | 25 | | 62 | | | | 87 | | 18:15 | 75 | | 36 | | | | 111 | |
| 06:30 | 38 | | 82 | | | | 120 | | 18:30 | 46 | | 35 | | | | 81 | |
| 06:45 | 32 | 121 | 114 | 317 | | | 146 | 438 | 18:45 | 42 | 246 | 37 | 148 | | | 79 | 394 |
| 07:00 | 35 | | 80 | | | | 115 | | 19:00 | 37 | | 41 | | | | 78 | |
| 07:15 | 78 | | 86 | | | | 164 | | 19:15 | 30 | | 28 | | | | 58 | |
| 07:30 | 86 | | 92 | | | | 178 | | 19:30 | 27 | | 29 | | | | 56 | |
| 07:45 | 64 | 263 | 113 | 371 | | | 177 | 634 | 19:45 | 38 | 132 | 38 | 136 | | | 76 | 268 |
| 08:00 | 56 | | 69 | | | | 125 | | 20:00 | 24 | | 24 | | | | 48 | |
| 08:15 | 49 | | 64 | | | | 113 | | 20:15 | 19 | | 24 | | | | 43 | |
| 08:30 | 41 | | 51 | | | | 92 | | 20:30 | 28 | | 30 | | | | 58 | |
| 08:45 | 36 | 182 | 46 | 230 | | | 82 | 412 | 20:45 | 38 | 109 | 22 | 100 | | | 60 | 209 |
| 09:00 | 42 | | 44 | | | | 86 | | 21:00 | 32 | | 26 | | | | 58 | |
| 09:15 | 55 | | 44 | | | | 99 | | 21:15 | 22 | | 32 | | | | 54 | |
| 09:30 | 41 | | 34 | | | | 75 | | 21:30 | 28 | | 27 | | | | 55 | |
| 09:45 | 45 | 183 | 55 | 177 | | | 100 | 360 | 21:45 | 26 | 108 | 21 | 106 | | | 47 | 214 |
| 10:00 | 57 | | 44 | | | | 101 | | 22:00 | 17 | | 21 | | | | 38 | |
| 10:15 | 40 | | 55 | | | | 95 | | 22:15 | 10 | | 16 | | | | 26 | |
| 10:30 | 34 | | 56 | | | | 90 | | 22:30 | 14 | | 24 | | | | 38 | |
| 10:45 | 38 | 169 | 45 | 200 | | | 83 | 369 | 22:45 | 16 | 57 | 10 | 71 | | | 26 | 128 |
| 11:00 | 62 | | 55 | | | | 117 | | 23:00 | 15 | | 20 | | | | 35 | |
| 11:15 | 47 | | 64 | | | | 111 | | 23:15 | 15 | | 9 | | | | 24 | |
| 11:30 | 53 | | 61 | | | | 114 | | 23:30 | 9 | | 10 | | | | 19 | |
| 11:45 | 39 | 201 | 51 | 231 | | | 90 | 432 | 23:45 | 5 | 44 | 10 | 49 | | | 15 | 93 |
| **TOTALS** | | 1314 | | 1908 | | | | **3222** | **TOTALS** | | 2516 | | 2166 | | | | **4682** |
| **SPLIT %** | | 40.8% | | 59.2% | | | | **40.8%** | **SPLIT %** | | 53.7% | | 46.3% | | | | **59.2%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,830 | 4,074 | 0 | 0 | 7,904 |

| | NB | SB | EB | WB | TOTAL | | NB | SB | EB | WB | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 07:15 | 06:45 | | | **07:15** | **PM Peak Hour** | 15:45 | 15:30 | | | **16:00** |
| **AM Pk Volume** | 284 | 372 | | | **644** | **PM Pk Volume** | 430 | 301 | | | **723** |
| **Pk Hr Factor** | 0.826 | 0.816 | | | **0.904** | **Pk Hr Factor** | 0.903 | 0.929 | | | **0.937** |
| **7 - 9 Volume** | 445 | 601 | 0 | 0 | **1046** | **4 - 6 Volume** | 785 | 556 | 0 | 0 | **1341** |
| **7 - 9 Peak Hour** | 07:15 | 07:00 | | | **07:15** | **4 - 6 Peak Hour** | 16:00 | 16:00 | | | **16:00** |
| **7 - 9 Pk Volume** | 284 | 371 | 0 | 0 | **644** | **4 - 6 Pk Volume** | 428 | 295 | 0 | 0 | **723** |
| **Pk Hr Factor** | 0.826 | 0.821 | 0.000 | 0.000 | **0.904** | **Pk Hr Factor** | 0.899 | 0.848 | 0.000 | 0.000 | **0.937** |

Prepared by National Data & Surveying Services

# VOLUME

## Maple Ave Bet. Grove Ave & Byrd Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_002

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,814 | 4,245 | 0 | 0 | 8,059 |

| AM Period | NB | | SB | | EB | WB | TOTAL | | PM Period | NB | | SB | | EB | WB | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 13 | | 15 | | | | 28 | | 12:00 | 53 | | 48 | | | | 101 | |
| 00:15 | 5 | | 6 | | | | 11 | | 12:15 | 41 | | 47 | | | | 88 | |
| 00:30 | 9 | | 4 | | | | 13 | | 12:30 | 49 | | 53 | | | | 102 | |
| 00:45 | 5 | 32 | 7 | 32 | | | 12 | 64 | 12:45 | 40 | 183 | 63 | 211 | | | 103 | 394 |
| 01:00 | 6 | | 1 | | | | 7 | | 13:00 | 39 | | 58 | | | | 97 | |
| 01:15 | 6 | | 6 | | | | 12 | | 13:15 | 43 | | 59 | | | | 102 | |
| 01:30 | 6 | | 2 | | | | 8 | | 13:30 | 76 | | 75 | | | | 151 | |
| 01:45 | 1 | 19 | 4 | 13 | | | 5 | 32 | 13:45 | 60 | 218 | 64 | 256 | | | 124 | 474 |
| 02:00 | 4 | | 4 | | | | 8 | | 14:00 | 62 | | 57 | | | | 119 | |
| 02:15 | 6 | | 4 | | | | 10 | | 14:15 | 54 | | 53 | | | | 107 | |
| 02:30 | 7 | | 9 | | | | 16 | | 14:30 | 98 | | 76 | | | | 174 | |
| 02:45 | 11 | 28 | 13 | 30 | | | 24 | 58 | 14:45 | 75 | 289 | 84 | 270 | | | 159 | 559 |
| 03:00 | 6 | | 9 | | | | 15 | | 15:00 | 78 | | 73 | | | | 151 | |
| 03:15 | 6 | | 7 | | | | 13 | | 15:15 | 81 | | 56 | | | | 137 | |
| 03:30 | 6 | | 11 | | | | 17 | | 15:30 | 106 | | 77 | | | | 183 | |
| 03:45 | 10 | 28 | 22 | 49 | | | 32 | 77 | 15:45 | 95 | 360 | 66 | 272 | | | 161 | 632 |
| 04:00 | 8 | | 14 | | | | 22 | | 16:00 | 105 | | 79 | | | | 184 | |
| 04:15 | 10 | | 19 | | | | 29 | | 16:15 | 103 | | 61 | | | | 164 | |
| 04:30 | 15 | | 30 | | | | 45 | | 16:30 | 117 | | 53 | | | | 170 | |
| 04:45 | 13 | 46 | 43 | 106 | | | 56 | 152 | 16:45 | 100 | 425 | 84 | 277 | | | 184 | 702 |
| 05:00 | 10 | | 25 | | | | 35 | | 17:00 | 97 | | 71 | | | | 168 | |
| 05:15 | 14 | | 50 | | | | 64 | | 17:15 | 100 | | 61 | | | | 161 | |
| 05:30 | 18 | | 57 | | | | 75 | | 17:30 | 81 | | 72 | | | | 153 | |
| 05:45 | 17 | 59 | 71 | 203 | | | 88 | 262 | 17:45 | 73 | 351 | 55 | 259 | | | 128 | 610 |
| 06:00 | 25 | | 71 | | | | 96 | | 18:00 | 90 | | 43 | | | | 133 | |
| 06:15 | 18 | | 72 | | | | 90 | | 18:15 | 69 | | 43 | | | | 112 | |
| 06:30 | 29 | | 84 | | | | 113 | | 18:30 | 53 | | 36 | | | | 89 | |
| 06:45 | 30 | 102 | 119 | 346 | | | 149 | 448 | 18:45 | 42 | 254 | 34 | 156 | | | 76 | 410 |
| 07:00 | 30 | | 95 | | | | 125 | | 19:00 | 40 | | 33 | | | | 73 | |
| 07:15 | 66 | | 101 | | | | 167 | | 19:15 | 30 | | 21 | | | | 51 | |
| 07:30 | 72 | | 121 | | | | 193 | | 19:30 | 25 | | 30 | | | | 55 | |
| 07:45 | 57 | 225 | 124 | 441 | | | 181 | 666 | 19:45 | 39 | 134 | 34 | 118 | | | 73 | 252 |
| 08:00 | 51 | | 74 | | | | 125 | | 20:00 | 26 | | 24 | | | | 50 | |
| 08:15 | 53 | | 67 | | | | 120 | | 20:15 | 23 | | 20 | | | | 43 | |
| 08:30 | 34 | | 63 | | | | 97 | | 20:30 | 30 | | 28 | | | | 58 | |
| 08:45 | 35 | 173 | 52 | 256 | | | 87 | 429 | 20:45 | 35 | 114 | 17 | 89 | | | 52 | 203 |
| 09:00 | 41 | | 44 | | | | 85 | | 21:00 | 37 | | 27 | | | | 64 | |
| 09:15 | 49 | | 45 | | | | 94 | | 21:15 | 22 | | 33 | | | | 55 | |
| 09:30 | 48 | | 44 | | | | 92 | | 21:30 | 27 | | 30 | | | | 57 | |
| 09:45 | 45 | 183 | 50 | 183 | | | 95 | 366 | 21:45 | 31 | 117 | 22 | 112 | | | 53 | 229 |
| 10:00 | 48 | | 49 | | | | 97 | | 22:00 | 22 | | 22 | | | | 44 | |
| 10:15 | 41 | | 47 | | | | 88 | | 22:15 | 13 | | 17 | | | | 30 | |
| 10:30 | 31 | | 70 | | | | 101 | | 22:30 | 19 | | 21 | | | | 40 | |
| 10:45 | 34 | 154 | 45 | 211 | | | 79 | 365 | 22:45 | 19 | 73 | 12 | 72 | | | 31 | 145 |
| 11:00 | 56 | | 52 | | | | 108 | | 23:00 | 17 | | 16 | | | | 33 | |
| 11:15 | 48 | | 66 | | | | 114 | | 23:15 | 17 | | 12 | | | | 29 | |
| 11:30 | 54 | | 63 | | | | 117 | | 23:30 | 10 | | 13 | | | | 23 | |
| 11:45 | 39 | 197 | 52 | 233 | | | 91 | 430 | 23:45 | 6 | 50 | 9 | 50 | | | 15 | 100 |
| **TOTALS** | | 1246 | | 2103 | | | | **3349** | **TOTALS** | | 2568 | | 2142 | | | | **4710** |
| **SPLIT %** | | 37.2% | | 62.8% | | | | **41.6%** | **SPLIT %** | | 54.5% | | 45.5% | | | | **58.4%** |



| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 3,814 | 4,245 | 0 | 0 | 8,059 |



| | NB | SB | EB | WB | TOTAL | | NB | SB | EB | WB | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 07:15 | 07:00 | | | **07:00** | **PM Peak Hour** | 16:00 | 14:45 | | | **16:00** |
| **AM Pk Volume** | 246 | 441 | | | **666** | **PM Pk Volume** | 425 | 290 | | | **702** |
| **Pk Hr Factor** | 0.854 | 0.889 | | | **0.863** | **Pk Hr Factor** | 0.908 | 0.863 | | | **0.954** |
| **7 - 9 Volume** | 398 | 697 | 0 | 0 | **1095** | **4 - 6 Volume** | 776 | 536 | 0 | 0 | **1312** |
| **7 - 9 Peak Hour** | 07:15 | 07:00 | | | **07:00** | **4 - 6 Peak Hour** | 16:00 | 16:45 | | | **16:00** |
| **7 - 9 Pk Volume** | 246 | 441 | 0 | 0 | **666** | **4 - 6 Pk Volume** | 425 | 288 | 0 | 0 | **702** |
| **Pk Hr Factor** | 0.854 | 0.889 | 0.000 | 0.000 | **0.863** | **Pk Hr Factor** | 0.908 | 0.857 | 0.000 | 0.000 | **0.954** |

Prepared by National Data & Surveying Services

# VOLUME

## Maple Ave Bet. Date Ave & Annadale Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_003

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 2,083 | 1,798 | 0 | 0 | 3,881 |

| AM Period | NB | | SB | | EB | WB | TOTAL | | PM Period | NB | | SB | | EB | WB | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 4 | | 2 | | | | 6 | | 12:00 | 42 | | 22 | | | | 64 | |
| 00:15 | 4 | | 3 | | | | 7 | | 12:15 | 26 | | 38 | | | | 64 | |
| 00:30 | 4 | | 6 | | | | 10 | | 12:30 | 31 | | 20 | | | | 51 | |
| 00:45 | 4 | 16 | 12 | 23 | | | 16 | 39 | 12:45 | 43 | 142 | 25 | 105 | | | 68 | 247 |
| 01:00 | 3 | | 2 | | | | 5 | | 13:00 | 31 | | 22 | | | | 53 | |
| 01:15 | 2 | | 1 | | | | 3 | | 13:15 | 39 | | 23 | | | | 62 | |
| 01:30 | 5 | | 2 | | | | 7 | | 13:30 | 46 | | 45 | | | | 91 | |
| 01:45 | 3 | 13 | 0 | 5 | | | 3 | 18 | 13:45 | 27 | 143 | 38 | 128 | | | 65 | 271 |
| 02:00 | 6 | | 4 | | | | 10 | | 14:00 | 32 | | 18 | | | | 50 | |
| 02:15 | 6 | | 2 | | | | 8 | | 14:15 | 40 | | 29 | | | | 69 | |
| 02:30 | 11 | | 8 | | | | 19 | | 14:30 | 70 | | 32 | | | | 102 | |
| 02:45 | 10 | 33 | 5 | 19 | | | 15 | 52 | 14:45 | 45 | 187 | 24 | 103 | | | 69 | 290 |
| 03:00 | 6 | | 5 | | | | 11 | | 15:00 | 66 | | 30 | | | | 96 | |
| 03:15 | 6 | | 7 | | | | 13 | | 15:15 | 45 | | 18 | | | | 63 | |
| 03:30 | 3 | | 15 | | | | 18 | | 15:30 | 66 | | 20 | | | | 86 | |
| 03:45 | 6 | 21 | 29 | 56 | | | 35 | 77 | 15:45 | 66 | 243 | 24 | 92 | | | 90 | 335 |
| 04:00 | 11 | | 8 | | | | 19 | | 16:00 | 50 | | 37 | | | | 87 | |
| 04:15 | 5 | | 10 | | | | 15 | | 16:15 | 30 | | 42 | | | | 72 | |
| 04:30 | 6 | | 13 | | | | 19 | | 16:30 | 92 | | 20 | | | | 112 | |
| 04:45 | 9 | 31 | 29 | 60 | | | 38 | 91 | 16:45 | 50 | 222 | 14 | 113 | | | 64 | 335 |
| 05:00 | 4 | | 15 | | | | 19 | | 17:00 | 56 | | 31 | | | | 87 | |
| 05:15 | 5 | | 13 | | | | 18 | | 17:15 | 52 | | 16 | | | | 68 | |
| 05:30 | 5 | | 25 | | | | 30 | | 17:30 | 45 | | 13 | | | | 58 | |
| 05:45 | 13 | 27 | 48 | 101 | | | 61 | 128 | 17:45 | 20 | 173 | 17 | 77 | | | 37 | 250 |
| 06:00 | 15 | | 23 | | | | 38 | | 18:00 | 34 | | 11 | | | | 45 | |
| 06:15 | 12 | | 25 | | | | 37 | | 18:15 | 13 | | 11 | | | | 24 | |
| 06:30 | 19 | | 31 | | | | 50 | | 18:30 | 15 | | 13 | | | | 28 | |
| 06:45 | 24 | 70 | 52 | 131 | | | 76 | 201 | 18:45 | 20 | 82 | 5 | 40 | | | 25 | 122 |
| 07:00 | 19 | | 37 | | | | 56 | | 19:00 | 16 | | 6 | | | | 22 | |
| 07:15 | 20 | | 43 | | | | 63 | | 19:15 | 10 | | 5 | | | | 15 | |
| 07:30 | 15 | | 46 | | | | 61 | | 19:30 | 14 | | 11 | | | | 25 | |
| 07:45 | 31 | 85 | 70 | 196 | | | 101 | 281 | 19:45 | 11 | 51 | 4 | 26 | | | 15 | 77 |
| 08:00 | 23 | | 36 | | | | 59 | | 20:00 | 8 | | 3 | | | | 11 | |
| 08:15 | 21 | | 40 | | | | 61 | | 20:15 | 7 | | 7 | | | | 14 | |
| 08:30 | 32 | | 30 | | | | 62 | | 20:30 | 9 | | 7 | | | | 16 | |
| 08:45 | 34 | 110 | 24 | 130 | | | 58 | 240 | 20:45 | 4 | 28 | 2 | 19 | | | 6 | 47 |
| 09:00 | 23 | | 22 | | | | 45 | | 21:00 | 3 | | 8 | | | | 11 | |
| 09:15 | 35 | | 35 | | | | 70 | | 21:15 | 3 | | 5 | | | | 8 | |
| 09:30 | 26 | | 28 | | | | 54 | | 21:30 | 9 | | 6 | | | | 15 | |
| 09:45 | 17 | 101 | 23 | 108 | | | 40 | 209 | 21:45 | 17 | 32 | 3 | 22 | | | 20 | 54 |
| 10:00 | 32 | | 22 | | | | 54 | | 22:00 | 5 | | 3 | | | | 8 | |
| 10:15 | 28 | | 31 | | | | 59 | | 22:15 | 3 | | 1 | | | | 4 | |
| 10:30 | 29 | | 20 | | | | 49 | | 22:30 | 6 | | 4 | | | | 10 | |
| 10:45 | 17 | 106 | 28 | 101 | | | 45 | 207 | 22:45 | 2 | 16 | 2 | 10 | | | 4 | 26 |
| 11:00 | 21 | | 33 | | | | 54 | | 23:00 | 4 | | 2 | | | | 6 | |
| 11:15 | 36 | | 28 | | | | 64 | | 23:15 | 6 | | 2 | | | | 8 | |
| 11:30 | 56 | | 35 | | | | 91 | | 23:30 | 2 | | 1 | | | | 3 | |
| 11:45 | 25 | 138 | 31 | 127 | | | 56 | 265 | 23:45 | 1 | 13 | 1 | 6 | | | 2 | 19 |
| TOTALS | | 751 | | 1057 | | | | 1808 | TOTALS | | 1332 | | 741 | | | | 2073 |
| SPLIT % | | 41.5% | | 58.5% | | | | 46.6% | SPLIT % | | 64.3% | | 35.7% | | | | 53.4% |


| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 2,083 | 1,798 | 0 | 0 | 3,881 |


| | NB | SB | EB | WB | Total | | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | 11:15 | 07:00 | | | 07:15 | PM Peak Hour | 16:30 | 13:30 | | | 15:45 |
| AM Pk Volume | 159 | 196 | | | 284 | PM Pk Volume | 250 | 130 | | | 361 |
| Pk Hr Factor | 0.710 | 0.700 | | | 0.703 | Pk Hr Factor | 0.679 | 0.722 | | | 0.806 |
| 7 - 9 Volume | 195 | 326 | 0 | 0 | 521 | 4 - 6 Volume | 395 | 190 | 0 | 0 | 585 |
| 7 - 9 Peak Hour | 08:00 | 07:00 | | | 07:15 | 4 - 6 Peak Hour | 16:30 | 16:00 | | | 16:00 |
| 7 - 9 Pk Volume | 110 | 196 | 0 | 0 | 284 | 4 - 6 Pk Volume | 250 | 113 | 0 | 0 | 335 |
| Pk Hr Factor | 0.809 | 0.700 | 0.000 | 0.000 | 0.703 | Pk Hr Factor | 0.679 | 0.673 | 0.000 | 0.000 | 0.748 |

Prepared by National Data & Surveying Services

# VOLUME

## Maple Ave Bet. Annadale Ave & Commerce Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_004

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 2,496 | 2,370 | 0 | 0 | 4,866 |

| AM Period | NB | | SB | | EB | WB | TOTAL | | PM Period | NB | | SB | | EB | WB | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 5 | | 5 | | | | 10 | | 12:00 | 49 | | 34 | | | | 83 | |
| 00:15 | 1 | | 3 | | | | 4 | | 12:15 | 27 | | 49 | | | | 76 | |
| 00:30 | 3 | | 9 | | | | 12 | | 12:30 | 41 | | 31 | | | | 72 | |
| 00:45 | 3 | 12 | 20 | 37 | | | 23 | 49 | 12:45 | 40 | 157 | 30 | 144 | | | 70 | 301 |
| 01:00 | 2 | | 4 | | | | 6 | | 13:00 | 35 | | 35 | | | | 70 | |
| 01:15 | 4 | | 2 | | | | 6 | | 13:15 | 50 | | 29 | | | | 79 | |
| 01:30 | 2 | | 2 | | | | 4 | | 13:30 | 44 | | 56 | | | | 100 | |
| 01:45 | 3 | 11 | 3 | 11 | | | 6 | 22 | 13:45 | 25 | 154 | 51 | 171 | | | 76 | 325 |
| 02:00 | 8 | | 6 | | | | 14 | | 14:00 | 59 | | 31 | | | | 90 | |
| 02:15 | 10 | | 4 | | | | 14 | | 14:15 | 55 | | 49 | | | | 104 | |
| 02:30 | 4 | | 10 | | | | 14 | | 14:30 | 82 | | 47 | | | | 129 | |
| 02:45 | 9 | 31 | 10 | 30 | | | 19 | 61 | 14:45 | 62 | 258 | 24 | 151 | | | 86 | 409 |
| 03:00 | 5 | | 8 | | | | 13 | | 15:00 | 73 | | 37 | | | | 110 | |
| 03:15 | 4 | | 12 | | | | 16 | | 15:15 | 56 | | 30 | | | | 86 | |
| 03:30 | 5 | | 17 | | | | 22 | | 15:30 | 68 | | 35 | | | | 103 | |
| 03:45 | 7 | 21 | 30 | 67 | | | 37 | 88 | 15:45 | 72 | 269 | 33 | 135 | | | 105 | 404 |
| 04:00 | 7 | | 12 | | | | 19 | | 16:00 | 62 | | 36 | | | | 98 | |
| 04:15 | 7 | | 15 | | | | 22 | | 16:15 | 47 | | 37 | | | | 84 | |
| 04:30 | 3 | | 12 | | | | 15 | | 16:30 | 89 | | 31 | | | | 120 | |
| 04:45 | 16 | 33 | 24 | 63 | | | 40 | 96 | 16:45 | 56 | 254 | 28 | 132 | | | 84 | 386 |
| 05:00 | 10 | | 15 | | | | 25 | | 17:00 | 67 | | 35 | | | | 102 | |
| 05:15 | 12 | | 18 | | | | 30 | | 17:15 | 58 | | 23 | | | | 81 | |
| 05:30 | 11 | | 38 | | | | 49 | | 17:30 | 61 | | 17 | | | | 78 | |
| 05:45 | 21 | 54 | 58 | 129 | | | 79 | 183 | 17:45 | 26 | 212 | 20 | 95 | | | 46 | 307 |
| 06:00 | 13 | | 38 | | | | 51 | | 18:00 | 33 | | 12 | | | | 45 | |
| 06:15 | 18 | | 47 | | | | 65 | | 18:15 | 14 | | 17 | | | | 31 | |
| 06:30 | 26 | | 43 | | | | 69 | | 18:30 | 17 | | 24 | | | | 41 | |
| 06:45 | 41 | 98 | 58 | 186 | | | 99 | 284 | 18:45 | 24 | 88 | 20 | 73 | | | 44 | 161 |
| 07:00 | 27 | | 49 | | | | 76 | | 19:00 | 17 | | 10 | | | | 27 | |
| 07:15 | 24 | | 46 | | | | 70 | | 19:15 | 10 | | 8 | | | | 18 | |
| 07:30 | 34 | | 56 | | | | 90 | | 19:30 | 15 | | 13 | | | | 28 | |
| 07:45 | 28 | 113 | 78 | 229 | | | 106 | 342 | 19:45 | 18 | 60 | 7 | 38 | | | 25 | 98 |
| 08:00 | 30 | | 46 | | | | 76 | | 20:00 | 9 | | 4 | | | | 13 | |
| 08:15 | 28 | | 42 | | | | 70 | | 20:15 | 5 | | 8 | | | | 13 | |
| 08:30 | 37 | | 28 | | | | 65 | | 20:30 | 9 | | 10 | | | | 19 | |
| 08:45 | 43 | 138 | 35 | 151 | | | 78 | 289 | 20:45 | 8 | 31 | 5 | 27 | | | 13 | 58 |
| 09:00 | 26 | | 27 | | | | 53 | | 21:00 | 4 | | 7 | | | | 11 | |
| 09:15 | 34 | | 32 | | | | 66 | | 21:15 | 4 | | 3 | | | | 7 | |
| 09:30 | 27 | | 33 | | | | 60 | | 21:30 | 13 | | 5 | | | | 18 | |
| 09:45 | 24 | 111 | 41 | 133 | | | 65 | 244 | 21:45 | 20 | 41 | 5 | 20 | | | 25 | 61 |
| 10:00 | 38 | | 28 | | | | 66 | | 22:00 | 3 | | 8 | | | | 11 | |
| 10:15 | 29 | | 37 | | | | 66 | | 22:15 | 6 | | 2 | | | | 8 | |
| 10:30 | 33 | | 28 | | | | 61 | | 22:30 | 4 | | 4 | | | | 8 | |
| 10:45 | 33 | 133 | 44 | 137 | | | 77 | 270 | 22:45 | 2 | 15 | 4 | 18 | | | 6 | 33 |
| 11:00 | 32 | | 50 | | | | 82 | | 23:00 | 2 | | 4 | | | | 6 | |
| 11:15 | 48 | | 35 | | | | 83 | | 23:15 | 10 | | 2 | | | | 12 | |
| 11:30 | 70 | | 46 | | | | 116 | | 23:30 | 2 | | 5 | | | | 7 | |
| 11:45 | 36 | 186 | 47 | 178 | | | 83 | 364 | 23:45 | 2 | 16 | 4 | 15 | | | 6 | 31 |
| **TOTALS** | | 941 | | 1351 | | | | **2292** | **TOTALS** | | 1555 | | 1019 | | | | **2574** |
| **SPLIT %** | | 41.1% | | 58.9% | | | | **47.1%** | **SPLIT %** | | 60.4% | | 39.6% | | | | **52.9%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 2,496 | 2,370 | 0 | 0 | 4,866 |

| | NB | SB | EB | WB | Total | | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 11:15 | 07:00 | | | **11:15** | **PM Peak Hour** | 14:30 | 13:30 | | | **14:15** |
| **AM Pk Volume** | 203 | 229 | | | **365** | **PM Pk Volume** | 273 | 187 | | | **429** |
| **Pk Hr Factor** | 0.725 | 0.734 | | | **0.787** | **Pk Hr Factor** | 0.832 | 0.835 | | | **0.831** |
| **7 - 9 Volume** | 251 | 380 | 0 | 0 | **631** | **4 - 6 Volume** | 466 | 227 | 0 | 0 | **693** |
| **7 - 9 Peak Hour** | 08:00 | 07:00 | | | **07:00** | **4 - 6 Peak Hour** | 16:30 | 16:00 | | | **16:15** |
| **7 - 9 Pk Volume** | 138 | 229 | 0 | 0 | **342** | **4 - 6 Pk Volume** | 270 | 132 | 0 | 0 | **390** |
| **Pk Hr Factor** | 0.802 | 0.734 | 0.000 | 0.000 | **0.807** | **Pk Hr Factor** | 0.758 | 0.892 | 0.000 | 0.000 | **0.813** |

Prepared by National Data & Surveying Services

# VOLUME

## Maple Ave Bet. Edgar Ave & North Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_005

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 2,351 | 2,139 | 0 | 0 | 4,490 |

| AM Period | NB | | SB | | EB | WB | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| 00:00 | 4 | | 4 | | | | 8 | |
| 00:15 | 3 | | 3 | | | | 6 | |
| 00:30 | 5 | | 7 | | | | 12 | |
| 00:45 | 5 | 17 | 2 | 16 | | | 7 | 33 |
| 01:00 | 2 | | 2 | | | | 4 | |
| 01:15 | 4 | | 1 | | | | 5 | |
| 01:30 | 1 | | 0 | | | | 1 | |
| 01:45 | 3 | 10 | 2 | 5 | | | 5 | 15 |
| 02:00 | 8 | | 3 | | | | 11 | |
| 02:15 | 12 | | 1 | | | | 13 | |
| 02:30 | 9 | | 5 | | | | 14 | |
| 02:45 | 16 | 45 | 13 | 22 | | | 29 | 67 |
| 03:00 | 12 | | 5 | | | | 17 | |
| 03:15 | 10 | | 6 | | | | 16 | |
| 03:30 | 16 | | 11 | | | | 27 | |
| 03:45 | 16 | 54 | 12 | 34 | | | 28 | 88 |
| 04:00 | 13 | | 7 | | | | 20 | |
| 04:15 | 8 | | 10 | | | | 18 | |
| 04:30 | 10 | | 8 | | | | 18 | |
| 04:45 | 17 | 48 | 13 | 38 | | | 30 | 86 |
| 05:00 | 10 | | 7 | | | | 17 | |
| 05:15 | 11 | | 10 | | | | 21 | |
| 05:30 | 16 | | 25 | | | | 41 | |
| 05:45 | 28 | 65 | 22 | 64 | | | 50 | 129 |
| 06:00 | 21 | | 16 | | | | 37 | |
| 06:15 | 31 | | 17 | | | | 48 | |
| 06:30 | 27 | | 24 | | | | 51 | |
| 06:45 | 49 | 128 | 37 | 94 | | | 86 | 222 |
| 07:00 | 37 | | 33 | | | | 70 | |
| 07:15 | 31 | | 39 | | | | 70 | |
| 07:30 | 28 | | 45 | | | | 73 | |
| 07:45 | 44 | 140 | 57 | 174 | | | 101 | 314 |
| 08:00 | 35 | | 23 | | | | 58 | |
| 08:15 | 26 | | 34 | | | | 60 | |
| 08:30 | 38 | | 28 | | | | 66 | |
| 08:45 | 47 | 146 | 37 | 122 | | | 84 | 268 |
| 09:00 | 21 | | 22 | | | | 43 | |
| 09:15 | 34 | | 33 | | | | 67 | |
| 09:30 | 27 | | 34 | | | | 61 | |
| 09:45 | 31 | 113 | 35 | 124 | | | 66 | 237 |
| 10:00 | 29 | | 25 | | | | 54 | |
| 10:15 | 36 | | 37 | | | | 73 | |
| 10:30 | 39 | | 35 | | | | 74 | |
| 10:45 | 35 | 139 | 25 | 122 | | | 60 | 261 |
| 11:00 | 26 | | 57 | | | | 83 | |
| 11:15 | 41 | | 36 | | | | 77 | |
| 11:30 | 38 | | 38 | | | | 76 | |
| 11:45 | 47 | 152 | 29 | 160 | | | 76 | 312 |
| **TOTALS** | | 1057 | | 975 | | | | **2032** |
| **SPLIT %** | | 52.0% | | 48.0% | | | | **45.3%** |

| PM Period | NB | | SB | | EB | WB | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| 12:00 | 36 | | 33 | | | | 69 | |
| 12:15 | 31 | | 49 | | | | 80 | |
| 12:30 | 38 | | 27 | | | | 65 | |
| 12:45 | 40 | 145 | 44 | 153 | | | 84 | 298 |
| 13:00 | 37 | | 34 | | | | 71 | |
| 13:15 | 47 | | 26 | | | | 73 | |
| 13:30 | 41 | | 45 | | | | 86 | |
| 13:45 | 22 | 147 | 48 | 153 | | | 70 | 300 |
| 14:00 | 58 | | 46 | | | | 104 | |
| 14:15 | 54 | | 49 | | | | 103 | |
| 14:30 | 53 | | 54 | | | | 107 | |
| 14:45 | 63 | 228 | 29 | 178 | | | 92 | 406 |
| 15:00 | 50 | | 76 | | | | 126 | |
| 15:15 | 64 | | 44 | | | | 108 | |
| 15:30 | 53 | | 46 | | | | 99 | |
| 15:45 | 65 | 232 | 35 | 201 | | | 100 | 433 |
| 16:00 | 54 | | 59 | | | | 113 | |
| 16:15 | 33 | | 50 | | | | 83 | |
| 16:30 | 58 | | 44 | | | | 102 | |
| 16:45 | 41 | 186 | 35 | 188 | | | 76 | 374 |
| 17:00 | 44 | | 42 | | | | 86 | |
| 17:15 | 38 | | 27 | | | | 65 | |
| 17:30 | 48 | | 21 | | | | 69 | |
| 17:45 | 24 | 154 | 15 | 105 | | | 39 | 259 |
| 18:00 | 28 | | 20 | | | | 48 | |
| 18:15 | 10 | | 14 | | | | 24 | |
| 18:30 | 14 | | 23 | | | | 37 | |
| 18:45 | 17 | 69 | 9 | 66 | | | 26 | 135 |
| 19:00 | 16 | | 8 | | | | 24 | |
| 19:15 | 9 | | 10 | | | | 19 | |
| 19:30 | 12 | | 13 | | | | 25 | |
| 19:45 | 13 | 50 | 10 | 41 | | | 23 | 91 |
| 20:00 | 5 | | 4 | | | | 9 | |
| 20:15 | 8 | | 7 | | | | 15 | |
| 20:30 | 9 | | 8 | | | | 17 | |
| 20:45 | 4 | 26 | 5 | 24 | | | 9 | 50 |
| 21:00 | 8 | | 7 | | | | 15 | |
| 21:15 | 4 | | 4 | | | | 8 | |
| 21:30 | 7 | | 3 | | | | 10 | |
| 21:45 | 3 | 22 | 4 | 18 | | | 7 | 40 |
| 22:00 | 3 | | 5 | | | | 8 | |
| 22:15 | 10 | | 7 | | | | 17 | |
| 22:30 | 6 | | 5 | | | | 11 | |
| 22:45 | 4 | 23 | 6 | 23 | | | 10 | 46 |
| 23:00 | 2 | | 2 | | | | 4 | |
| 23:15 | 4 | | 4 | | | | 8 | |
| 23:30 | 1 | | 5 | | | | 6 | |
| 23:45 | 5 | 12 | 3 | 14 | | | 8 | 26 |
| **TOTALS** | | 1294 | | 1164 | | | | **2458** |
| **SPLIT %** | | 52.6% | | 47.4% | | | | **54.7%** |


| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 2,351 | 2,139 | 0 | 0 | 4,490 |


| | NB | SB | EB | WB | Total | | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 11:15 | 07:00 | | | **07:00** | **PM Peak Hour** | 15:15 | 14:15 | | | **14:30** |
| **AM Pk Volume** | 162 | 174 | | | **314** | **PM Pk Volume** | 236 | 208 | | | **433** |
| **Pk Hr Factor** | 0.862 | 0.763 | | | **0.777** | **Pk Hr Factor** | 0.908 | 0.684 | | | **0.859** |
| **7 - 9 Volume** | 286 | 296 | 0 | 0 | **582** | **4 - 6 Volume** | 340 | 293 | 0 | 0 | **633** |
| **7 - 9 Peak Hour** | 08:00 | 07:00 | | | **07:00** | **4 - 6 Peak Hour** | 16:00 | 16:00 | | | **16:00** |
| **7 - 9 Pk Volume** | 146 | 174 | 0 | 0 | **314** | **4 - 6 Pk Volume** | 186 | 188 | 0 | 0 | **374** |
| **Pk Hr Factor** | 0.777 | 0.763 | 0.000 | 0.000 | **0.777** | **Pk Hr Factor** | 0.802 | 0.797 | 0.000 | 0.000 | **0.827** |

Prepared by National Data & Surveying Services

# VOLUME

## Chestnut Ave Bet. Geary St & Florence Ave

**Day:** Tuesday | **City:** Fresno
**Date:** 1/14/2020 | **Project #:** CA20_7012_006

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 7,631 | 7,598 | 0 | 0 | 15,229 |

| AM Period | NB | | SB | | EB | WB | TOTAL | | PM Period | NB | | SB | | EB | WB | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 11 | | 19 | | | | 30 | | 12:00 | 110 | | 106 | | | | 216 | |
| 00:15 | 12 | | 18 | | | | 30 | | 12:15 | 96 | | 127 | | | | 223 | |
| 00:30 | 10 | | 11 | | | | 21 | | 12:30 | 103 | | 129 | | | | 232 | |
| 00:45 | 10 | 43 | 7 | 55 | | | 17 | 98 | 12:45 | 103 | 412 | 101 | 463 | | | 204 | 875 |
| 01:00 | 12 | | 5 | | | | 17 | | 13:00 | 137 | | 101 | | | | 238 | |
| 01:15 | 11 | | 5 | | | | 16 | | 13:15 | 111 | | 130 | | | | 241 | |
| 01:30 | 6 | | 6 | | | | 12 | | 13:30 | 115 | | 131 | | | | 246 | |
| 01:45 | 7 | 36 | 4 | 20 | | | 11 | 56 | 13:45 | 133 | 496 | 106 | 468 | | | 239 | 964 |
| 02:00 | 8 | | 7 | | | | 15 | | 14:00 | 115 | | 122 | | | | 237 | |
| 02:15 | 4 | | 5 | | | | 9 | | 14:15 | 133 | | 165 | | | | 298 | |
| 02:30 | 3 | | 10 | | | | 13 | | 14:30 | 152 | | 149 | | | | 301 | |
| 02:45 | 10 | 25 | 7 | 29 | | | 17 | 54 | 14:45 | 186 | 586 | 156 | 592 | | | 342 | 1178 |
| 03:00 | 9 | | 7 | | | | 16 | | 15:00 | 139 | | 132 | | | | 271 | |
| 03:15 | 14 | | 17 | | | | 31 | | 15:15 | 140 | | 153 | | | | 293 | |
| 03:30 | 11 | | 12 | | | | 23 | | 15:30 | 146 | | 131 | | | | 277 | |
| 03:45 | 18 | 52 | 20 | 56 | | | 38 | 108 | 15:45 | 154 | 579 | 143 | 559 | | | 297 | 1138 |
| 04:00 | 14 | | 14 | | | | 28 | | 16:00 | 169 | | 141 | | | | 310 | |
| 04:15 | 10 | | 18 | | | | 28 | | 16:15 | 178 | | 131 | | | | 309 | |
| 04:30 | 16 | | 26 | | | | 42 | | 16:30 | 190 | | 130 | | | | 320 | |
| 04:45 | 21 | 61 | 22 | 80 | | | 43 | 141 | 16:45 | 208 | 745 | 174 | 576 | | | 382 | 1321 |
| 05:00 | 26 | | 31 | | | | 57 | | 17:00 | 207 | | 177 | | | | 384 | |
| 05:15 | 38 | | 35 | | | | 73 | | 17:15 | 198 | | 159 | | | | 357 | |
| 05:30 | 40 | | 76 | | | | 116 | | 17:30 | 152 | | 150 | | | | 302 | |
| 05:45 | 53 | 157 | 84 | 226 | | | 137 | 383 | 17:45 | 179 | 736 | 144 | 630 | | | 323 | 1366 |
| 06:00 | 44 | | 71 | | | | 115 | | 18:00 | 171 | | 126 | | | | 297 | |
| 06:15 | 48 | | 108 | | | | 156 | | 18:15 | 110 | | 125 | | | | 235 | |
| 06:30 | 63 | | 111 | | | | 174 | | 18:30 | 119 | | 103 | | | | 222 | |
| 06:45 | 75 | 230 | 105 | 395 | | | 180 | 625 | 18:45 | 93 | 493 | 103 | 457 | | | 196 | 950 |
| 07:00 | 84 | | 63 | | | | 147 | | 19:00 | 84 | | 95 | | | | 179 | |
| 07:15 | 110 | | 97 | | | | 207 | | 19:15 | 72 | | 83 | | | | 155 | |
| 07:30 | 181 | | 161 | | | | 342 | | 19:30 | 57 | | 81 | | | | 138 | |
| 07:45 | 163 | 538 | 173 | 494 | | | 336 | 1032 | 19:45 | 80 | 293 | 81 | 340 | | | 161 | 633 |
| 08:00 | 141 | | 121 | | | | 262 | | 20:00 | 56 | | 84 | | | | 140 | |
| 08:15 | 101 | | 95 | | | | 196 | | 20:15 | 47 | | 59 | | | | 106 | |
| 08:30 | 103 | | 80 | | | | 183 | | 20:30 | 44 | | 74 | | | | 118 | |
| 08:45 | 106 | 451 | 83 | 379 | | | 189 | 830 | 20:45 | 58 | 205 | 67 | 284 | | | 125 | 489 |
| 09:00 | 114 | | 84 | | | | 198 | | 21:00 | 45 | | 69 | | | | 114 | |
| 09:15 | 94 | | 103 | | | | 197 | | 21:15 | 44 | | 63 | | | | 107 | |
| 09:30 | 87 | | 74 | | | | 161 | | 21:30 | 41 | | 46 | | | | 87 | |
| 09:45 | 92 | 387 | 71 | 332 | | | 163 | 719 | 21:45 | 34 | 164 | 43 | 221 | | | 77 | 385 |
| 10:00 | 89 | | 71 | | | | 160 | | 22:00 | 16 | | 40 | | | | 56 | |
| 10:15 | 87 | | 76 | | | | 163 | | 22:15 | 25 | | 32 | | | | 57 | |
| 10:30 | 77 | | 101 | | | | 178 | | 22:30 | 27 | | 22 | | | | 49 | |
| 10:45 | 105 | 358 | 106 | 354 | | | 211 | 712 | 22:45 | 28 | 96 | 25 | 119 | | | 53 | 215 |
| 11:00 | 98 | | 107 | | | | 205 | | 23:00 | 15 | | 28 | | | | 43 | |
| 11:15 | 112 | | 95 | | | | 207 | | 23:15 | 13 | | 11 | | | | 24 | |
| 11:30 | 113 | | 94 | | | | 207 | | 23:30 | 25 | | 19 | | | | 44 | |
| 11:45 | 103 | 426 | 90 | 386 | | | 193 | 812 | 23:45 | 9 | 62 | 25 | 83 | | | 34 | 145 |
| **TOTALS** | | 2764 | | 2806 | | | | **5570** | **TOTALS** | | 4867 | | 4792 | | | | **9659** |
| **SPLIT %** | | 49.6% | | 50.4% | | | | **36.6%** | **SPLIT %** | | 50.4% | | 49.6% | | | | **63.4%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 7,631 | 7,598 | 0 | 0 | 15,229 |

| | NB | SB | EB | WB | TOTAL | | NB | SB | EB | WB | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 07:15 | 07:15 | | | **07:15** | **PM Peak Hour** | 16:30 | 16:45 | | | **16:30** |
| **AM Pk Volume** | 595 | 552 | | | **1147** | **PM Pk Volume** | 803 | 660 | | | **1443** |
| **Pk Hr Factor** | 0.822 | 0.798 | | | **0.838** | **Pk Hr Factor** | 0.965 | 0.932 | | | **0.939** |
| **7 - 9 Volume** | 989 | 873 | 0 | 0 | **1862** | **4 - 6 Volume** | 1481 | 1206 | 0 | 0 | **2687** |
| **7 - 9 Peak Hour** | 07:15 | 07:15 | | | **07:15** | **4 - 6 Peak Hour** | 16:30 | 16:45 | | | **16:30** |
| **7 - 9 Pk Volume** | 595 | 552 | 0 | 0 | **1147** | **4 - 6 Pk Volume** | 803 | 660 | 0 | 0 | **1443** |
| **Pk Hr Factor** | 0.822 | 0.798 | 0.000 | 0.000 | **0.838** | **Pk Hr Factor** | 0.965 | 0.932 | 0.000 | 0.000 | **0.939** |

Prepared by National Data & Surveying Services

# VOLUME

## Chestnut Ave Bet. Florence Ave & Hemlock Prvt

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_007

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 7,945 | 7,928 | 0 | 0 | 15,873 |

| AM Period | NB | | SB | | EB | WB | TOTAL | | PM Period | NB | | SB | | EB | WB | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 14 | | 19 | | | | 33 | | 12:00 | 109 | | 107 | | | | 216 | |
| 00:15 | 14 | | 20 | | | | 34 | | 12:15 | 100 | | 121 | | | | 221 | |
| 00:30 | 12 | | 12 | | | | 24 | | 12:30 | 99 | | 127 | | | | 226 | |
| 00:45 | 12 | 52 | 11 | 62 | | | 23 | 114 | 12:45 | 111 | 419 | 107 | 462 | | | 218 | 881 |
| 01:00 | 12 | | 7 | | | | 19 | | 13:00 | 141 | | 102 | | | | 243 | |
| 01:15 | 10 | | 4 | | | | 14 | | 13:15 | 106 | | 137 | | | | 243 | |
| 01:30 | 7 | | 6 | | | | 13 | | 13:30 | 115 | | 131 | | | | 246 | |
| 01:45 | 8 | 37 | 4 | 21 | | | 12 | 58 | 13:45 | 146 | 508 | 105 | 475 | | | 251 | 983 |
| 02:00 | 7 | | 10 | | | | 17 | | 14:00 | 109 | | 113 | | | | 222 | |
| 02:15 | 4 | | 4 | | | | 8 | | 14:15 | 136 | | 162 | | | | 298 | |
| 02:30 | 5 | | 9 | | | | 14 | | 14:30 | 167 | | 150 | | | | 317 | |
| 02:45 | 9 | 25 | 8 | 31 | | | 17 | 56 | 14:45 | 188 | 600 | 166 | 591 | | | 354 | 1191 |
| 03:00 | 13 | | 6 | | | | 19 | | 15:00 | 153 | | 136 | | | | 289 | |
| 03:15 | 15 | | 18 | | | | 33 | | 15:15 | 145 | | 154 | | | | 299 | |
| 03:30 | 12 | | 15 | | | | 27 | | 15:30 | 163 | | 139 | | | | 302 | |
| 03:45 | 17 | 57 | 21 | 60 | | | 38 | 117 | 15:45 | 172 | 633 | 158 | 587 | | | 330 | 1220 |
| 04:00 | 17 | | 13 | | | | 30 | | 16:00 | 177 | | 142 | | | | 319 | |
| 04:15 | 10 | | 21 | | | | 31 | | 16:15 | 206 | | 129 | | | | 335 | |
| 04:30 | 14 | | 28 | | | | 42 | | 16:30 | 205 | | 136 | | | | 341 | |
| 04:45 | 19 | 60 | 26 | 88 | | | 45 | 148 | 16:45 | 216 | 804 | 183 | 590 | | | 399 | 1394 |
| 05:00 | 22 | | 36 | | | | 58 | | 17:00 | 223 | | 185 | | | | 408 | |
| 05:15 | 39 | | 37 | | | | 76 | | 17:15 | 214 | | 169 | | | | 383 | |
| 05:30 | 38 | | 92 | | | | 130 | | 17:30 | 160 | | 152 | | | | 312 | |
| 05:45 | 52 | 151 | 87 | 252 | | | 139 | 403 | 17:45 | 180 | 777 | 139 | 645 | | | 319 | 1422 |
| 06:00 | 46 | | 92 | | | | 138 | | 18:00 | 176 | | 136 | | | | 312 | |
| 06:15 | 48 | | 131 | | | | 179 | | 18:15 | 126 | | 137 | | | | 263 | |
| 06:30 | 57 | | 119 | | | | 176 | | 18:30 | 115 | | 109 | | | | 224 | |
| 06:45 | 66 | 217 | 113 | 455 | | | 179 | 672 | 18:45 | 100 | 517 | 106 | 488 | | | 206 | 1005 |
| 07:00 | 78 | | 98 | | | | 176 | | 19:00 | 84 | | 97 | | | | 181 | |
| 07:15 | 98 | | 106 | | | | 204 | | 19:15 | 76 | | 81 | | | | 157 | |
| 07:30 | 193 | | 175 | | | | 368 | | 19:30 | 65 | | 82 | | | | 147 | |
| 07:45 | 176 | 545 | 176 | 555 | | | 352 | 1100 | 19:45 | 84 | 309 | 91 | 351 | | | 175 | 660 |
| 08:00 | 141 | | 139 | | | | 280 | | 20:00 | 61 | | 81 | | | | 142 | |
| 08:15 | 105 | | 96 | | | | 201 | | 20:15 | 55 | | 64 | | | | 119 | |
| 08:30 | 100 | | 84 | | | | 184 | | 20:30 | 49 | | 77 | | | | 126 | |
| 08:45 | 118 | 464 | 82 | 401 | | | 200 | 865 | 20:45 | 61 | 226 | 60 | 282 | | | 121 | 508 |
| 09:00 | 114 | | 85 | | | | 199 | | 21:00 | 47 | | 67 | | | | 114 | |
| 09:15 | 94 | | 114 | | | | 208 | | 21:15 | 46 | | 61 | | | | 107 | |
| 09:30 | 86 | | 77 | | | | 163 | | 21:30 | 43 | | 49 | | | | 92 | |
| 09:45 | 91 | 385 | 73 | 349 | | | 164 | 734 | 21:45 | 37 | 173 | 44 | 221 | | | 81 | 394 |
| 10:00 | 80 | | 77 | | | | 157 | | 22:00 | 25 | | 43 | | | | 68 | |
| 10:15 | 96 | | 77 | | | | 173 | | 22:15 | 36 | | 32 | | | | 68 | |
| 10:30 | 82 | | 95 | | | | 177 | | 22:30 | 25 | | 23 | | | | 48 | |
| 10:45 | 107 | 365 | 113 | 362 | | | 220 | 727 | 22:45 | 28 | 114 | 26 | 124 | | | 54 | 238 |
| 11:00 | 105 | | 108 | | | | 213 | | 23:00 | 20 | | 27 | | | | 47 | |
| 11:15 | 106 | | 95 | | | | 201 | | 23:15 | 13 | | 13 | | | | 26 | |
| 11:30 | 114 | | 93 | | | | 207 | | 23:30 | 25 | | 20 | | | | 45 | |
| 11:45 | 112 | 437 | 95 | 391 | | | 207 | 828 | 23:45 | 12 | 70 | 25 | 85 | | | 37 | 155 |
| **TOTALS** | | 2795 | | 3027 | | | | **5822** | **TOTALS** | | 5150 | | 4901 | | | | **10051** |
| **SPLIT %** | | 48.0% | | 52.0% | | | | **36.7%** | **SPLIT %** | | 51.2% | | 48.8% | | | | **63.3%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 7,945 | 7,928 | 0 | 0 | 15,873 |

| | NB | SB | EB | WB | TOTAL | | NB | SB | EB | WB | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | 07:30 | 07:15 | | | **07:15** | **PM Peak Hour** | 16:30 | 16:45 | | | **16:30** |
| **AM Pk Volume** | 615 | 596 | | | **1204** | **PM Pk Volume** | 858 | 689 | | | **1531** |
| **Pk Hr Factor** | 0.797 | 0.847 | | | **0.818** | **Pk Hr Factor** | 0.962 | 0.931 | | | **0.938** |
| **7 - 9 Volume** | 1009 | 956 | 0 | 0 | **1965** | **4 - 6 Volume** | 1581 | 1235 | 0 | 0 | **2816** |
| **7 - 9 Peak Hour** | 07:30 | 07:15 | | | **07:15** | **4 - 6 Peak Hour** | 16:30 | 16:45 | | | **16:30** |
| **7 - 9 Pk Volume** | 615 | 596 | 0 | 0 | **1204** | **4 - 6 Pk Volume** | 858 | 689 | 0 | 0 | **1531** |
| **Pk Hr Factor** | 0.797 | 0.847 | 0.000 | 0.000 | **0.818** | **Pk Hr Factor** | 0.962 | 0.931 | 0.000 | 0.000 | **0.938** |

Prepared by National Data & Surveying Services

# VOLUME

## Florence Ave Bet. Whitney Ave & Chestnut Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_008

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 555 | 718 | 1,273 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | | | 0 | | 0 | | 0 | |
| 00:15 | | | | | 1 | | 3 | | 4 | |
| 00:30 | | | | | 0 | | 2 | | 2 | |
| 00:45 | | | | | 2 | 3 | 0 | 5 | 2 | 8 |
| 01:00 | | | | | 2 | | 1 | | 3 | |
| 01:15 | | | | | 1 | | 2 | | 3 | |
| 01:30 | | | | | 0 | | 0 | | 0 | |
| 01:45 | | | | | 1 | 4 | 2 | 5 | 3 | 9 |
| 02:00 | | | | | 1 | | 0 | | 1 | |
| 02:15 | | | | | 1 | | 1 | | 2 | |
| 02:30 | | | | | 0 | | 2 | | 2 | |
| 02:45 | | | | | 0 | 2 | 1 | 4 | 1 | 6 |
| 03:00 | | | | | 0 | | 2 | | 2 | |
| 03:15 | | | | | 0 | | 2 | | 2 | |
| 03:30 | | | | | 0 | | 0 | | 0 | |
| 03:45 | | | | | 1 | 1 | 1 | 5 | 2 | 6 |
| 04:00 | | | | | 0 | | 1 | | 1 | |
| 04:15 | | | | | 0 | | 0 | | 0 | |
| 04:30 | | | | | 1 | | 0 | | 1 | |
| 04:45 | | | | | 1 | 2 | 0 | 1 | 1 | 3 |
| 05:00 | | | | | 4 | | 2 | | 6 | |
| 05:15 | | | | | 2 | | 4 | | 6 | |
| 05:30 | | | | | 1 | | 2 | | 3 | |
| 05:45 | | | | | 0 | 7 | 3 | 11 | 3 | 18 |
| 06:00 | | | | | 4 | | 9 | | 13 | |
| 06:15 | | | | | 2 | | 2 | | 4 | |
| 06:30 | | | | | 4 | | 8 | | 12 | |
| 06:45 | | | | | 7 | 17 | 8 | 27 | 15 | 44 |
| 07:00 | | | | | 8 | | 6 | | 14 | |
| 07:15 | | | | | 12 | | 18 | | 30 | |
| 07:30 | | | | | 16 | | 40 | | 56 | |
| 07:45 | | | | | 13 | 49 | 42 | 106 | 55 | 155 |
| 08:00 | | | | | 21 | | 10 | | 31 | |
| 08:15 | | | | | 2 | | 13 | | 15 | |
| 08:30 | | | | | 4 | | 7 | | 11 | |
| 08:45 | | | | | 6 | 33 | 8 | 38 | 14 | 71 |
| 09:00 | | | | | 3 | | 6 | | 9 | |
| 09:15 | | | | | 8 | | 5 | | 13 | |
| 09:30 | | | | | 6 | | 4 | | 10 | |
| 09:45 | | | | | 3 | 20 | 5 | 20 | 8 | 40 |
| 10:00 | | | | | 8 | | 5 | | 13 | |
| 10:15 | | | | | 4 | | 6 | | 10 | |
| 10:30 | | | | | 4 | | 6 | | 10 | |
| 10:45 | | | | | 3 | 19 | 10 | 27 | 13 | 46 |
| 11:00 | | | | | 11 | | 10 | | 21 | |
| 11:15 | | | | | 7 | | 8 | | 15 | |
| 11:30 | | | | | 10 | | 8 | | 18 | |
| 11:45 | | | | | 7 | 35 | 8 | 34 | 15 | 69 |
| **TOTALS** | | | | | | 192 | | 283 | | **475** |
| **SPLIT %** | | | | | | 40.4% | | 59.6% | | **37.3%** |

| PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 | | | | | 5 | | 4 | | 9 | |
| 12:15 | | | | | 8 | | 10 | | 18 | |
| 12:30 | | | | | 5 | | 10 | | 15 | |
| 12:45 | | | | | 5 | 23 | 8 | 32 | 13 | 55 |
| 13:00 | | | | | 5 | | 11 | | 16 | |
| 13:15 | | | | | 8 | | 12 | | 20 | |
| 13:30 | | | | | 15 | | 17 | | 32 | |
| 13:45 | | | | | 8 | 36 | 10 | 50 | 18 | 86 |
| 14:00 | | | | | 9 | | 18 | | 27 | |
| 14:15 | | | | | 6 | | 22 | | 28 | |
| 14:30 | | | | | 22 | | 23 | | 45 | |
| 14:45 | | | | | 24 | 61 | 15 | 78 | 39 | 139 |
| 15:00 | | | | | 11 | | 13 | | 24 | |
| 15:15 | | | | | 10 | | 8 | | 18 | |
| 15:30 | | | | | 7 | | 9 | | 16 | |
| 15:45 | | | | | 4 | 32 | 7 | 37 | 11 | 69 |
| 16:00 | | | | | 4 | | 16 | | 20 | |
| 16:15 | | | | | 6 | | 11 | | 17 | |
| 16:30 | | | | | 12 | | 16 | | 28 | |
| 16:45 | | | | | 18 | 40 | 17 | 60 | 35 | 100 |
| 17:00 | | | | | 10 | | 12 | | 22 | |
| 17:15 | | | | | 18 | | 13 | | 31 | |
| 17:30 | | | | | 12 | | 11 | | 23 | |
| 17:45 | | | | | 16 | 56 | 13 | 49 | 29 | 105 |
| 18:00 | | | | | 12 | | 10 | | 22 | |
| 18:15 | | | | | 12 | | 13 | | 25 | |
| 18:30 | | | | | 13 | | 10 | | 23 | |
| 18:45 | | | | | 5 | 42 | 6 | 39 | 11 | 81 |
| 19:00 | | | | | 8 | | 7 | | 15 | |
| 19:15 | | | | | 5 | | 8 | | 13 | |
| 19:30 | | | | | 6 | | 11 | | 17 | |
| 19:45 | | | | | 5 | 24 | 4 | 30 | 9 | 54 |
| 20:00 | | | | | 5 | | 6 | | 11 | |
| 20:15 | | | | | 3 | | 5 | | 8 | |
| 20:30 | | | | | 8 | | 4 | | 12 | |
| 20:45 | | | | | 6 | 22 | 7 | 22 | 13 | 44 |
| 21:00 | | | | | 2 | | 6 | | 8 | |
| 21:15 | | | | | 4 | | 1 | | 5 | |
| 21:30 | | | | | 2 | | 4 | | 6 | |
| 21:45 | | | | | 2 | 10 | 4 | 15 | 6 | 25 |
| 22:00 | | | | | 1 | | 2 | | 3 | |
| 22:15 | | | | | 3 | | 6 | | 9 | |
| 22:30 | | | | | 2 | | 1 | | 3 | |
| 22:45 | | | | | 4 | 10 | 3 | 12 | 7 | 22 |
| 23:00 | | | | | 3 | | 4 | | 7 | |
| 23:15 | | | | | 1 | | 1 | | 2 | |
| 23:30 | | | | | 2 | | 3 | | 5 | |
| 23:45 | | | | | 1 | 7 | 3 | 11 | 4 | 18 |
| **TOTALS** | | | | | | 363 | | 435 | | **798** |
| **SPLIT %** | | | | | | 45.5% | | 54.5% | | **62.7%** |


| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 555 | 718 | 1,273 |


| | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| **AM Peak Hour** | | | 07:15 | 07:15 | **07:15** |
| **AM Pk Volume** | | | 62 | 110 | **172** |
| **Pk Hr Factor** | | | 0.738 | 0.655 | **0.768** |
| **7 - 9 Volume** | 0 | 0 | 82 | 144 | **226** |
| **7 - 9 Peak Hour** | | | 07:15 | 07:15 | **07:15** |
| **7 - 9 Pk Volume** | 0 | 0 | 62 | 110 | **172** |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.738 | 0.655 | **0.768** |

| | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| **PM Peak Hour** | | | 14:30 | 14:00 | **14:00** |
| **PM Pk Volume** | | | 67 | 78 | **139** |
| **Pk Hr Factor** | | | 0.698 | 0.848 | **0.772** |
| **4 - 6 Volume** | 0 | 0 | 96 | 109 | **205** |
| **4 - 6 Peak Hour** | | | 16:30 | 16:00 | **16:30** |
| **4 - 6 Pk Volume** | 0 | 0 | 58 | 60 | **116** |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.806 | 0.882 | **0.829** |

Prepared by National Data & Surveying Services

# VOLUME

## Florence Ave 80' E/O Chestnut Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_009

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 451 | 531 | 982 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | | | 0 | | 0 | | 0 | |
| 00:15 | | | | | 1 | | 1 | | 2 | |
| 00:30 | | | | | 1 | | 0 | | 1 | |
| 00:45 | | | | | 0 | 2 | 0 | 1 | 0 | 3 |
| 01:00 | | | | | 0 | | 0 | | 0 | |
| 01:15 | | | | | 0 | | 1 | | 1 | |
| 01:30 | | | | | 1 | | 2 | | 3 | |
| 01:45 | | | | | 0 | 1 | 1 | 4 | 1 | 5 |
| 02:00 | | | | | 0 | | 1 | | 1 | |
| 02:15 | | | | | 0 | | 0 | | 0 | |
| 02:30 | | | | | 0 | | 2 | | 2 | |
| 02:45 | | | | | 0 | | 2 | 5 | 2 | 5 |
| 03:00 | | | | | 2 | | 0 | | 2 | |
| 03:15 | | | | | 0 | | 1 | | 1 | |
| 03:30 | | | | | 0 | | 1 | | 1 | |
| 03:45 | | | | | 0 | 2 | 3 | 5 | 3 | 7 |
| 04:00 | | | | | 2 | | 1 | | 3 | |
| 04:15 | | | | | 0 | | 4 | | 4 | |
| 04:30 | | | | | 0 | | 1 | | 1 | |
| 04:45 | | | | | 0 | 2 | 2 | 8 | 2 | 10 |
| 05:00 | | | | | 3 | | 3 | | 6 | |
| 05:15 | | | | | 1 | | 5 | | 6 | |
| 05:30 | | | | | 3 | | 10 | | 13 | |
| 05:45 | | | | | 1 | 8 | 6 | 24 | 7 | 32 |
| 06:00 | | | | | 1 | | 6 | | 7 | |
| 06:15 | | | | | 0 | | 7 | | 7 | |
| 06:30 | | | | | 1 | | 7 | | 8 | |
| 06:45 | | | | | 4 | 6 | 5 | 25 | 9 | 31 |
| 07:00 | | | | | 2 | | 3 | | 5 | |
| 07:15 | | | | | 3 | | 19 | | 22 | |
| 07:30 | | | | | 11 | | 20 | | 31 | |
| 07:45 | | | | | 11 | 27 | 14 | 56 | 25 | 83 |
| 08:00 | | | | | 4 | | 12 | | 16 | |
| 08:15 | | | | | 6 | | 7 | | 13 | |
| 08:30 | | | | | 2 | | 10 | | 12 | |
| 08:45 | | | | | 5 | 17 | 4 | 33 | 9 | 50 |
| 09:00 | | | | | 2 | | 4 | | 6 | |
| 09:15 | | | | | 2 | | 2 | | 4 | |
| 09:30 | | | | | 5 | | 5 | | 10 | |
| 09:45 | | | | | 6 | 15 | 9 | 20 | 15 | 35 |
| 10:00 | | | | | 2 | | 7 | | 9 | |
| 10:15 | | | | | 2 | | 3 | | 5 | |
| 10:30 | | | | | 5 | | 9 | | 14 | |
| 10:45 | | | | | 2 | 11 | 3 | 22 | 5 | 33 |
| 11:00 | | | | | 5 | | 6 | | 11 | |
| 11:15 | | | | | 4 | | 6 | | 10 | |
| 11:30 | | | | | 4 | | 3 | | 7 | |
| 11:45 | | | | | 6 | 19 | 6 | 21 | 12 | 40 |
| **TOTALS** | | | | | | 110 | | 224 | | **334** |
| **SPLIT %** | | | | | | 32.9% | | 67.1% | | **34.0%** |

| PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 | | | | | 4 | | 3 | | 7 | |
| 12:15 | | | | | 5 | | 4 | | 9 | |
| 12:30 | | | | | 4 | | 5 | | 9 | |
| 12:45 | | | | | 4 | 17 | 6 | 18 | 10 | 35 |
| 13:00 | | | | | 1 | | 6 | | 7 | |
| 13:15 | | | | | 2 | | 9 | | 11 | |
| 13:30 | | | | | 7 | | 12 | | 19 | |
| 13:45 | | | | | 3 | 13 | 6 | 33 | 9 | 46 |
| 14:00 | | | | | 8 | | 7 | | 15 | |
| 14:15 | | | | | 8 | | 11 | | 19 | |
| 14:30 | | | | | 14 | | 9 | | 23 | |
| 14:45 | | | | | 11 | 41 | 16 | 43 | 27 | 84 |
| 15:00 | | | | | 9 | | 8 | | 17 | |
| 15:15 | | | | | 12 | | 6 | | 18 | |
| 15:30 | | | | | 9 | | 11 | | 20 | |
| 15:45 | | | | | 8 | 38 | 12 | 37 | 20 | 75 |
| 16:00 | | | | | 10 | | 6 | | 16 | |
| 16:15 | | | | | 16 | | 7 | | 23 | |
| 16:30 | | | | | 13 | | 11 | | 24 | |
| 16:45 | | | | | 14 | 53 | 7 | 31 | 21 | 84 |
| 17:00 | | | | | 10 | | 8 | | 18 | |
| 17:15 | | | | | 16 | | 9 | | 25 | |
| 17:30 | | | | | 12 | | 7 | | 19 | |
| 17:45 | | | | | 22 | 60 | 8 | 32 | 30 | 92 |
| 18:00 | | | | | 8 | | 16 | | 24 | |
| 18:15 | | | | | 10 | | 11 | | 21 | |
| 18:30 | | | | | 4 | | 7 | | 11 | |
| 18:45 | | | | | 7 | 29 | 4 | 38 | 11 | 67 |
| 19:00 | | | | | 6 | | 4 | | 10 | |
| 19:15 | | | | | 8 | | 8 | | 16 | |
| 19:30 | | | | | 5 | | 5 | | 10 | |
| 19:45 | | | | | 5 | 24 | 7 | 24 | 12 | 48 |
| 20:00 | | | | | 4 | | 3 | | 7 | |
| 20:15 | | | | | 8 | | 7 | | 15 | |
| 20:30 | | | | | 2 | | 3 | | 5 | |
| 20:45 | | | | | 6 | 20 | 2 | 15 | 8 | 35 |
| 21:00 | | | | | 8 | | 3 | | 11 | |
| 21:15 | | | | | 5 | | 6 | | 11 | |
| 21:30 | | | | | 4 | | 4 | | 8 | |
| 21:45 | | | | | 3 | 20 | 5 | 18 | 8 | 38 |
| 22:00 | | | | | 6 | | 2 | | 8 | |
| 22:15 | | | | | 5 | | 4 | | 9 | |
| 22:30 | | | | | 3 | | 2 | | 5 | |
| 22:45 | | | | | 5 | 19 | 4 | 12 | 9 | 31 |
| 23:00 | | | | | 3 | | 3 | | 6 | |
| 23:15 | | | | | 1 | | 1 | | 2 | |
| 23:30 | | | | | 2 | | 2 | | 4 | |
| 23:45 | | | | | 1 | 7 | 0 | 6 | 1 | 13 |
| **TOTALS** | | | | | | 341 | | 307 | | **648** |
| **SPLIT %** | | | | | | 52.6% | | 47.4% | | **66.0%** |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 451 | 531 | 982 |

| | NB | SB | EB | WB | Total | | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM Peak Hour** | | | 07:30 | 07:15 | **07:15** | **PM Peak Hour** | | | 17:00 | 14:15 | **17:15** |
| **AM Pk Volume** | | | 32 | 65 | **94** | **PM Pk Volume** | | | 60 | 44 | **98** |
| **Pk Hr Factor** | | | 0.727 | 0.813 | **0.758** | **Pk Hr Factor** | | | 0.682 | 0.688 | **0.817** |
| **7 - 9 Volume** | 0 | 0 | 44 | 89 | **133** | **4 - 6 Volume** | 0 | 0 | 113 | 63 | **176** |
| **7 - 9 Peak Hour** | | | 07:30 | 07:15 | **07:15** | **4 - 6 Peak Hour** | | | 17:00 | 16:30 | **17:00** |
| **7 - 9 Pk Volume** | 0 | 0 | 32 | 65 | **94** | **4 - 6 Pk Volume** | 0 | 0 | 60 | 35 | **92** |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.727 | 0.813 | **0.758** | **Pk Hr Factor** | 0.000 | 0.000 | 0.682 | 0.795 | **0.767** |

Prepared by National Data & Surveying Services

# VOLUME

## Grove Ave Bet. Maple Ave & Price Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_010

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 692 | 861 | 1,553 |

| AM Period | NB | SB | EB | | WB | | TOTAL | | PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 3 | | 3 | | 6 | | 12:00 | | | 13 | | 11 | | 24 | |
| 00:15 | | | 2 | | 1 | | 3 | | 12:15 | | | 6 | | 7 | | 13 | |
| 00:30 | | | 2 | | 0 | | 2 | | 12:30 | | | 9 | | 22 | | 31 | |
| 00:45 | | | 1 | 8 | 2 | 6 | 3 | 14 | 12:45 | | | 11 | 39 | 7 | 47 | 18 | 86 |
| 01:00 | | | 3 | | 0 | | 3 | | 13:00 | | | 5 | | 8 | | 13 | |
| 01:15 | | | 2 | | 1 | | 3 | | 13:15 | | | 8 | | 10 | | 18 | |
| 01:30 | | | 0 | | 0 | | 0 | | 13:30 | | | 16 | | 10 | | 26 | |
| 01:45 | | | 1 | 6 | 0 | 1 | 1 | 7 | 13:45 | | | 14 | 43 | 15 | 43 | 29 | 86 |
| 02:00 | | | 1 | | 0 | | 1 | | 14:00 | | | 10 | | 9 | | 19 | |
| 02:15 | | | 1 | | 2 | | 3 | | 14:15 | | | 17 | | 11 | | 28 | |
| 02:30 | | | 0 | | 0 | | 0 | | 14:30 | | | 12 | | 19 | | 31 | |
| 02:45 | | | 0 | 2 | 3 | 5 | 3 | 7 | 14:45 | | | 11 | 50 | 10 | 49 | 21 | 99 |
| 03:00 | | | 1 | | 1 | | 2 | | 15:00 | | | 16 | | 12 | | 28 | |
| 03:15 | | | 1 | | 1 | | 2 | | 15:15 | | | 19 | | 11 | | 30 | |
| 03:30 | | | 1 | | 0 | | 1 | | 15:30 | | | 20 | | 16 | | 36 | |
| 03:45 | | | 1 | 4 | 2 | 4 | 3 | 8 | 15:45 | | | 14 | 69 | 15 | 54 | 29 | 123 |
| 04:00 | | | 0 | | 6 | | 6 | | 16:00 | | | 13 | | 16 | | 29 | |
| 04:15 | | | 1 | | 3 | | 4 | | 16:15 | | | 15 | | 20 | | 35 | |
| 04:30 | | | 0 | | 5 | | 5 | | 16:30 | | | 18 | | 17 | | 35 | |
| 04:45 | | | 1 | 2 | 5 | 19 | 6 | 21 | 16:45 | | | 23 | 69 | 21 | 74 | 44 | 143 |
| 05:00 | | | 0 | | 3 | | 3 | | 17:00 | | | 20 | | 17 | | 37 | |
| 05:15 | | | 3 | | 8 | | 11 | | 17:15 | | | 15 | | 14 | | 29 | |
| 05:30 | | | 1 | | 12 | | 13 | | 17:30 | | | 13 | | 25 | | 38 | |
| 05:45 | | | 4 | 8 | 10 | 33 | 14 | 41 | 17:45 | | | 16 | 64 | 17 | 73 | 33 | 137 |
| 06:00 | | | 3 | | 13 | | 16 | | 18:00 | | | 26 | | 20 | | 46 | |
| 06:15 | | | 1 | | 12 | | 13 | | 18:15 | | | 10 | | 19 | | 29 | |
| 06:30 | | | 3 | | 13 | | 16 | | 18:30 | | | 11 | | 8 | | 19 | |
| 06:45 | | | 5 | 12 | 10 | 48 | 15 | 60 | 18:45 | | | 9 | 56 | 8 | 55 | 17 | 111 |
| 07:00 | | | 3 | | 13 | | 16 | | 19:00 | | | 17 | | 6 | | 23 | |
| 07:15 | | | 7 | | 24 | | 31 | | 19:15 | | | 10 | | 8 | | 18 | |
| 07:30 | | | 9 | | 30 | | 39 | | 19:30 | | | 10 | | 8 | | 18 | |
| 07:45 | | | 14 | 33 | 21 | 88 | 35 | 121 | 19:45 | | | 11 | 48 | 12 | 34 | 23 | 82 |
| 08:00 | | | 7 | | 22 | | 29 | | 20:00 | | | 8 | | 4 | | 12 | |
| 08:15 | | | 4 | | 12 | | 16 | | 20:15 | | | 8 | | 3 | | 11 | |
| 08:30 | | | 4 | | 13 | | 17 | | 20:30 | | | 9 | | 9 | | 18 | |
| 08:45 | | | 3 | 18 | 7 | 54 | 10 | 72 | 20:45 | | | 8 | 33 | 5 | 21 | 13 | 54 |
| 09:00 | | | 9 | | 8 | | 17 | | 21:00 | | | 7 | | 5 | | 12 | |
| 09:15 | | | 2 | | 8 | | 10 | | 21:15 | | | 4 | | 4 | | 8 | |
| 09:30 | | | 7 | | 5 | | 12 | | 21:30 | | | 4 | | 5 | | 9 | |
| 09:45 | | | 10 | 28 | 13 | 34 | 23 | 62 | 21:45 | | | 6 | 21 | 2 | 16 | 8 | 37 |
| 10:00 | | | 5 | | 13 | | 18 | | 22:00 | | | 5 | | 2 | | 7 | |
| 10:15 | | | 6 | | 10 | | 16 | | 22:15 | | | 4 | | 2 | | 6 | |
| 10:30 | | | 5 | | 16 | | 21 | | 22:30 | | | 4 | | 1 | | 5 | |
| 10:45 | | | 8 | 24 | 9 | 48 | 17 | 72 | 22:45 | | | 4 | 17 | 1 | 6 | 5 | 23 |
| 11:00 | | | 10 | | 12 | | 22 | | 23:00 | | | 2 | | 1 | | 3 | |
| 11:15 | | | 6 | | 8 | | 14 | | 23:15 | | | 2 | | 5 | | 7 | |
| 11:30 | | | 7 | | 11 | | 18 | | 23:30 | | | 3 | | 4 | | 7 | |
| 11:45 | | | 7 | 30 | 7 | 38 | 14 | 68 | 23:45 | | | 1 | 8 | 1 | 11 | 2 | 19 |
| TOTALS | | | | 175 | | 378 | | 553 | TOTALS | | | | 517 | | 483 | | 1000 |
| SPLIT % | | | | 31.6% | | 68.4% | | 35.6% | SPLIT % | | | | 51.7% | | 48.3% | | 64.4% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 692 | 861 | 1,553 |

| | NB | SB | EB | WB | Total | | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 07:15 | 07:15 | 07:15 | PM Peak Hour | | | 16:15 | 17:30 | 16:15 |
| AM Pk Volume | | | 37 | 97 | 134 | PM Pk Volume | | | 76 | 81 | 151 |
| Pk Hr Factor | | | 0.661 | 0.808 | 0.859 | Pk Hr Factor | | | 0.826 | 0.810 | 0.858 |
| 7 - 9 Volume | 0 | 0 | 51 | 142 | 193 | 4 - 6 Volume | 0 | 0 | 133 | 147 | 280 |
| 7 - 9 Peak Hour | | | 07:15 | 07:15 | 07:15 | 4 - 6 Peak Hour | | | 16:15 | 16:45 | 16:15 |
| 7 - 9 Pk Volume | 0 | 0 | 37 | 97 | 134 | 4 - 6 Pk Volume | 0 | 0 | 76 | 77 | 151 |
| Pk Hr Factor | 0.000 | 0.000 | 0.661 | 0.808 | 0.859 | Pk Hr Factor | 0.000 | 0.000 | 0.826 | 0.770 | 0.858 |

Prepared by National Data & Surveying Services

# VOLUME

## Annadale Ave 500' W/O Maple Ave

**Day:** Tuesday
**Date:** 1/14/2020

**City:** Fresno
**Project #:** CA20_7012_011

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 809 | 708 | 1,517 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | | | 1 | | 1 | | 2 | |
| 00:15 | | | | | 2 | | 0 | | 2 | |
| 00:30 | | | | | 2 | | 0 | | 2 | |
| 00:45 | | | | | 1 | 6 | 0 | 1 | 1 | 7 |
| 01:00 | | | | | 0 | | 0 | | 0 | |
| 01:15 | | | | | 0 | | 2 | | 2 | |
| 01:30 | | | | | 1 | | 3 | | 4 | |
| 01:45 | | | | | 3 | 4 | 0 | 5 | 3 | 9 |
| 02:00 | | | | | 2 | | 5 | | 7 | |
| 02:15 | | | | | 1 | | 0 | | 1 | |
| 02:30 | | | | | 0 | | 2 | | 2 | |
| 02:45 | | | | | 3 | 6 | 1 | 8 | 4 | 14 |
| 03:00 | | | | | 1 | | 0 | | 1 | |
| 03:15 | | | | | 5 | | 0 | | 5 | |
| 03:30 | | | | | 3 | | 1 | | 4 | |
| 03:45 | | | | | 9 | 18 | 5 | 6 | 14 | 24 |
| 04:00 | | | | | 3 | | 2 | | 5 | |
| 04:15 | | | | | 4 | | 4 | | 8 | |
| 04:30 | | | | | 3 | | 1 | | 4 | |
| 04:45 | | | | | 11 | 21 | 5 | 12 | 16 | 33 |
| 05:00 | | | | | 5 | | 4 | | 9 | |
| 05:15 | | | | | 9 | | 6 | | 15 | |
| 05:30 | | | | | 17 | | 6 | | 23 | |
| 05:45 | | | | | 21 | 52 | 6 | 22 | 27 | 74 |
| 06:00 | | | | | 14 | | 3 | | 17 | |
| 06:15 | | | | | 29 | | 9 | | 38 | |
| 06:30 | | | | | 20 | | 6 | | 26 | |
| 06:45 | | | | | 20 | 83 | 12 | 30 | 32 | 113 |
| 07:00 | | | | | 16 | | 14 | | 30 | |
| 07:15 | | | | | 14 | | 10 | | 24 | |
| 07:30 | | | | | 23 | | 17 | | 40 | |
| 07:45 | | | | | 30 | 83 | 9 | 50 | 39 | 133 |
| 08:00 | | | | | 20 | | 10 | | 30 | |
| 08:15 | | | | | 18 | | 9 | | 27 | |
| 08:30 | | | | | 12 | | 16 | | 28 | |
| 08:45 | | | | | 13 | 63 | 9 | 44 | 22 | 107 |
| 09:00 | | | | | 9 | | 10 | | 19 | |
| 09:15 | | | | | 7 | | 3 | | 10 | |
| 09:30 | | | | | 9 | | 5 | | 14 | |
| 09:45 | | | | | 12 | 37 | 3 | 21 | 15 | 58 |
| 10:00 | | | | | 8 | | 10 | | 18 | |
| 10:15 | | | | | 9 | | 8 | | 17 | |
| 10:30 | | | | | 13 | | 6 | | 19 | |
| 10:45 | | | | | 10 | 40 | 19 | 43 | 29 | 83 |
| 11:00 | | | | | 17 | | 9 | | 26 | |
| 11:15 | | | | | 15 | | 12 | | 27 | |
| 11:30 | | | | | 11 | | 20 | | 31 | |
| 11:45 | | | | | 15 | 58 | 16 | 57 | 31 | 115 |
| **TOTALS** | | | | | | 471 | | 299 | | **770** |
| **SPLIT %** | | | | | | 61.2% | | 38.8% | | **50.8%** |

| PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 | | | | | 13 | | 13 | | 26 | |
| 12:15 | | | | | 20 | | 5 | | 25 | |
| 12:30 | | | | | 10 | | 7 | | 17 | |
| 12:45 | | | | | 10 | 53 | 8 | 33 | 18 | 86 |
| 13:00 | | | | | 15 | | 4 | | 19 | |
| 13:15 | | | | | 13 | | 7 | | 20 | |
| 13:30 | | | | | 10 | | 18 | | 28 | |
| 13:45 | | | | | 13 | 51 | 12 | 41 | 25 | 92 |
| 14:00 | | | | | 15 | | 24 | | 39 | |
| 14:15 | | | | | 18 | | 16 | | 34 | |
| 14:30 | | | | | 21 | | 20 | | 41 | |
| 14:45 | | | | | 10 | 64 | 19 | 79 | 29 | 143 |
| 15:00 | | | | | 13 | | 15 | | 28 | |
| 15:15 | | | | | 15 | | 18 | | 33 | |
| 15:30 | | | | | 11 | | 12 | | 23 | |
| 15:45 | | | | | 15 | 54 | 15 | 60 | 30 | 114 |
| 16:00 | | | | | 10 | | 21 | | 31 | |
| 16:15 | | | | | 6 | | 18 | | 24 | |
| 16:30 | | | | | 7 | | 21 | | 28 | |
| 16:45 | | | | | 4 | 27 | 16 | 76 | 20 | 103 |
| 17:00 | | | | | 8 | | 13 | | 21 | |
| 17:15 | | | | | 8 | | 13 | | 21 | |
| 17:30 | | | | | 8 | | 23 | | 31 | |
| 17:45 | | | | | 5 | 29 | 9 | 58 | 14 | 87 |
| 18:00 | | | | | 3 | | 7 | | 10 | |
| 18:15 | | | | | 5 | | 1 | | 6 | |
| 18:30 | | | | | 10 | | 8 | | 18 | |
| 18:45 | | | | | 6 | 24 | 6 | 22 | 12 | 46 |
| 19:00 | | | | | 1 | | 6 | | 7 | |
| 19:15 | | | | | 1 | | 1 | | 2 | |
| 19:30 | | | | | 1 | | 3 | | 4 | |
| 19:45 | | | | | 2 | 5 | 3 | 13 | 5 | 18 |
| 20:00 | | | | | 1 | | 3 | | 4 | |
| 20:15 | | | | | 2 | | 1 | | 3 | |
| 20:30 | | | | | 2 | | 2 | | 4 | |
| 20:45 | | | | | 3 | 8 | 4 | 10 | 7 | 18 |
| 21:00 | | | | | 2 | | 2 | | 4 | |
| 21:15 | | | | | 1 | | 2 | | 3 | |
| 21:30 | | | | | 2 | | 3 | | 5 | |
| 21:45 | | | | | 2 | 7 | 2 | 9 | 4 | 16 |
| 22:00 | | | | | 2 | | 1 | | 3 | |
| 22:15 | | | | | 1 | | 3 | | 4 | |
| 22:30 | | | | | 1 | | 1 | | 2 | |
| 22:45 | | | | | 3 | 7 | 1 | 6 | 4 | 13 |
| 23:00 | | | | | 2 | | 0 | | 2 | |
| 23:15 | | | | | 1 | | 1 | | 2 | |
| 23:30 | | | | | 3 | | 1 | | 4 | |
| 23:45 | | | | | 3 | 9 | 0 | 2 | 3 | 11 |
| **TOTALS** | | | | | | 338 | | 409 | | **747** |
| **SPLIT %** | | | | | | 45.2% | | 54.8% | | **49.2%** |



| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 809 | 708 | 1,517 |



| | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| **AM Peak Hour** | | | 07:30 | 11:15 | **07:30** |
| **AM Pk Volume** | | | 91 | 61 | **136** |
| **Pk Hr Factor** | | | 0.758 | 0.763 | **0.850** |
| **7 - 9 Volume** | 0 | 0 | 146 | 94 | **240** |
| **7 - 9 Peak Hour** | | | 07:30 | 07:00 | **07:30** |
| **7 - 9 Pk Volume** | 0 | 0 | 91 | 50 | **136** |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.758 | 0.735 | **0.850** |

| | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| **PM Peak Hour** | | | 13:45 | 14:00 | **14:00** |
| **PM Pk Volume** | | | 67 | 79 | **143** |
| **Pk Hr Factor** | | | 0.798 | 0.823 | **0.872** |
| **4 - 6 Volume** | 0 | 0 | 56 | 134 | **190** |
| **4 - 6 Peak Hour** | | | 17:00 | 16:00 | **16:00** |
| **4 - 6 Pk Volume** | 0 | 0 | 29 | 76 | **103** |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.906 | 0.905 | **0.831** |

Prepared by National Data & Surveying Services

# VOLUME

## North Ave 500' W/O Maple Ave

**Day:** Wednesday
**Date:** 1/15/2020

**City:** Fresno
**Project #:** CA20_7012_012

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,445 | 4,204 | 8,649 |

| AM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 8 | | 4 | | 12 | |
| 00:15 | | | 3 | | 7 | | 10 | |
| 00:30 | | | 5 | | 5 | | 10 | |
| 00:45 | | | 11 | 27 | 1 | 17 | 12 | 44 |
| 01:00 | | | 6 | | 3 | | 9 | |
| 01:15 | | | 8 | | 5 | | 13 | |
| 01:30 | | | 9 | | 4 | | 13 | |
| 01:45 | | | 6 | 29 | 6 | 18 | 12 | 47 |
| 02:00 | | | 6 | | 7 | | 13 | |
| 02:15 | | | 4 | | 8 | | 12 | |
| 02:30 | | | 11 | | 6 | | 17 | |
| 02:45 | | | 8 | 29 | 5 | 26 | 13 | 55 |
| 03:00 | | | 15 | | 13 | | 28 | |
| 03:15 | | | 4 | | 15 | | 19 | |
| 03:30 | | | 3 | | 4 | | 7 | |
| 03:45 | | | 4 | 26 | 3 | 35 | 7 | 61 |
| 04:00 | | | 5 | | 4 | | 9 | |
| 04:15 | | | 17 | | 5 | | 22 | |
| 04:30 | | | 24 | | 20 | | 44 | |
| 04:45 | | | 31 | 77 | 24 | 53 | 55 | 130 |
| 05:00 | | | 28 | | 15 | | 43 | |
| 05:15 | | | 27 | | 14 | | 41 | |
| 05:30 | | | 42 | | 38 | | 80 | |
| 05:45 | | | 33 | 130 | 42 | 109 | 75 | 239 |
| 06:00 | | | 35 | | 41 | | 76 | |
| 06:15 | | | 27 | | 56 | | 83 | |
| 06:30 | | | 55 | | 54 | | 109 | |
| 06:45 | | | 76 | 193 | 75 | 226 | 151 | 419 |
| 07:00 | | | 43 | | 69 | | 112 | |
| 07:15 | | | 66 | | 75 | | 141 | |
| 07:30 | | | 51 | | 94 | | 145 | |
| 07:45 | | | 79 | 239 | 78 | 316 | 157 | 555 |
| 08:00 | | | 67 | | 86 | | 153 | |
| 08:15 | | | 50 | | 53 | | 103 | |
| 08:30 | | | 59 | | 50 | | 109 | |
| 08:45 | | | 75 | 251 | 71 | 260 | 146 | 511 |
| 09:00 | | | 70 | | 68 | | 138 | |
| 09:15 | | | 64 | | 61 | | 125 | |
| 09:30 | | | 63 | | 99 | | 162 | |
| 09:45 | | | 74 | 271 | 60 | 288 | 134 | 559 |
| 10:00 | | | 91 | | 75 | | 166 | |
| 10:15 | | | 83 | | 59 | | 142 | |
| 10:30 | | | 84 | | 77 | | 161 | |
| 10:45 | | | 77 | 335 | 80 | 291 | 157 | 626 |
| 11:00 | | | 67 | | 65 | | 132 | |
| 11:15 | | | 70 | | 58 | | 128 | |
| 11:30 | | | 68 | | 68 | | 136 | |
| 11:45 | | | 75 | 280 | 70 | 261 | 145 | 541 |
| **TOTALS** | | | | 1887 | | 1900 | | **3787** |
| **SPLIT %** | | | | 49.8% | | 50.2% | | **43.8%** |

| PM Period | NB | SB | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| 12:00 | | | 80 | | 50 | | 130 | |
| 12:15 | | | 70 | | 72 | | 142 | |
| 12:30 | | | 76 | | 64 | | 140 | |
| 12:45 | | | 82 | 308 | 51 | 237 | 133 | 545 |
| 13:00 | | | 67 | | 72 | | 139 | |
| 13:15 | | | 95 | | 80 | | 175 | |
| 13:30 | | | 50 | | 52 | | 102 | |
| 13:45 | | | 67 | 279 | 58 | 262 | 125 | 541 |
| 14:00 | | | 89 | | 75 | | 164 | |
| 14:15 | | | 92 | | 56 | | 148 | |
| 14:30 | | | 102 | | 95 | | 197 | |
| 14:45 | | | 94 | 377 | 81 | 307 | 175 | 684 |
| 15:00 | | | 80 | | 115 | | 195 | |
| 15:15 | | | 99 | | 81 | | 180 | |
| 15:30 | | | 96 | | 85 | | 181 | |
| 15:45 | | | 69 | 344 | 63 | 344 | 132 | 688 |
| 16:00 | | | 98 | | 89 | | 187 | |
| 16:15 | | | 120 | | 81 | | 201 | |
| 16:30 | | | 84 | | 118 | | 202 | |
| 16:45 | | | 104 | 406 | 91 | 379 | 195 | 785 |
| 17:00 | | | 116 | | 86 | | 202 | |
| 17:15 | | | 80 | | 78 | | 158 | |
| 17:30 | | | 81 | | 74 | | 155 | |
| 17:45 | | | 59 | 336 | 87 | 325 | 146 | 661 |
| 18:00 | | | 60 | | 71 | | 131 | |
| 18:15 | | | 54 | | 57 | | 111 | |
| 18:30 | | | 42 | | 30 | | 72 | |
| 18:45 | | | 43 | 199 | 31 | 189 | 74 | 388 |
| 19:00 | | | 17 | | 22 | | 39 | |
| 19:15 | | | 18 | | 10 | | 28 | |
| 19:30 | | | 25 | | 15 | | 40 | |
| 19:45 | | | 13 | 73 | 11 | 58 | 24 | 131 |
| 20:00 | | | 25 | | 18 | | 43 | |
| 20:15 | | | 19 | | 11 | | 30 | |
| 20:30 | | | 21 | | 13 | | 34 | |
| 20:45 | | | 25 | 90 | 13 | 55 | 38 | 145 |
| 21:00 | | | 12 | | 27 | | 39 | |
| 21:15 | | | 12 | | 19 | | 31 | |
| 21:30 | | | 18 | | 10 | | 28 | |
| 21:45 | | | 13 | 55 | 19 | 75 | 32 | 130 |
| 22:00 | | | 16 | | 8 | | 24 | |
| 22:15 | | | 10 | | 14 | | 24 | |
| 22:30 | | | 15 | | 7 | | 22 | |
| 22:45 | | | 11 | 52 | 14 | 43 | 25 | 95 |
| 23:00 | | | 6 | | 4 | | 10 | |
| 23:15 | | | 11 | | 4 | | 15 | |
| 23:30 | | | 13 | | 9 | | 22 | |
| 23:45 | | | 9 | 39 | 13 | 30 | 22 | 69 |
| **TOTALS** | | | | 2558 | | 2304 | | **4862** |
| **SPLIT %** | | | | 52.6% | | 47.4% | | **56.2%** |


| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,445 | 4,204 | 8,649 |


| | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| **AM Peak Hour** | | | 10:00 | 07:15 | **10:00** |
| **AM Pk Volume** | | | 335 | 333 | **626** |
| **Pk Hr Factor** | | | 0.920 | 0.886 | **0.943** |
| **7 - 9 Volume** | 0 | 0 | 490 | 576 | **1066** |
| **7 - 9 Peak Hour** | | | 07:15 | 07:15 | **07:15** |
| **7 - 9 Pk Volume** | 0 | 0 | 263 | 333 | **596** |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.832 | 0.886 | **0.949** |

| | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| **PM Peak Hour** | | | 16:15 | 16:00 | **16:15** |
| **PM Pk Volume** | | | 424 | 379 | **800** |
| **Pk Hr Factor** | | | 0.883 | 0.803 | **0.990** |
| **4 - 6 Volume** | 0 | 0 | 742 | 704 | **1446** |
| **4 - 6 Peak Hour** | | | 16:15 | 16:00 | **16:15** |
| **4 - 6 Pk Volume** | 0 | 0 | 424 | 379 | **800** |
| **Pk Hr Factor** | 0.000 | 0.000 | 0.883 | 0.803 | **0.990** |

Prepared by National Data & Surveying Services

# VOLUME

## North Ave 500' E/O Maple Ave

**Day:** Wednesday
**Date:** 1/15/2020

**City:** Fresno
**Project #:** CA20_7012_013

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,051 | 4,287 | 8,338 |

| AM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | | | 13 | | 9 | | 22 | |
| 00:15 | | | | | 5 | | 9 | | 14 | |
| 00:30 | | | | | 8 | | 8 | | 16 | |
| 00:45 | | | | | 11 | 37 | 6 | 32 | 17 | 69 |
| 01:00 | | | | | 7 | | 4 | | 11 | |
| 01:15 | | | | | 6 | | 7 | | 13 | |
| 01:30 | | | | | 12 | | 7 | | 19 | |
| 01:45 | | | | | 8 | 33 | 5 | 23 | 13 | 56 |
| 02:00 | | | | | 7 | | 10 | | 17 | |
| 02:15 | | | | | 3 | | 12 | | 15 | |
| 02:30 | | | | | 11 | | 9 | | 20 | |
| 02:45 | | | | | 12 | 33 | 14 | 45 | 26 | 78 |
| 03:00 | | | | | 12 | | 13 | | 25 | |
| 03:15 | | | | | 6 | | 15 | | 21 | |
| 03:30 | | | | | 3 | | 7 | | 10 | |
| 03:45 | | | | | 5 | 26 | 22 | 57 | 27 | 83 |
| 04:00 | | | | | 13 | | 20 | | 33 | |
| 04:15 | | | | | 18 | | 14 | | 32 | |
| 04:30 | | | | | 24 | | 16 | | 40 | |
| 04:45 | | | | | 26 | 81 | 31 | 81 | 57 | 162 |
| 05:00 | | | | | 25 | | 24 | | 49 | |
| 05:15 | | | | | 29 | | 20 | | 49 | |
| 05:30 | | | | | 31 | | 33 | | 64 | |
| 05:45 | | | | | 33 | 118 | 50 | 127 | 83 | 245 |
| 06:00 | | | | | 23 | | 38 | | 61 | |
| 06:15 | | | | | 20 | | 56 | | 76 | |
| 06:30 | | | | | 42 | | 62 | | 104 | |
| 06:45 | | | | | 60 | 145 | 96 | 252 | 156 | 397 |
| 07:00 | | | | | 39 | | 79 | | 118 | |
| 07:15 | | | | | 59 | | 85 | | 144 | |
| 07:30 | | | | | 47 | | 90 | | 137 | |
| 07:45 | | | | | 65 | 210 | 98 | 352 | 163 | 562 |
| 08:00 | | | | | 67 | | 92 | | 159 | |
| 08:15 | | | | | 44 | | 52 | | 96 | |
| 08:30 | | | | | 69 | | 62 | | 131 | |
| 08:45 | | | | | 65 | 245 | 61 | 267 | 126 | 512 |
| 09:00 | | | | | 78 | | 61 | | 139 | |
| 09:15 | | | | | 62 | | 68 | | 130 | |
| 09:30 | | | | | 56 | | 99 | | 155 | |
| 09:45 | | | | | 76 | 272 | 57 | 285 | 133 | 557 |
| 10:00 | | | | | 66 | | 66 | | 132 | |
| 10:15 | | | | | 69 | | 56 | | 125 | |
| 10:30 | | | | | 62 | | 57 | | 119 | |
| 10:45 | | | | | 45 | 242 | 89 | 268 | 134 | 510 |
| 11:00 | | | | | 66 | | 53 | | 119 | |
| 11:15 | | | | | 70 | | 58 | | 128 | |
| 11:30 | | | | | 81 | | 57 | | 138 | |
| 11:45 | | | | | 74 | 291 | 66 | 234 | 140 | 525 |
| TOTALS | | | | | | 1733 | | 2023 | | 3756 |
| SPLIT % | | | | | | 46.1% | | 53.9% | | 45.0% |

| PM Period | NB | | SB | | EB | | WB | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 | | | | | 61 | | 50 | | 111 | |
| 12:15 | | | | | 75 | | 74 | | 149 | |
| 12:30 | | | | | 64 | | 59 | | 123 | |
| 12:45 | | | | | 63 | 263 | 67 | 250 | 130 | 513 |
| 13:00 | | | | | 50 | | 77 | | 127 | |
| 13:15 | | | | | 59 | | 57 | | 116 | |
| 13:30 | | | | | 57 | | 63 | | 120 | |
| 13:45 | | | | | 72 | 238 | 70 | 267 | 142 | 505 |
| 14:00 | | | | | 75 | | 72 | | 147 | |
| 14:15 | | | | | 80 | | 72 | | 152 | |
| 14:30 | | | | | 95 | | 93 | | 188 | |
| 14:45 | | | | | 78 | 328 | 78 | 315 | 156 | 643 |
| 15:00 | | | | | 76 | | 101 | | 177 | |
| 15:15 | | | | | 82 | | 70 | | 152 | |
| 15:30 | | | | | 85 | | 77 | | 162 | |
| 15:45 | | | | | 70 | 313 | 90 | 338 | 160 | 651 |
| 16:00 | | | | | 99 | | 85 | | 184 | |
| 16:15 | | | | | 85 | | 77 | | 162 | |
| 16:30 | | | | | 96 | | 88 | | 184 | |
| 16:45 | | | | | 83 | 363 | 87 | 337 | 170 | 700 |
| 17:00 | | | | | 109 | | 87 | | 196 | |
| 17:15 | | | | | 65 | | 64 | | 129 | |
| 17:30 | | | | | 71 | | 77 | | 148 | |
| 17:45 | | | | | 61 | 306 | 69 | 297 | 130 | 603 |
| 18:00 | | | | | 57 | | 62 | | 119 | |
| 18:15 | | | | | 55 | | 54 | | 109 | |
| 18:30 | | | | | 42 | | 31 | | 73 | |
| 18:45 | | | | | 34 | 188 | 33 | 180 | 67 | 368 |
| 19:00 | | | | | 24 | | 21 | | 45 | |
| 19:15 | | | | | 14 | | 17 | | 31 | |
| 19:30 | | | | | 21 | | 14 | | 35 | |
| 19:45 | | | | | 19 | 78 | 16 | 68 | 35 | 146 |
| 20:00 | | | | | 20 | | 16 | | 36 | |
| 20:15 | | | | | 17 | | 11 | | 28 | |
| 20:30 | | | | | 19 | | 18 | | 37 | |
| 20:45 | | | | | 27 | 83 | 17 | 62 | 44 | 145 |
| 21:00 | | | | | 17 | | 31 | | 48 | |
| 21:15 | | | | | 14 | | 9 | | 23 | |
| 21:30 | | | | | 15 | | 8 | | 23 | |
| 21:45 | | | | | 17 | 63 | 25 | 73 | 42 | 136 |
| 22:00 | | | | | 16 | | 6 | | 22 | |
| 22:15 | | | | | 10 | | 15 | | 25 | |
| 22:30 | | | | | 13 | | 5 | | 18 | |
| 22:45 | | | | | 14 | 53 | 16 | 42 | 30 | 95 |
| 23:00 | | | | | 10 | | 6 | | 16 | |
| 23:15 | | | | | 13 | | 6 | | 19 | |
| 23:30 | | | | | 10 | | 15 | | 25 | |
| 23:45 | | | | | 9 | 42 | 8 | 35 | 17 | 77 |
| TOTALS | | | | | | 2318 | | 2264 | | 4582 |
| SPLIT % | | | | | | 50.6% | | 49.4% | | 55.0% |

| DAILY TOTALS | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|
| | 0 | 0 | 4,051 | 4,287 | 8,338 |

| | NB | SB | EB | WB | Total | | NB | SB | EB | WB | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AM Peak Hour | | | 11:00 | 07:15 | 07:15 | PM Peak Hour | | | 16:15 | 14:15 | 16:15 |
| AM Pk Volume | | | 291 | 365 | 603 | PM Pk Volume | | | 373 | 344 | 712 |
| Pk Hr Factor | | | 0.898 | 0.931 | 0.925 | Pk Hr Factor | | | 0.856 | 0.851 | 0.908 |
| 7 - 9 Volume | 0 | 0 | 455 | 619 | 1074 | 4 - 6 Volume | 0 | 0 | 669 | 634 | 1303 |
| 7 - 9 Peak Hour | | | 07:45 | 07:15 | 07:15 | 4 - 6 Peak Hour | | | 16:15 | 16:15 | 16:15 |
| 7 - 9 Pk Volume | 0 | 0 | 245 | 365 | 603 | 4 - 6 Pk Volume | 0 | 0 | 373 | 339 | 712 |
| Pk Hr Factor | 0.000 | 0.000 | 0.888 | 0.931 | 0.925 | Pk Hr Factor | 0.000 | 0.000 | 0.856 | 0.963 | 0.908 |

## Appendix C: Traffic Modeling

November 14, 2019

Kai Han, TE
Council of Fresno County Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

Via E-mail Only: khan@fresnocog.org

***Subject:*** ***Traffic Modeling Request for the Preparation of a Traffic Impact Analysis in Support of a Mixed-Use Development Project Located on the Northeast Corner of Maple Avenue and Jensen Avenue in the City of Fresno (JLB Project 004-109)***

Dear Mr. Han,

JLB Traffic Engineering, Inc. (JLB) hereby requests traffic modeling for the preparation of a Traffic Impact Analysis (TIA) for the proposed Mixed-Use Development (Project) located on the northeast corner of Maple Avenue and Jensen Avenue in the City of Fresno. The Project proposes to construct a 4,000 square-foot gasoline/service station with convenience market (16 fueling positions), a 5,000 square-foot small office building, a 14,500 square-foot medical-dental office building, 32,000 square feet of shopping center, a 6,000 square-foot walk-in bank, a 3,000 square-foot fast-food restaurant with drive-through window, a 2,000 square-foot fast-foot restaurant without drive-through window, a 4,000 square-foot day care, 150 units of multi-family housing (3-story), and a 2,000 square-foot coffee/donut shop with drive-through window. Based on information provided to JLB, the Project will undergo a General Plan Amendment. An aerial of the Project vicinity and the Project Site Plan are presented in Exhibits A and B, respectively

The purpose of the TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process.

### *Scenarios:*

The following scenarios are requested:

1. Base Year 2019 (with Link and TAZ modifications)
2. Cumulative Year 2035 plus Project Select Zone (with Link and TAZ modifications)
3. Differences between model runs 2 and 1 above

### *Changes and/or additions to the Model Network or TAZ's*

JLB reviewed the Fresno COG model network for the Base Year 2019 and Cumulative Year 2035. Based on this review, JLB requests the following link and TAZ Network modifications. Details on the requested Link and TAZ modifications for Base Year 2019 and Cumulative Year 2035 are illustrated in Exhibit C.

### *LINK and TAZ MODIFICATIONS (Base Year 2019 Scenario Only):*

1. Modify North Avenue to reduce the speed limit between Maple Avenue and Willow Avenue to 45 MPH in both directions.

***LINK and TAZ MODIFICATIONS (Base Year 2019 and Cumulative Year 2035 Scenarios):***

1. Create Florence Avenue between Cedar Ave and Chestnut Avenue. Florence Avenue is located approximately 1,315 feet north of Church Avenue.
   a. Classification: Local Roadway
   b. Lanes: One lane in each direction
   c. Speed: 40 MPH
2. Modify TAZ 1474 as follows:
   a. Eliminate existing TAZ connectors to Cedar Avenue, Maple Avenue and Church Avenue.
   b. Split existing TAZ 1474 into two (2) TAZs – TAZ 1474A and TAZ 1474B.
      i. Create TAZ 1474A bounded by Cedar Avenue, Maple Avenue and Florence Avenue. TAZ 1474A shall have TAZ connectors to Cedar Avenue, Maple Avenue and Florence Avenue.
      ii. Create TAZ 1474B bounded by Cedar Avenue, Maple Avenue, Church Avenue and Florence Avenue. TAZ 1474B shall have TAZ connectors to Cedar Avenue, Maple Avenue, Church Avenue and Florence Avenue.
3. Modify TAZ 1476 as follows:
   a. Eliminate existing TAZ connectors to Maple Avenue, Church Avenue and Chestnut Avenue.
   b. Split existing TAZ 1476 into two (2) TAZs – TAZ 1476A and TAZ 1476B.
      i. Create TAZ 1476A bounded by Maple Avenue, Florence Avenue and Chestnut Avenue. TAZ 1476A shall have TAZ connectors to Maple Avenue, Florence Avenue and Chestnut Avenue.
      ii. Create TAZ 1476B bounded by Maple Avenue, Church Avenue, Chestnut Avenue and Florence Avenue. TAZ 1476B shall have TAZ connectors to Maple Avenue, Church Avenue, Chestnut Avenue and Florence Avenue.
4. Create Grove Ave east of Maple Avenue extending for approximately 1,475 feet. Grove Avenue is located approximately 1,325 feet north of Jensen Avenue.
   a. Classification: Local Roadway
   b. Lanes: One lane in each direction
   c. Speed: 25 MPH
5. Modify TAZ 1477 as follows:
   a. Eliminate existing TAZ connectors to Maple Avenue, Jensen Avenue, Chestnut Avenue and Church Avenue.
   b. Split existing TAZ 1477 into three (3) TAZs – TAZ 1477A, TAZ 1477B and TAZ 1477C.
      i. Create TAZ 1477A bounded by Maple Avenue, Church Avenue and Grove Avenue. TAZ 1477A shall have TAZ connectors to Maple Avenue, Grove Avenue and Church Avenue.
      ii. Create TAZ 1477B bounded by Jensen Avenue, Chestnut Avenue and Church Avenue. TAZ 1477B shall have TAZ connectors to Grove Avenue, Chestnut Avenue and Church Avenue.
      iii. Create TAZ 1477C bounded by Maple Avenue, Jensen Avenue and Grove Avenue. TAZ 1477C shall have TAZ connectors to Maple Avenue and Grove Avenue.
6. Modify Annadale Avenue to increase the speed limit between Cedar Avenue and Maple Avenue to 40 MPH in both directions.

7. Modify Maple Avenue as follows:
    a. Increase southbound lanes between Jensen Avenue and Node 2941 to two lanes.
    b. Increase northbound lanes between Jensen Avenue and North Avenue to two lanes.
8. Modify TAZ 1585 to eliminate the existing TAZ connector to North Avenue.

### *LINK and TAZ MODIFICATIONS (Cumulative Year 2035):*

1. Modify North Avenue to increase lanes between Chestnut Avenue and Willow Avenue to two lanes in each direction.
2. Modify Willow Avenue to reduce lanes between North Avenue and Jensen Avenue to one lane in each direction.
3. Create TAZ A (Project) generally located on the northeast corner of Maple Avenue and Jensen Avenue (See Exhibit C). TAZ A shall have TAZ connectors to Maple Avenue and Jensen Avenue.

### *Project Trip Generation*

Trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table I presents the trip generation for the proposed Project with trip generation rates for Gasoline/Service Station with Convenience Market, Small Office Building, Medical-Dental Office Building, Shopping Center, Walk-in Bank, Fast-Food Restaurant with Drive-Through Window, Fast-Food Restaurant without Drive-Through Window, Day Care Center, Multifamily Housing (Mid-Rise) and Coffee Shop. While the ITE Trip Generation Manual does not provide a weekday daily rate for a Walk-in Bank, JLB utilized the weekday daily rate for a Drive-in Bank as a conservative measure. At buildout, the proposed Project is estimated to generate a maximum of 10,432 daily trips, 727 AM peak hour trips and 833 PM peak hour driveway trips (before internal capture and pass-by rate reductions are taken into account).

The TIA proposes to consider reductions in trip generation as a result of internal capture. Internal capture rates were prepared pursuant to the NCHRP 684 Internal Trip Capture procedure. Internal capture trip reductions are applied to account for the interaction between various individual land uses assumed for the trip generation of the Project. For example, in a mixed-use development containing offices and shops, trips made by the office workers to the stops within the site are defined as internal, or captured, trips within the site. Table II presents the results of the internal capture trip analysis for the proposed Project. Captured trips are presented as negative numbers because they are deducted from the total number of driveway trips presented in Table I. Table III presents the adjusted trip generation resulting from the internal capture trip reductions. As can be seen from Table III, the proposed Project is estimated to generate a maximum of 8,486 daily, 625 AM peak hour and 544 PM peak hour driveway trips (before pass-by trip rate reductions are taken into account). Furthermore, JLB proposes to utilize pass-by rate reductions to reflect net new traffic to study facilities.

***Table I: Project Trip Generation***

| Land Use (ITE Code) | Size | Unit | Daily | | AM (7-9) Peak Hour | | | | | | PM (4-6) Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rate | Total | Trip Rate | In % | Out % | In | Out | Total | Trip Rate | In % | Out % | In | Out | Total |
| Gasoline/Service Station with Convenience Market (945) | 16 | f.p. | 205.36 | 3,286 | 12.47 | 51 | 49 | 102 | 98 | 200 | 13.99 | 51 | 49 | 114 | 110 | 224 |
| Small Office Building (712) | 5.000 | k.s.f. | 16.19 | 81 | 1.92 | 83 | 18 | 8 | 2 | 10 | 2.45 | 32 | 68 | 4 | 8 | 12 |
| Medical-Dental Office Building (720) | 14.500 | k.s.f. | 34.80 | 505 | 2.78 | 78 | 22 | 31 | 9 | 40 | 3.46 | 28 | 72 | 14 | 36 | 50 |
| Shopping Center (820) | 32.000 | k.s.f. | 37.75 | 1,208 | 0.94 | 62 | 38 | 19 | 11 | 30 | 3.81 | 48 | 52 | 59 | 63 | 122 |
| Walk-in Bank (911) | 6.000 | k.s.f. | 100.03 | 600 | 0.00 | 0 | 0 | 0 | 0 | 0 | 12.13 | 44 | 56 | 32 | 41 | 73 |
| Fast-Food Restaurant with Drive-Through Window (934) | 3.000 | k.s.f. | 470.95 | 1,413 | 40.19 | 51 | 49 | 62 | 59 | 121 | 32.67 | 52 | 48 | 51 | 47 | 98 |
| Fast-Food Restaurant without Drive-Through Window (933) | 2.000 | k.s.f. | 346.23 | 692 | 25.10 | 60 | 40 | 30 | 20 | 50 | 28.34 | 50 | 50 | 28 | 29 | 57 |
| Day Care Center (565) | 4.000 | k.s.f. | 47.62 | 190 | 11.00 | 53 | 47 | 23 | 21 | 44 | 11.12 | 47 | 53 | 21 | 23 | 44 |
| Multifamily Housing (Mid-Rise) (221) | 150 | d.u. | 5.44 | 816 | 0.36 | 26 | 74 | 14 | 40 | 54 | 0.44 | 61 | 39 | 40 | 26 | 66 |
| Coffee/Donut Shop with Drive-Through Window (937) | 2.000 | k.s.f. | 820.38 | 1,641 | 88.99 | 51 | 49 | 91 | 87 | 178 | 43.38 | 50 | 50 | 43 | 44 | 87 |
| ***Total Project Driveway Trips*** | | | | **10,432** | | | | **380** | **347** | **727** | | | | **406** | **427** | **833** |

Note: f.p. = Fueling Positions
k.s.f = Thousand Square Feet
d.u. = Dwelling Units

### Table II: Internal Capture Trip Reductions

| Land Use (ITE Code) | Daily | AM (7-9) Peak Hour | | | PM (4-6) Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | Total | In | Out | Total | In | Out | Total |
| Gasoline/Service Station with Convenience Market (945) | -663 | -11 | -14 | -25 | -45 | -36 | -81 |
| Small Office Building (712) | -16 | -2 | -2 | -4 | -2 | -2 | -4 |
| Medical-Dental Office Building (720) | -102 | -6 | -8 | -14 | -6 | -10 | -16 |
| Shopping Center (820) | -244 | -2 | -2 | -4 | -24 | -20 | -44 |
| Walk-in Bank (911) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fast-Food Restaurant with Drive-Through Window (934) | -285 | -10 | -6 | -16 | -18 | -23 | -41 |
| Fast-Food Restaurant without Drive-Through Window (933) | -140 | -5 | -2 | -7 | -10 | 14 | -24 |
| Day Care Center (565) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Multifamily Housing (Mid-Rise) (221) | -165 | -1 | -9 | -10 | -25 | -17 | -42 |
| Coffee/Donut Shop with Drive-Through Window (937) | -331 | -14 | -8 | -22 | -15 | -22 | -37 |
| ***Internal Capture Trip Reductions*** | **-1,946** | **-51** | **-51** | **-102** | **-145** | **-144** | **-289** |

### Table III: Project Trip Generation Adjusted for Internal Capture Trip Reductions

| Land Use (ITE Code) | Daily | AM (7-9) Peak Hour | | | PM (4-6) Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | Total | In | Out | Total | In | Out | Total |
| Gasoline/Service Station with Convenience Market (945) | 2,623 | 91 | 84 | 175 | 69 | 74 | 143 |
| Small Office Building (712) | 65 | 6 | 0 | 6 | 2 | 6 | 8 |
| Medical-Dental Office Building (720) | 403 | 25 | 1 | 26 | 8 | 26 | 34 |
| Shopping Center (820) | 964 | 17 | 9 | 26 | 35 | 43 | 78 |
| Walk-in Bank (911) | 600 | 0 | 0 | 0 | 32 | 41 | 73 |
| Fast-Food Restaurant with Drive-Through Window (934) | 1,128 | 52 | 53 | 105 | 33 | 24 | 57 |
| Fast-Food Restaurant without Drive-Through Window (933) | 552 | 25 | 18 | 43 | 18 | 15 | 33 |
| Day Care Center (565) | 190 | 23 | 21 | 44 | 21 | 23 | 44 |
| Multifamily Housing (Mid-Rise) (221) | 651 | 13 | 31 | 44 | 15 | 9 | 24 |
| Coffee/Donut Shop with Drive-Through Window (937) | 1,310 | 77 | 79 | 156 | 28 | 22 | 50 |
| ***Adjusted Project Driveway Trips*** | **8,486** | **329** | **296** | **625** | **261** | **283** | **544** |

***Access to the Project***

Access to and from the Project site is proposed from a total of six (6) access points. Three (3) access points are located along the east side of Maple Avenue, while the remaining three (3) access points are located along the north side of Jensen Avenue. Additional Project details are found on Exhibit B.

Please feel welcome to contact me if you have any questions or require additional information. I can be reached by phone at 559.664.3159 or by e-mail at jgarcia@JLBtraffic.com.

Sincerely,

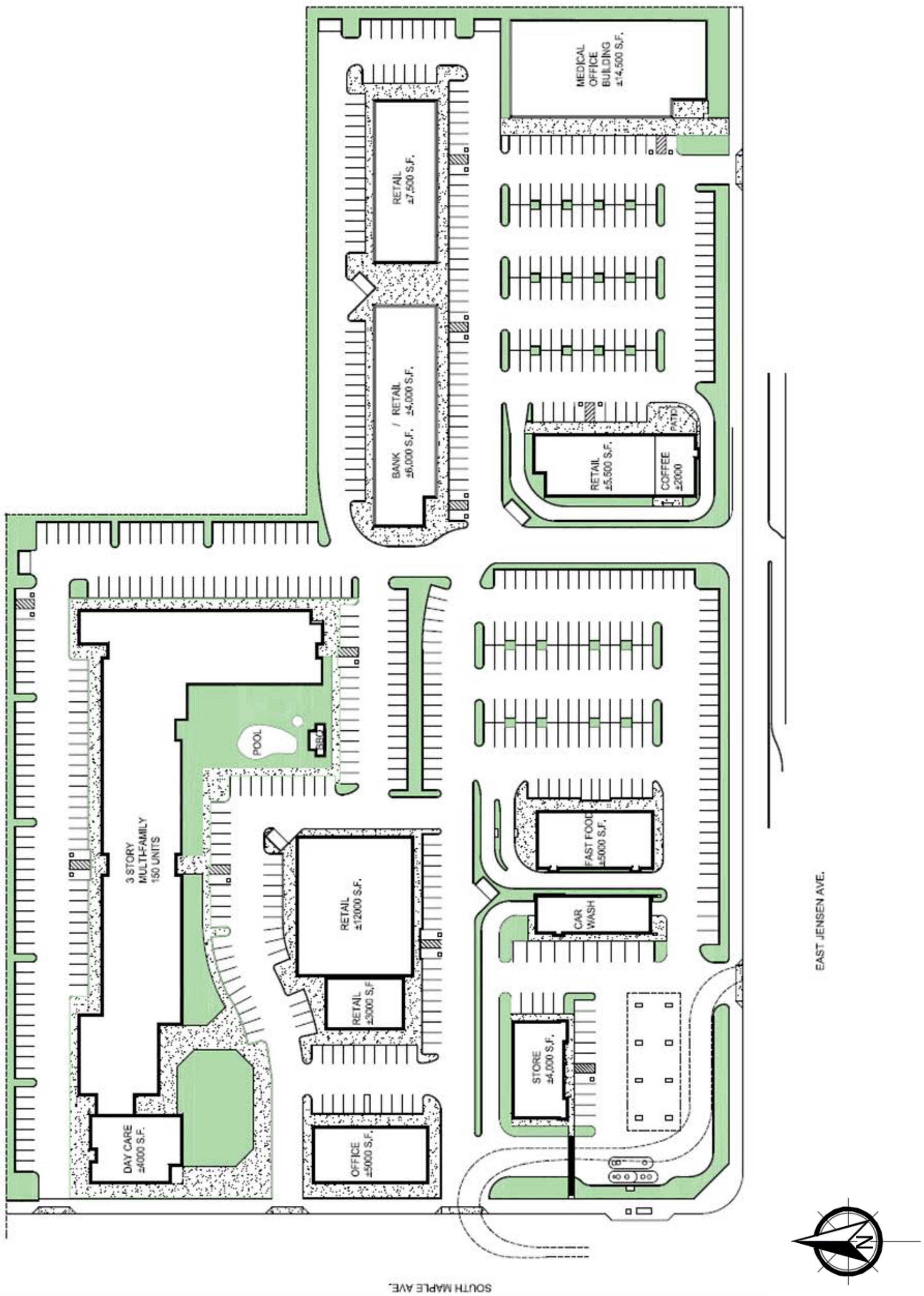
Jesus Garcia

Jesus Garcia
Engineering Aide

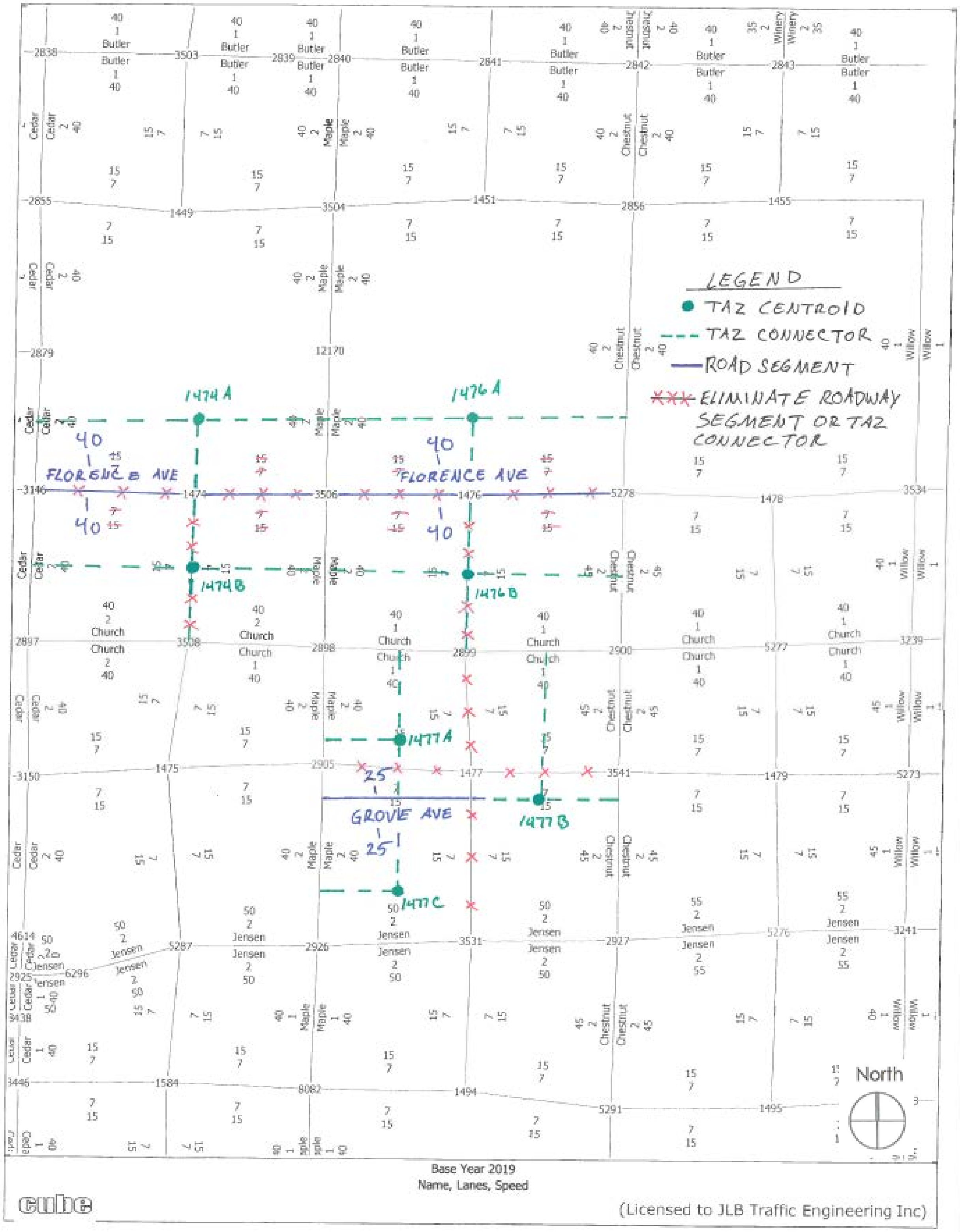
cc: Susana Maciel, JLB Traffic Engineering, Inc.
Lang Yu, Fresno Council of Governments

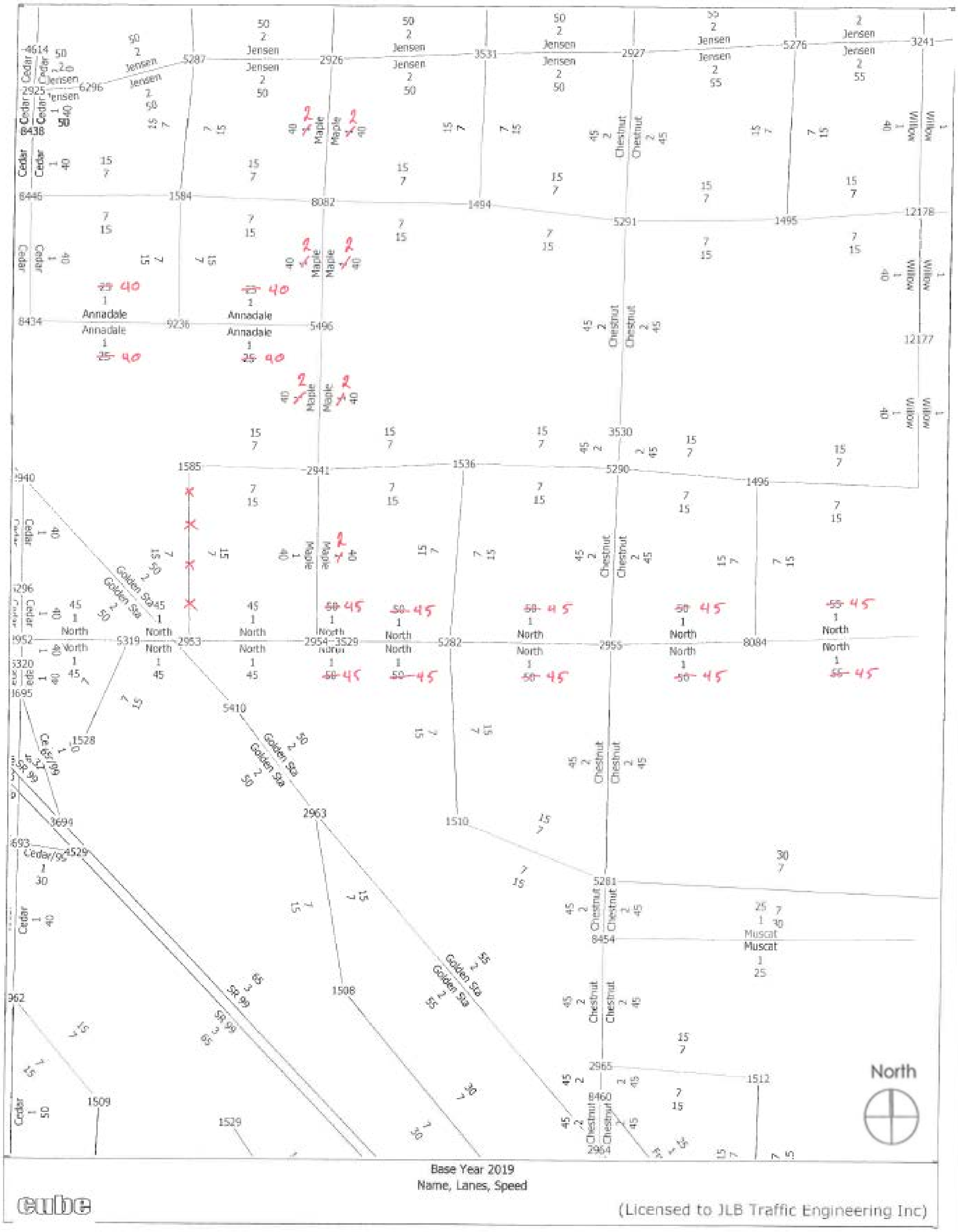
## Exhibit A – Project Aerial

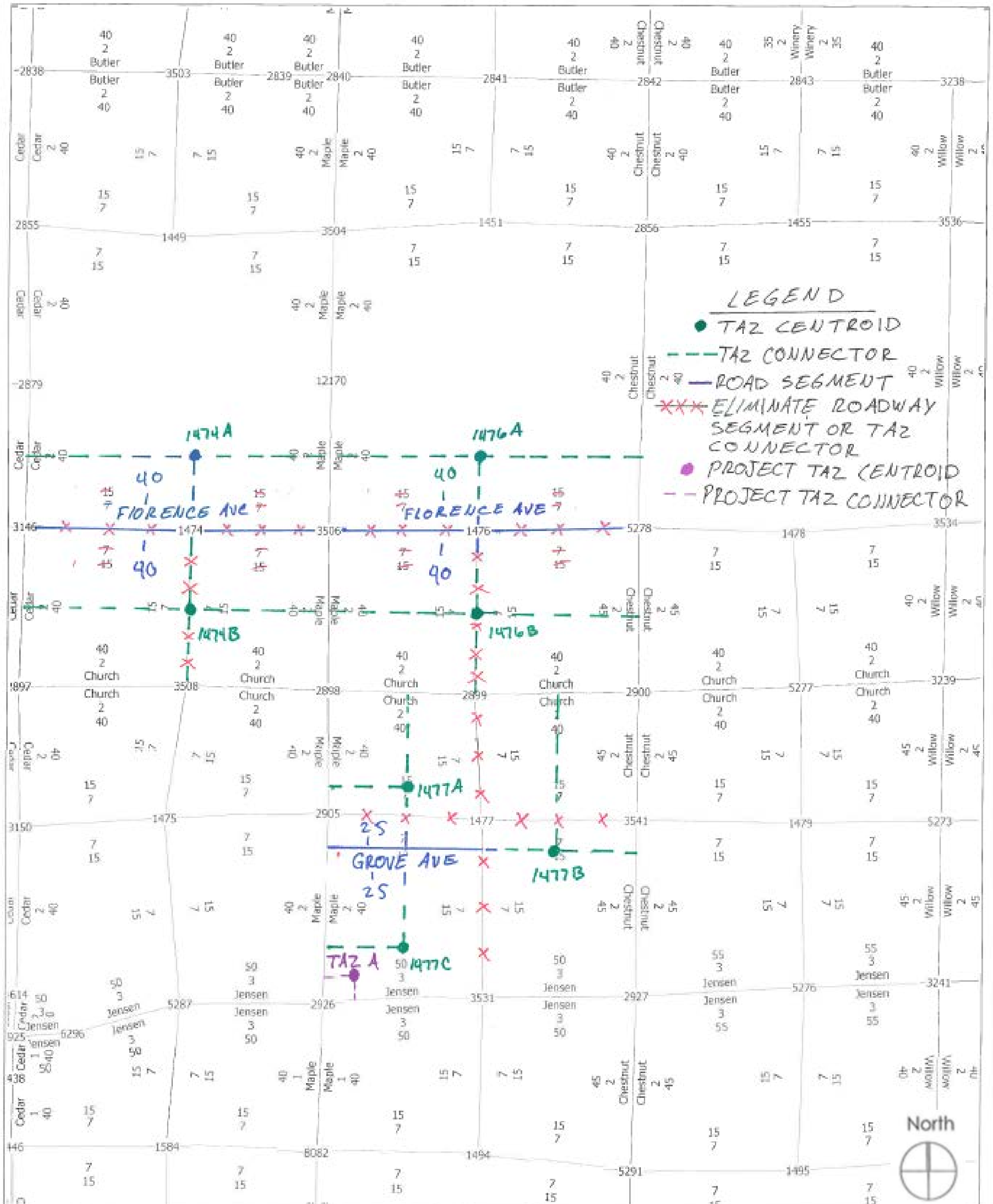
# Exhibit B – Project Site Plan



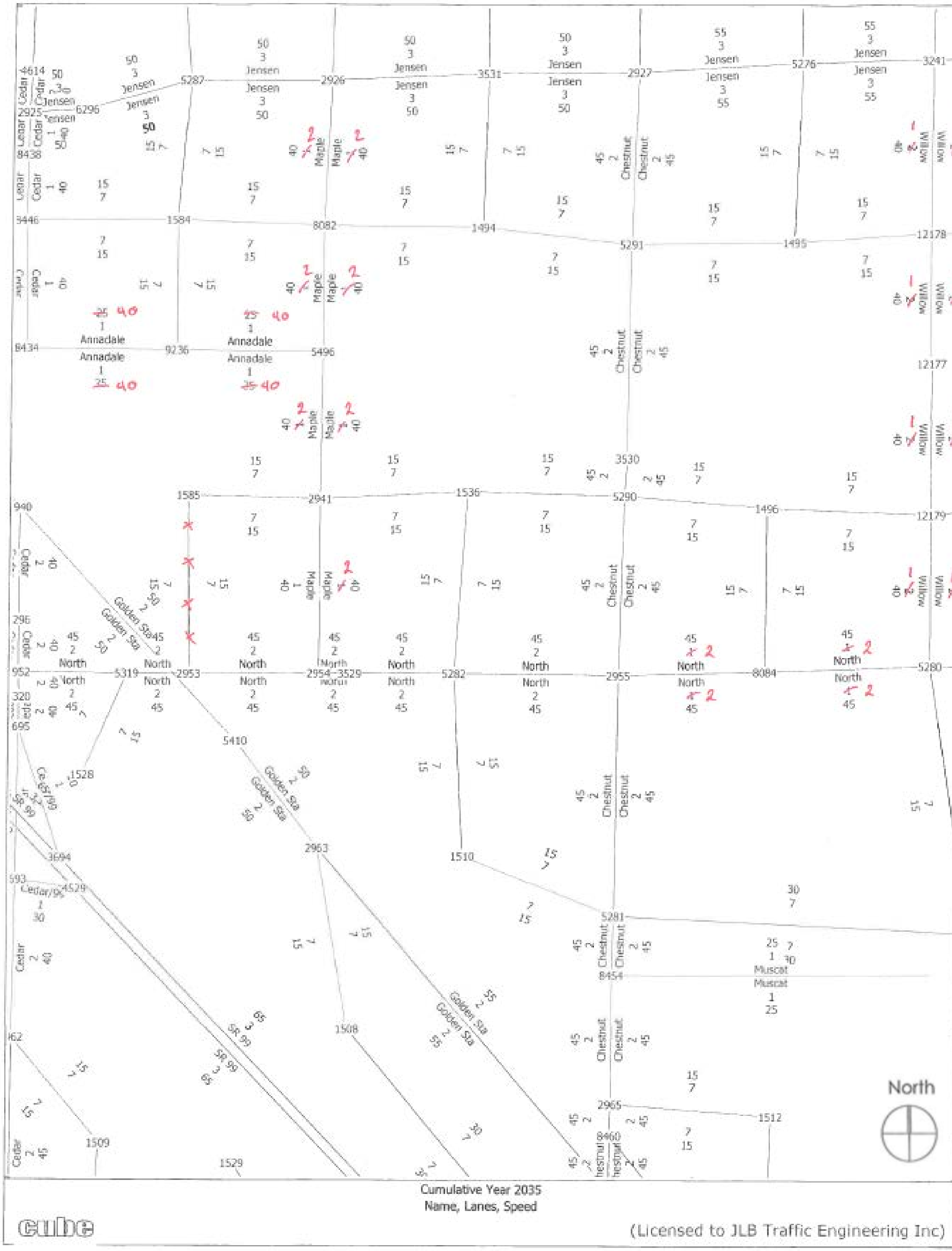
# Exhibit C – Model TAZ Modification

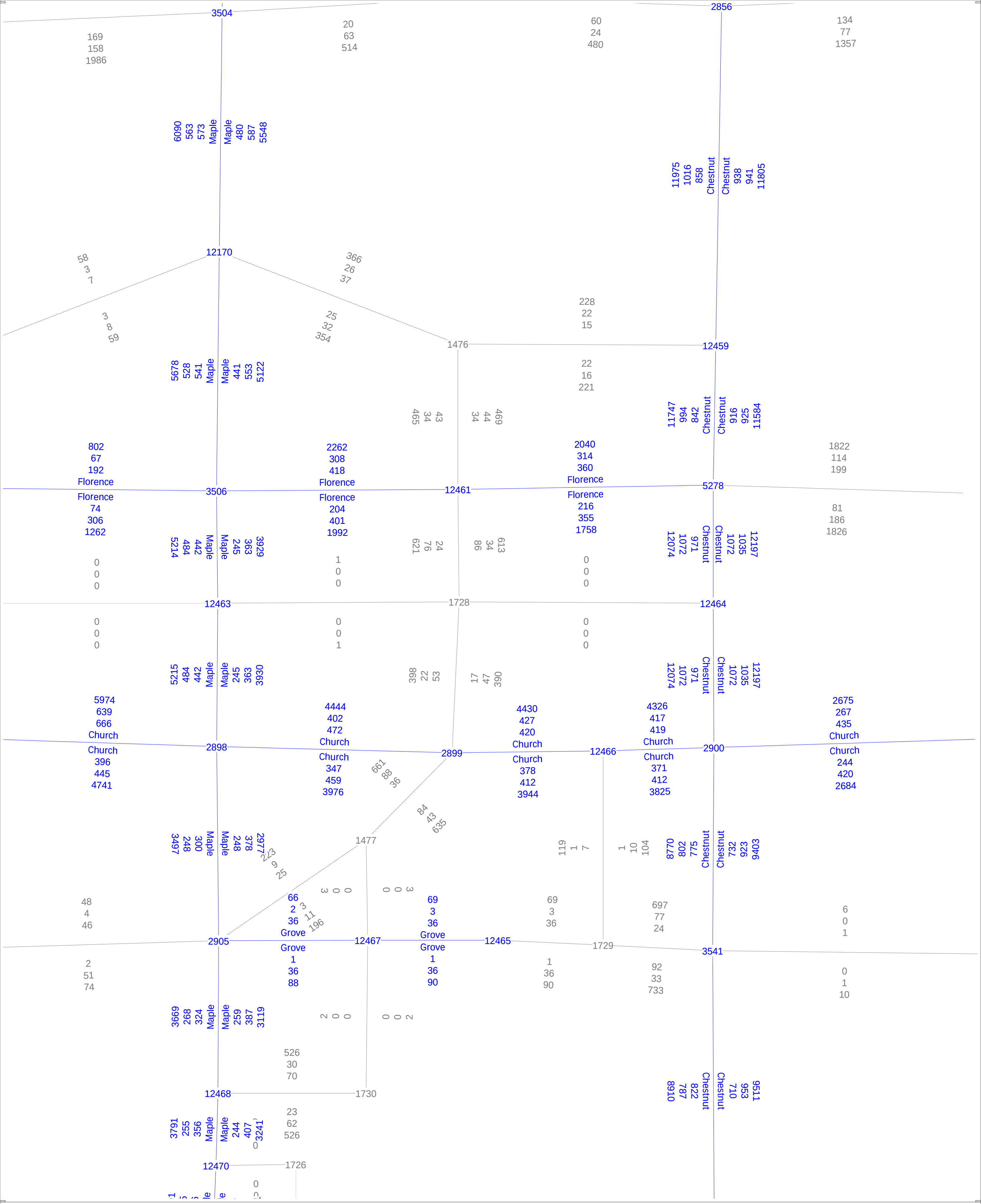



Jensen
Cedar
Maple
Chestnut
Willow
Annadale
North
Golden Sta
SR 99
Muscat
North
Base Year 2019
Name, Lanes, Speed
cube
(Licensed to JLB Traffic Engineering Inc)



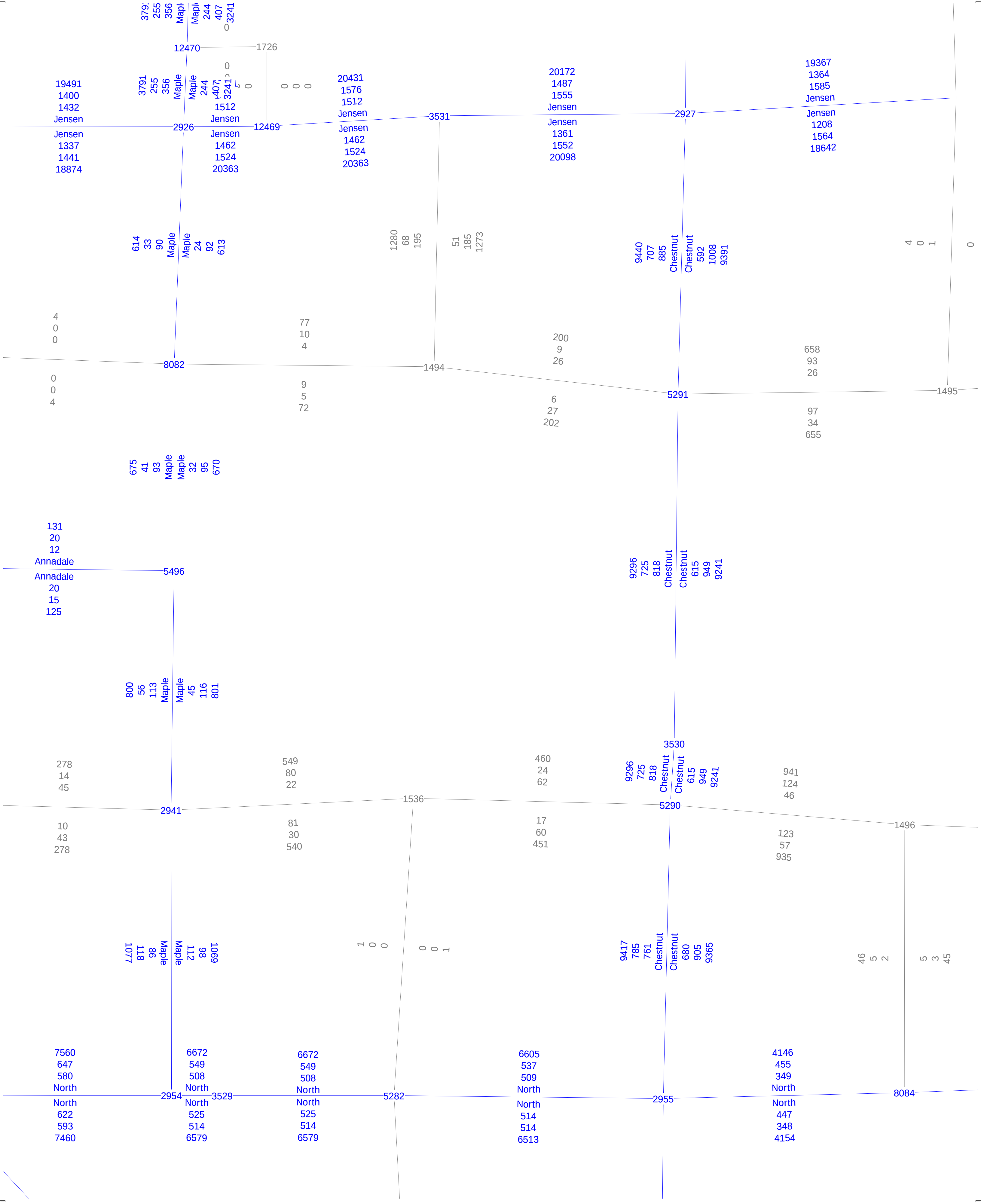

Cumulative Year 2035
Name, Lanes, Speed


Jensen
Cedar
Maple
Chestnut
Willow
Annadale
North
Golden Sta
SR 99
Muscat
Cedar/99
North
Cumulative Year 2035
Name, Lanes, Speed
cube
(Licensed to JLB Traffic Engineering Inc)



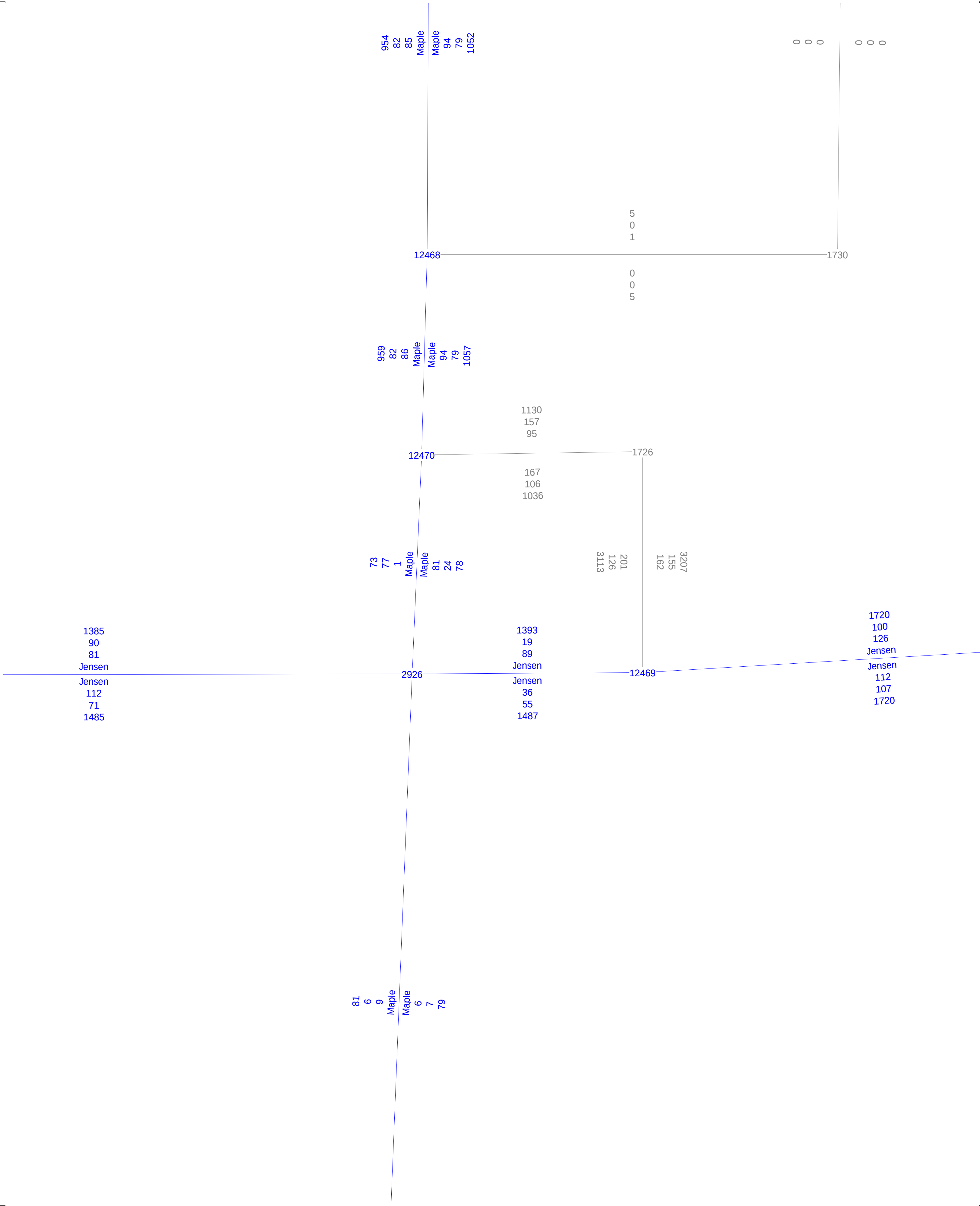

Base Year 2019

AM, PM and Daily Volumes

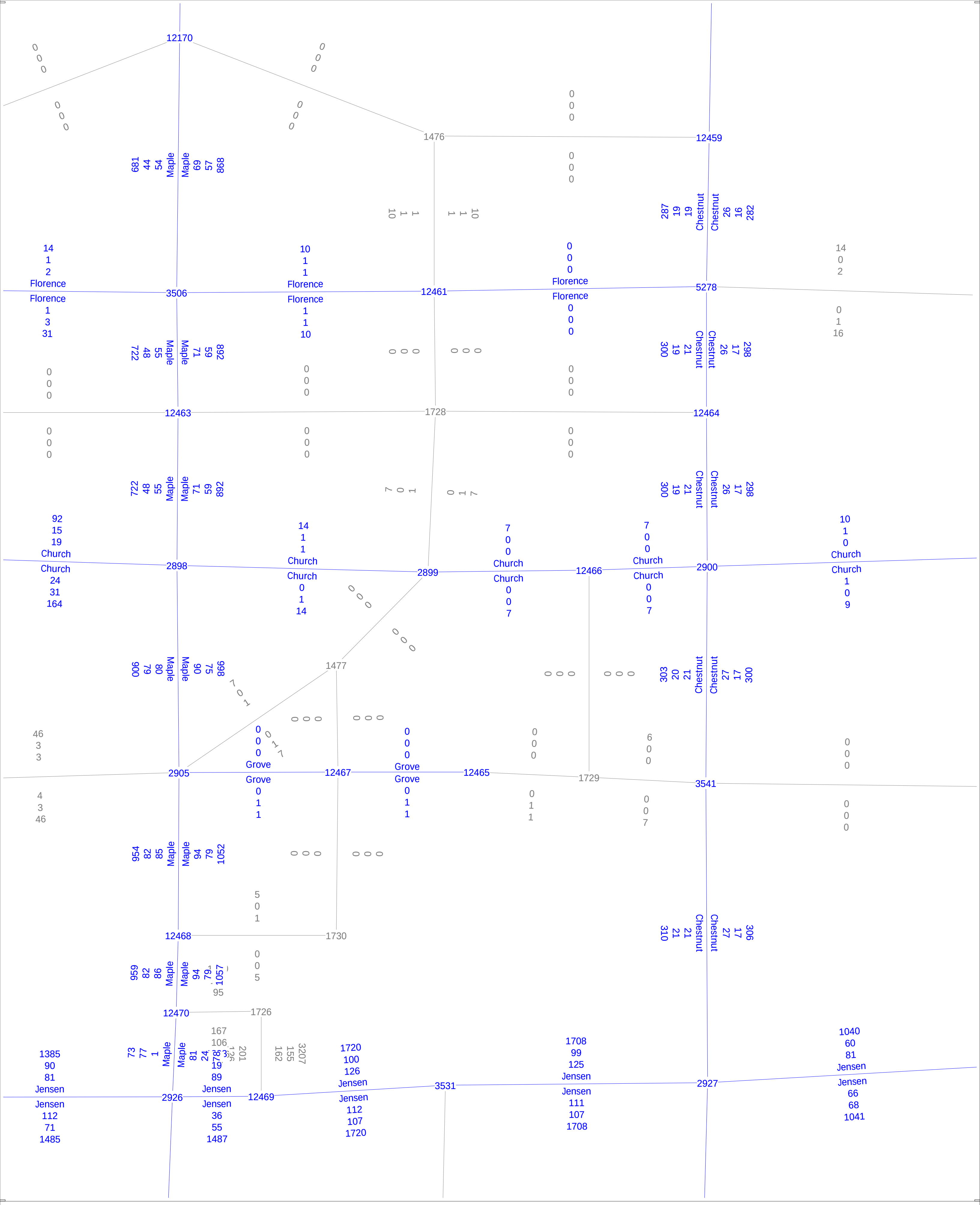



Base Year 2019

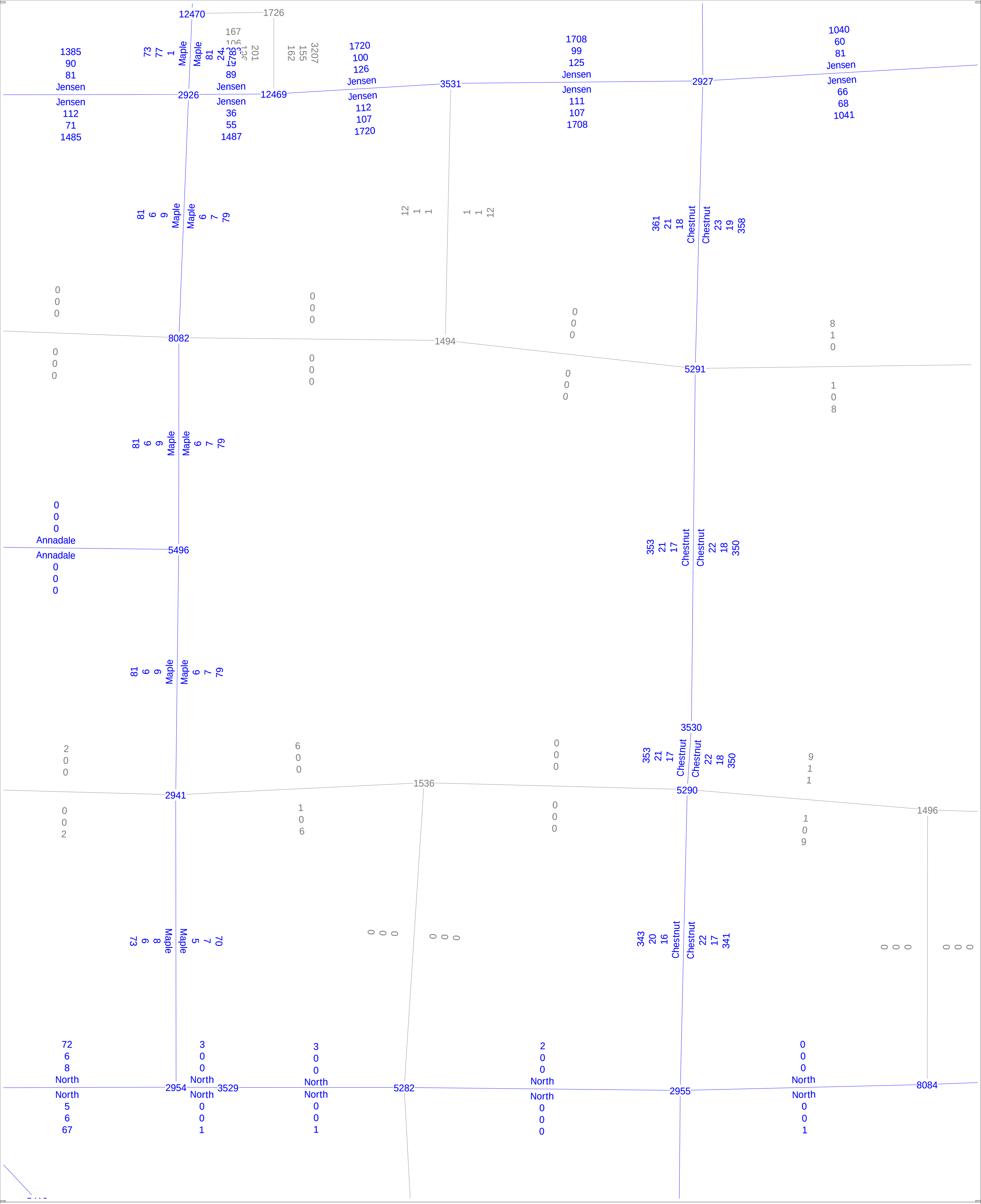
AM, PM and Daily Volumes



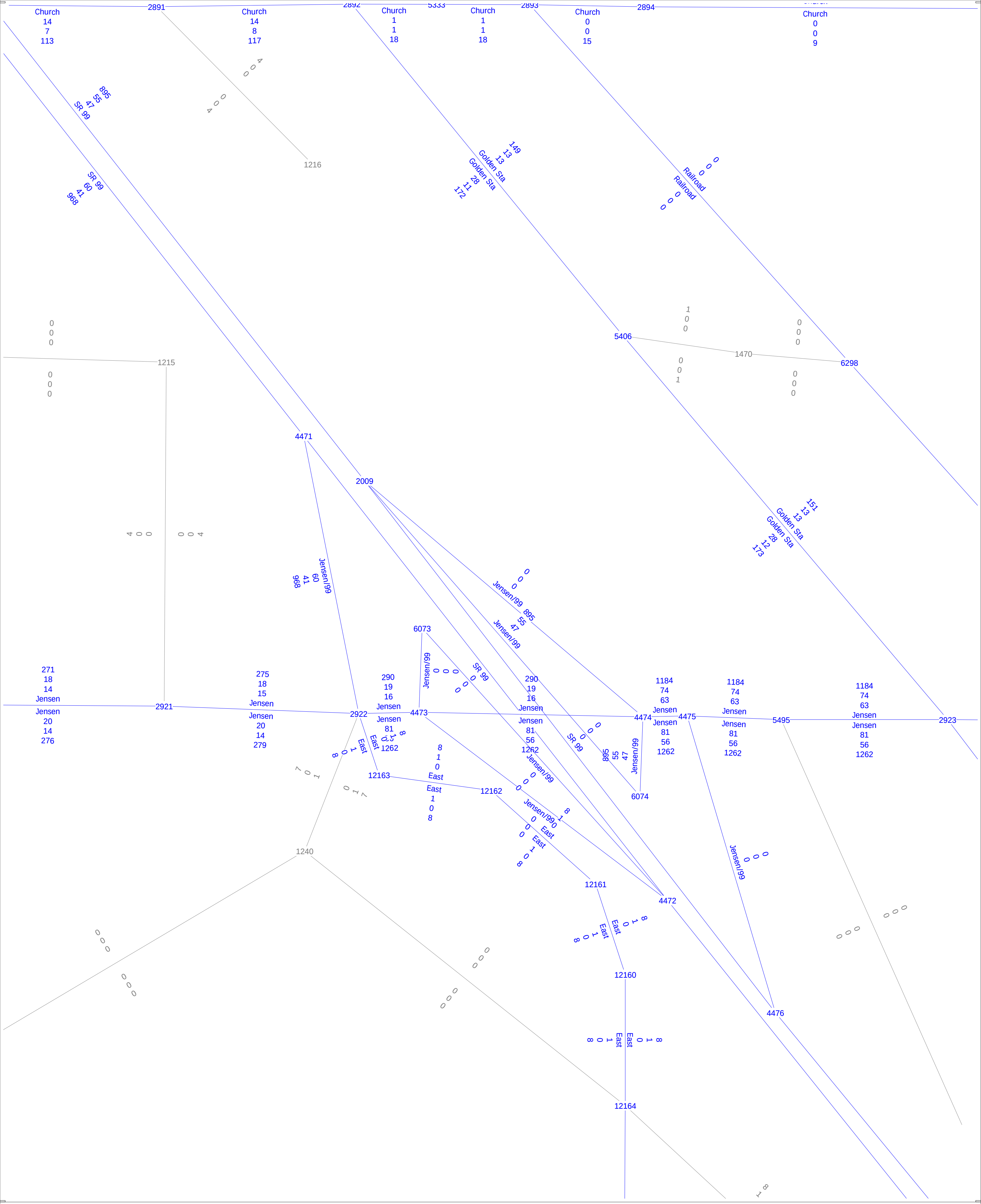

Cumulative Year 2035 Select Zone
AM, PM and Daily Volumes




Cumulative Year 2035 Select Zone
AM, PM and Daily Volumes

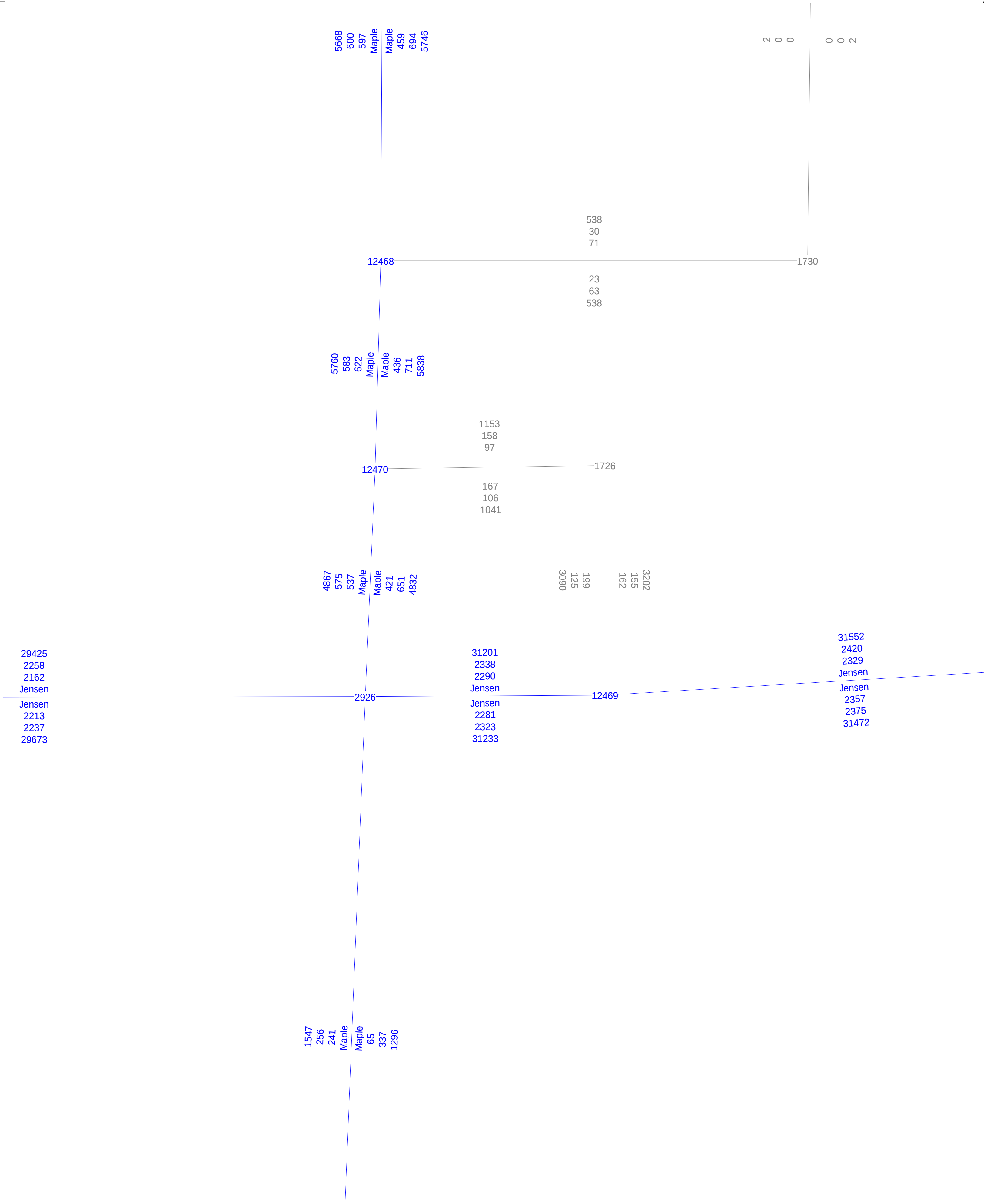



Cumulative Year 2035 Select Zone
AM, PM and Daily Volumes

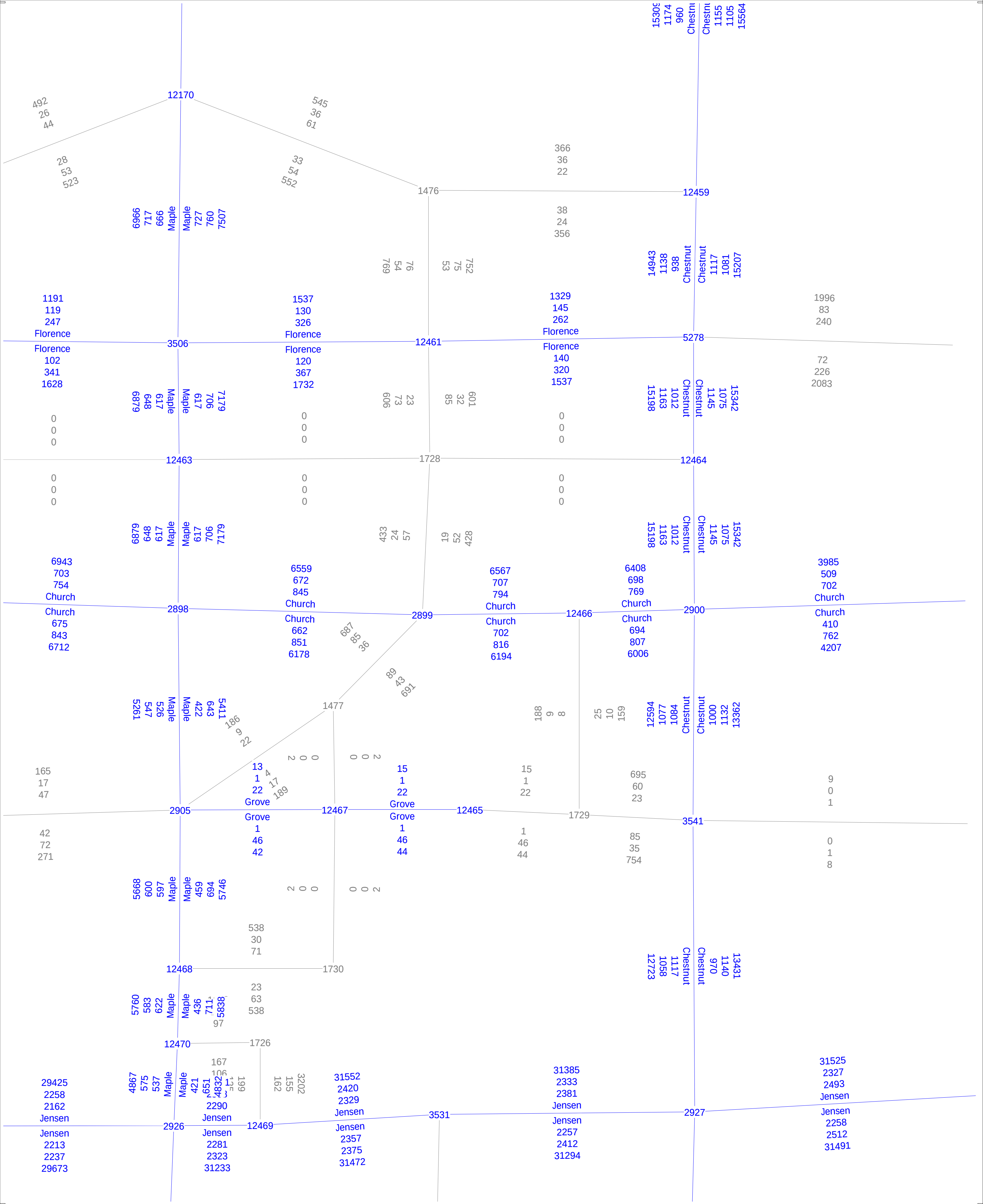



Cumulative Year 2035 Select Zone

AM, PM AND Daily Volumes



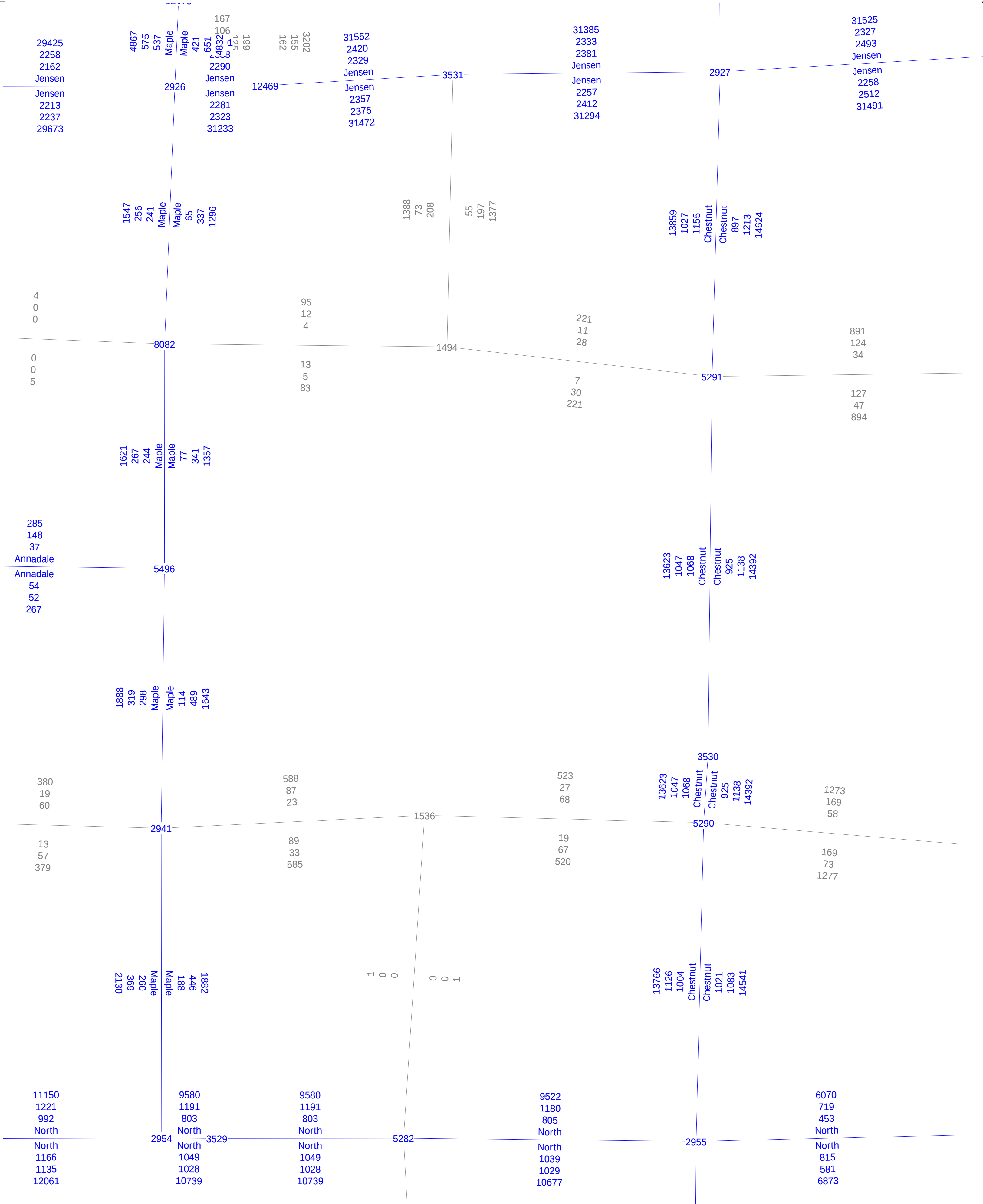

Cumulative Year 2035
AM, PM and Daily Volumes




Cumulative Year 2035
AM, PM and Daily Volumes

cube

(Licensed to JLB Traffic Engineering Inc)




Cumulative Year 2035

AM, PM and Daily Volumes

cube

--------------------------------------------------------------------------------

| | |
|---|---|
| Summaries for Zones | 1726 |

--------------------------------------------------------------------------------

Person Trips

------------------------------

| Purpose | Production | Attractions | Total |
|---|---|---|---|
| Home-Work | 147 | 310 | 457 |
| Home-Shop | 77 | 1195 | 1272 |
| Home-Other | 647 | 843 | 1490 |
| Work-Other | 164 | 424 | 588 |
| Other-Other | 1815 | 1816 | 3631 |
| Total Persons | 2850 | 4589 | 7439 |

------------------------------

Vehicle Trips

------------------------------

| Purpose | Production | Attractions | Total |
|---|---|---|---|
| Home-Work | 129 | 272 | 401 |
| Home-Shop | 53 | 824 | 877 |
| Home-Other | 279 | 363 | 642 |
| Work-Other | 149 | 385 | 535 |
| Other-Other | 1068 | 1068 | 2136 |
| Total Vehicles | 1678 | 2913 | 4591 |

------------------------------

| Average Trip Length | Time (Minutes) |
|---|---|
| Home-Work | 14.77 |
| Home-Shop | 14.08 |
| Home-Other | 12.44 |
| Work-Other | 13.26 |
| Other-Other | 11.75 |
| All Trips | 12.59 |

------------------------------

| Average Trip Length | Distance (Miles) |
|---|---|
| Home-Work | 7.95 |
| Home-Shop | 8.12 |
| Home-Other | 6.68 |
| Work-Other | 7.14 |
| Other-Other | 5.94 |
| All Trips | 6.68 |

# Appendix D: Methodology

## Levels of Service Methodology

The description and procedures for calculating capacity and level of service (LOS) are found in the Transportation Research Board, Highway Capacity Manual (HCM). The HCM 2010 represents the research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level of service (LOS), from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish a LOS.

## Urban Streets (Automobile Mode)

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas. Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials. Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals. Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing taxicabs, buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

### Flow Characteristics

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control.

The street environment includes the geometric characteristics of the facility, the character of roadside activity, and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway/access point density, spacing between signalized intersections, existence of parking, level of pedestrian and bicyclist activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic controls (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds; however, such controls are needed to establish right-of-way.

## Levels of Service (automobile Mode)

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service (LOS). The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

**LOS A** describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal. Travel speeds exceed 85 of the base free flow speed (FFS).

**LOS B** describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67 and 85 percent of the base FFS.

**LOS C** describes stable operations. The ability to maneuver and change lanes in midblock location may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50 and 67 percent of the base FFS.

**LOS D** indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volumes, inappropriate signal timing, at the boundary intersections. The travel speed is between 40 and 50 percent of the base FFS.

**LOS E** is characterized unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30 and 40 percent of the base FFS.

**LOS F** is characterized by street flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30 percent or less of the base FFS.

### Table A-1: Urban Street Levels of Service (Automobile Mode)

| Travel Speed as a Percentage of Base Free-Flow Speed (%) | LOS by Critical Volume-to-Capacity Ratio[a] | |
|---|---|---|
| | **≤1.0** | **>1.0** |
| >85 | A | F |
| >67 to 85 | B | F |
| >50 to 67 | C | F |
| >40 to 50 | D | F |
| >30 to 40 | E | F |
| ≤30 | F | F |

*a = The Critical volume-to-capacity ratio is based on consideration of the through movement-to-capacity ratio at each boundary intersection in the subject direction of travel. The critical volume-to-capacity ratio is the largest ratio of those considered.*
*Source: Highway Capacity Manual 2010, Exhibit 16-4. Urban Street LOS Criteria (Automobile Mode)*

## Intersection Levels of Service

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs.

### Signalized Intersections – Performance Measures

For signalized intersections the performance measures include automobile volume-to-capacity ratio, automobile delay, queue storage length, ratio of pedestrian delay, pedestrian circulation area, pedestrian perception score, bicycle delay, and bicycle perception score. LOS is also considered a performance measure. For the automobile mode average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A LOS designation is given to the weighted average control delay to better describe the level of operation. A description of LOS for signalized intersections is found in Table A-2.

## Table A-2: Signalized Intersection Level of Service Description (Automobile Mode)

| Level of Service | Description | Average Control Delay (seconds per vehicle) |
|---|---|---|
| A | Operations with a control delay of 10 seconds/vehicle or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when volume-to-capacity ratio is and either progression is exceptionally favorable or the cycle length is very short. If it's due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping. | ≤10 |
| B | Operations with control delay between 10.1 to 20.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A. | >10.0 to 20.0 |
| C | Operations with average control delays between 20.1 to 35.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping. | >20 to 35 |
| D | Operations with control delay between 35.1 to 55.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop, and i ndividual cycle failures are noticeable. | >35 to 55 |
| E | Operations with control delay between 55.1 to 80.0 seconds/vehicle and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent. | >55 to 80 |
| F | Operations with unacceptable control delay exceeding 80.0 seconds/vehicle and a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue. | >80 |

*Source: Highway Capacity Manual 2010*

## Unsignalized Intersections

The HCM 2010 procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, i. e., in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

### *All-Way Stop Controlled Intersections*

All-way stop controlled intersections is a form of traffic controls in which all approaches to an intersection are required to stop. Similar to signalized intersections, at all-way stop controlled intersections the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection as a whole. In other words the delay measured for all-way stop controlled intersections is a measure of the average delay for all vehicles passing through the intersection during the peak hour. A LOS designation is given to the weighted average control delay to better describe the level of operation.

### *Two-Way Stop Controlled Intersections*

Two-way stop controlled (TWSC) intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At TWSC intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS for TWSC intersection is determined by the computed or measured control delay for each minor movement. LOS is not defined for the intersection as a whole for three main reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at the typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay from all vehicles; and (c) the resulting low delay can mask important LOS deficiencies for minor movements. Table A-3 provides a description of LOS at unsignalized intersections.

***Table A-3: Unsignalized Intersection Level of Service Description (Automobile Mode)***

| **Control Delay (seconds per vehicle)** | **LOS by Volume-to-Capacity Ratio** | |
|---|---|---|
| | **v/c ≤ 1.0** | **v/c > 1.0** |
| ≤10 | A | F |
| >10 to 15 | B | F |
| >15 to 25 | C | F |
| >25 to 35 | D | F |
| >35 to 50 | E | F |
| >50 | F | F |

*Source: HCM 2010 Exhibit 19-1.*

# Appendix E: Collision Data

*Primary Rd* **CHESTNUT AV** *Distance (ft)* **250** *Direction* **N** *Secondary Rd* **DINUBA AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **11603** *Collision Date* **20140918** *Time* **0544** *Day* **THU**
*Primary Collision Factor* **UNKNOWN** *Violation* *Collision Type* **BROADSIDE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20150513**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - NO** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DRVR | 42 | M | H | HNBD | | UNS TURN | N | A | 0100 | NISSA | 1999 | - 3 | N | | - | M G | PASS | | 34 | F | 3 | 0 | M | G |
| 2 | DRVR | 55 | M | H | HNBD | | PASSING | N | A | 0100 | GMC | 1999 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **CHESTNUT AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **FLORENCE AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* *Beat* *Type* **0** *CalTrans* *Badge* **P1123** *Collision Date* **20141212** *Time* **0951** *Day* **FRI**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20160120**
*Weather1* **RAINING** *Weather2* *Rdwy Surface* *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 18 | F | H | HNBD | | LFT TURN | E | - | 0000 | HONDA | 2007 | - 3 | N | | - | L G | DRVR | COMP PN | 18 | F | 1 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | | 19 | M | 3 | 0 | L | G |
| 2 | DRVR | 35 | F | H | HNBD | | PROC ST | S | A | 0100 | CADIL | 2007 | - 3 | N | | - | M G | PASS | | 38 | F | 3 | 0 | M | G |

*Primary Rd* **CHESTNUT AV** *Distance (ft)* **200** *Direction* **S** *Secondary Rd* **HARVARD AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **030** *Type* **3** *CalTrans* *Badge* **019323** *Collision Date* **20140818** *Time* **2155** *Day* **MON**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20140916**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | PROC ST | N | D | 2200 | - | | - 3 | N | | - | - B | | | | | | | | |
| 2 | DRVR | 37 | F | B | HNBD | | PROC ST | N | A | 0800 | CHRYS | 2006 | - 3 | N | | - | M G | PASS | COMP PN | 64 | M | 3 | 0 | M | G |

*Primary Rd* **CHESTNUT AV** *Distance (ft)* **30** *Direction* **S** *Secondary Rd* **JENSEN AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **3162** *Beat* **03H** *Type* **0** *CalTrans* *Badge* **P731** *Collision Date* **20141122** *Time* **2320** *Day* **SAT**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152B** *Collision Type* **REAR END** *Severity* **FATAL** *#Killed* **2** *#Injured* **4** *Tow Away?* **Y** *Process Date* **20160210**
*Weather1* **CLOUDY** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **FELONY** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 31 | M | H | HBD-UI | | PROC ST | N | A | 0700 | SUZUK | 2008 | - 3 | A | 22350 | - | L G | DRVR | SEVERE | 31 | M | 1 | 0 | L | G |
| 2 | DRVR | 40 | F | H | IMP UNK | IMP UNK | STOPPED | N | A | 0700 | NISSA | 2006 | - 3 | N | | - | L G | DRVR | KILLED | 40 | F | 1 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | KILLED | 11 | F | 4 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | SEVERE | 17 | M | 6 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | SEVERE | 16 | F | 5 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | OTH VIS | 39 | M | 3 | 3 | L | G |
| 3 | DRVR | 18 | M | H | HNBD | | STOPPED | N | D | 2200 | FORD | 1997 | - 3 | N | | - | M G | PASS | | 19 | F | 3 | 0 | M | G |

*Primary Rd* **EAST JENSEN AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **SOUTH MAPLE AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **3060** *Beat* **00H** *Type* **0** *CalTrans* *Badge* **P1605** *Collision Date* **20140606** *Time* **0050** *Day* **FRI**
*Primary Collision Factor* **LANE CHANGE** *Violation* **21658A** *Collision Type* **SIDESWIPE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20160122**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 59 | M | H | HNBD | | CHANG LN | W | A | 0100 | NISSA | 2012 | - 3 | N | | - | L | G | | | | | | | | |
| 2 | DRVR | 38 | M | A | HNBD | | PROC ST | W | A | 0100 | ACURA | 1991 | - 3 | N | | - | M | G | DRVR | COMP PN | 38 | M | 1 | 0 | M | G |

*Primary Rd* **EAST JENSEN AV** *Distance (ft)* **898** *Direction* **W** *Secondary Rd* **SOUTH MAPLE AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **SOUTH** *Beat* **H3060** *Type* **0** *CalTrans* *Badge* **P1298** *Collision Date* **20140820** *Time* **2029** *Day* **WED**
*Primary Collision Factor* **WRONG SIDE** *Violation* **21651B** *Collision Type* **SIDESWIPE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20160217**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **FELONY** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | M | | IMP UNK | IMP UNK | WRONG WY | E | D | 2200 | NISSA | | - - | N | | - | M | B | | | | | | | | |
| 2 | DRVR | 22 | M | H | HNBD | | PROC ST | W | C | 0200 | KAWA | 2014 | - 3 | N | | - | W | - | DRVR | SEVERE | 22 | M | 1 | 1 | P | W |

*Primary Rd* **EAST KINGS CYN** *Distance (ft)* **0** *Direction* *Secondary Rd* **BACKER AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **FresnoRD** *County* **Fresno** *Population* **7** *Rpt Dist* **2661** *Beat* **00D** *Type* **0** *CalTrans* *Badge* **P1444** *Collision Date* **20140228** *Time* **1726** *Day* **FRI**
*Primary Collision Factor* **NOT STATED** *Violation* *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20160122**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **FELONY** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DRVR | 40 | M | B | | | PROC ST | S | A | 0100 | CHEVR | 1995 | - 3 | N | | - | - | B | | | | | | | | |
| 2 | DRVR | 20 | M | H | | | PROC ST | E | A | 0100 | HONDA | 1993 | - 3 | N | | - | - | - | | | | | | | | |

*Primary Rd* **EAST KINGS CYN** *Distance (ft)* **0** *Direction* *Secondary Rd* **CHESTNUT** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **FresnoRD** *County* **Fresno** *Population* **7** *Rpt Dist* **SE266** *Beat* **00D** *Type* **0** *CalTrans* *Badge* **P960** *Collision Date* **20141003** *Time* **1412** *Day* **FRI**
*Primary Collision Factor* **UNKNOWN** *Violation* *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20160219**
*Weather1* **OTHER** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **PED** *Lighting* **DAYLIGHT** *Ped Action* **X-WLK AT** *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DRVR | 65 | F | H | HNBD | | RGT TURN | W | A | 0800 | DODGE | 1996 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | PED | 17 | M | | | null | | - | N | 6000 | - | | - - | - | | - | - | - | | | | | | | | |

*Primary Rd* **EAST KINGS CYN** *Distance (ft)* **78** *Direction* **W** *Secondary Rd* **POLE NUMBER** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **FresnoRD** *County* **Fresno** *Population* **7** *Rpt Dist* **SE266** *Beat* **00D** *Type* **0** *CalTrans* *Badge* **P1131** *Collision Date* **20140110** *Time* **1545** *Day* **FRI**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20160126**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 35 | M | H | | DRUG | PROC ST | E | D | 2200 | NISSA | 2008 | - 3 | - | | - | L | G | DRVR | COMP PN | 35 | M | 9 | 3 | - | - |
| 2 | DRVR | 52 | M | H | HNBD | | STOPPED | S | A | 0100 | CHEVR | 2007 | - 3 | - | | - | M | G | | | | | | | | |

Primary Rd JENSEN AV | Distance (ft) 1584 | Direction E | Secondary Rd CEDAR AV | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 18939 | Collision Date 20140609 | Time 1443 | Day MON
Primary Collision Factor IMPROP TURN | Violation 22107 | Collision Type HIT OBJECT | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20150408
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With FIXED OBJ | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 22 | M | B | HNBD | FATG | UNS TURN | E | A | 0100 | NISSA | 2006 | - 3 | N | | - | L G | | | | | | | | |

Primary Rd JENSEN AV | Distance (ft) 0 | Direction | Secondary Rd CEDAR AV | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 016911 | Collision Date 20140715 | Time 2138 | Day TUE
Primary Collision Factor UNKNOWN | Violation | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 2 | Tow Away? Y | Process Date 20160330
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 CONS ZONE | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DARK - ST | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DRVR | 18 | M | H | HNBD | | PROC ST | E | A | 0100 | MERCE | 2000 | - 3 | N | | - | L G | DRVR | COMP PN | 18 | M | 1 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | COMP PN | 18 | F | 3 | 0 | L | G |
| 2 | DRVR | 23 | M | H | HNBD | | LFT TURN | W | D | 2200 | DODGE | 1996 | - 3 | N | | - | M G | PASS | | 25 | F | 3 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | | 4 | M | 0 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | | 0 | M | 2 | 0 | M | Q |

Primary Rd JENSEN AV | Distance (ft) 350 | Direction W | Secondary Rd CEDAR AV | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 019697 | Collision Date 20141031 | Time 1600 | Day FRI
Primary Collision Factor UNSAFE SPEED | Violation 22350 | Collision Type REAR END | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20150606
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 27 | F | H | HNBD | | PROC ST | E | A | 0100 | DODGE | 2003 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 26 | F | H | HNBD | | SLOWING | E | A | 0100 | VOLKS | 2003 | - 3 | N | | - | M G | | | | | | | | |
| 3 | DRVR | 50 | M | A | HNBD | | STOPPED | E | D | 2200 | TOYOT | 2004 | - 3 | N | | - | M G | | | | | | | | |

Primary Rd JENSEN AV | Distance (ft) 0 | Direction | Secondary Rd CEDAR AV | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 018883 | Collision Date 20141110 | Time 1600 | Day MON
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? Y | Process Date 20150114
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 60 | M | W | HNBD | | PROC ST | E | A | 0100 | FORD | 2010 | - 3 | N | | - | L G | | | | | | | | |
| 2 | DRVR | 43 | M | H | HNBD | | PROC ST | S | A | 0100 | HYUND | 2004 | - 3 | N | | - | L G | PASS | SEVERE | 37 | F | 3 | 0 | M | G |

Primary Rd JENSEN AV | Distance (ft) 32 | Direction W | Secondary Rd CHESTNUT AV | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 18609 | Collision Date 20140124 | Time 1625 | Day FRI
Primary Collision Factor UNSAFE SPEED | Violation 22350 | Collision Type REAR END | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? N | Process Date 20140604
Weather1 CLOUDY | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 40 | F | B | HNBD | | PROC ST | E | A | 0700 | CHEVR | 2011 | - 3 | N | | - | M G | DRVR | COMP PN | 64 | F | 1 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | | 5 | M | 4 | 0 | P | Q |

Primary Rd JENSEN AV | Distance (ft) 743 | Direction | Secondary Rd LYON AV | NCIC 1013 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Sanger | County Fresno | Population 3 | Rpt Dist M170 | Beat 001 | Type 0 | CalTrans | Badge M031 | Collision Date 20140422 | Time 1720 | Day TUE
Primary Collision Factor UNSAFE SPEED | Violation 22350 | Collision Type REAR END | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? N | Process Date 20150309
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | | OAF1 | Viol | OAF2 | Safety Equip | | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 30 | F | H | HNBD | | PROC ST | E | - | 0000 | PONTI | 2001 | - | 3 | N | | - | M | G | PASS | | 4 | F | 6 | 0 | P | Q |
| 2 | DRVR | 41 | M | H | HNBD | | STOPPED | E | - | 0000 | FORD | 1996 | - | 3 | N | | - | M | G | | | | | | | | |
| 3 | DRVR | 60 | F | H | HNBD | | STOPPED | E | - | 0000 | CHEVR | 1999 | - | 3 | N | | - | M | E | PASS | | 3 | F | 4 | 0 | P | Q |
| | | | | | | | | | | | | | | | | | | | | PASS | | 3 | M | 6 | 0 | P | T |

Primary Rd JENSEN AV | Distance (ft) 0 | Direction | Secondary Rd LYON AV | NCIC 1013 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Sanger | County Fresno | Population 3 | Rpt Dist SANGE | Beat 001 | Type 0 | CalTrans | Badge M109 | Collision Date 20140730 | Time 1120 | Day WED
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type REAR END | Severity INJURY | #Killed 0 | #Injured 3 | Tow Away? N | Process Date 20140903
Weather1 CLOUDY | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | | OAF1 | Viol | OAF2 | Safety Equip | | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 90 | M | W | HNBD | | PROC ST | S | - | 0000 | TOYOT | 2011 | - | 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 25 | F | H | HNBD | | PROC ST | W | - | 0000 | ACURA | 2000 | - | 3 | N | | - | M | G | DRVR | COMP PN | 25 | F | 1 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | | | PASS | COMP PN | 24 | M | 3 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | | | PASS | | 2 | M | 4 | 0 | P | T |
| | | | | | | | | | | | | | | | | | | | | PASS | COMP PN | 7 | F | 5 | 0 | P | T |
| | | | | | | | | | | | | | | | | | | | | PASS | | 1 | F | 6 | 0 | P | S |

Primary Rd JENSEN AV | Distance (ft) 90 | Direction W | Secondary Rd MAPLE AV | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 18809 | Collision Date 20140511 | Time 0235 | Day SUN
Primary Collision Factor DRVR ALC|DRG | Violation 23152A | Collision Type REAR END | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20150319
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DARK - ST | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | | OAF1 | Viol | OAF2 | Safety Equip | | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DRVR | 22 | F | H | HNBD | | SLOWING | E | A | 0100 | HONDA | 1995 | - | 3 | N | | - | M | G | | | | | | | | |
| 2F | DRVR | 29 | M | H | HBD-UI | | PROC ST | E | A | 0100 | TOYOT | 2007 | - | 3 | A | 22350 | - | L | G | | | | | | | | |

Primary Rd JENSEN AV | Distance (ft) 0 | Direction | Secondary Rd MAPLE AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist | Beat | Type 0 | CalTrans | Badge P586 | Collision Date 20141006 | Time 1001 | Day MON
Primary Collision Factor STOP SGN|SIG | Violation 21453A | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? Y | Process Date 20160121
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | | OAF1 | Viol | OAF2 | Safety Equip | | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 60 | M | H | HNBD | | PROC ST | W | D | 2200 | TOYOT | 1988 | - | 3 | N | | - | G | - | | | | | | | | |
| 2 | DRVR | 59 | F | A | HNBD | | LFT TURN | E | A | 0100 | HONDA | 2005 | - | 3 | N | | - | L | G | DRVR | COMP PN | 59 | F | 1 | 0 | L | G |

*Primary Rd* JENSEN AV *Distance (ft)* 200 *Direction* W *Secondary Rd* MAPLE AV *NCIC* 9435 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* UNINCORP. *County* Fresno *Population* 9 *Rpt Dist* *Beat* 034 *Type* 3 *CalTrans* *Badge* 18912 *Collision Date* 20141114 *Time* 1745 *Day* FRI
*Primary Collision Factor* UNSAFE SPEED *Violation* 22350 *Collision Type* REAR END *Severity* INJURY *#Killed* 0 *#Injured* 2 *Tow Away?* Y *Process Date* 20150120
*Weather1* CLEAR *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* NO UNUSL CND *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* *Motor Vehicle Involved With* OTHER MV *Lighting* DARK - ST *Ped Action* *Cntrl Dev* FNCTNG *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 33 | M | O | HNBD | | PROC ST | E | A | 0100 | TOYOT | 2012 | - 3 | N | | - | L G | | | | | | | | |
| 2 | DRVR | 32 | F | H | HNBD | | STOPPED | E | A | 0100 | TOYOT | 2010 | - 3 | N | | - | M G | PASS | COMP PN | 62 | F | 3 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | | 6 | F | 4 | 0 | P | Q |
| | | | | | | | | | | | | | | | | | | PASS | | 10 | F | 6 | 0 | P | G |
| 3 | DRVR | 28 | M | H | HNBD | | STOPPED | E | A | 0100 | HONDA | 1997 | - 3 | N | | - | P G | PASS | COMP PN | 37 | M | 3 | 0 | P | G |

*Primary Rd* JENSEN AV *Distance (ft)* 1584 *Direction* W *Secondary Rd* MARKS AV *NCIC* 9435 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* UNINCORP. *County* Fresno *Population* 9 *Rpt Dist* *Beat* 015 *Type* 3 *CalTrans* *Badge* 13535 *Collision Date* 20140224 *Time* 1445 *Day* MON
*Primary Collision Factor* UNSAFE SPEED *Violation* 22350 *Collision Type* REAR END *Severity* PDO *#Killed* 0 *#Injured* 0 *Tow Away?* N *Process Date* 20140828
*Weather1* CLEAR *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* NO UNUSL CND *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* *Motor Vehicle Involved With* OTHER MV *Lighting* DAYLIGHT *Ped Action* *Cntrl Dev* NT PRS/FCTR *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 41 | M | H | HNBD | | PROC ST | E | G | 2528 | FREIG | 2007 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 54 | M | H | HNBD | | SLOWING | E | G | 2531 | PETER | 2010 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* JENSEN AV *Distance (ft)* 0 *Direction* *Secondary Rd* MARKS AV *NCIC* 9435 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* UNINCORP. *County* Fresno *Population* 9 *Rpt Dist* *Beat* 015 *Type* 3 *CalTrans* *Badge* 017842 *Collision Date* 20140606 *Time* 0527 *Day* FRI
*Primary Collision Factor* STOP SGN|SIG *Violation* 22450A *Collision Type* BROADSIDE *Severity* PDO *#Killed* 0 *#Injured* 0 *Tow Away?* Y *Process Date* 20150406
*Weather1* CLEAR *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* NO UNUSL CND *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* MSDMNR *Motor Vehicle Involved With* OTHER MV *Lighting* DUSK/DAWN *Ped Action* *Cntrl Dev* FNCTNG *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | M | H | IMP UNK | IMP UNK | PROC ST | S | A | 0100 | - | | - 3 | N | | - | - - | | | | | | | | |
| 2 | DRVR | 54 | M | H | HNBD | | PROC ST | W | A | 0100 | VOLKS | 1994 | - 3 | N | | - | P G | | | | | | | | |

*Primary Rd* JENSEN AV *Distance (ft)* 1056 *Direction* E *Secondary Rd* MARKS AV *NCIC* 9435 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* UNINCORP. *County* Fresno *Population* 9 *Rpt Dist* *Beat* 015 *Type* 3 *CalTrans* *Badge* 018912 *Collision Date* 20140724 *Time* 1735 *Day* THU
*Primary Collision Factor* DRVR ALC|DRG *Violation* 23152A *Collision Type* REAR END *Severity* PDO *#Killed* 0 *#Injured* 0 *Tow Away?* Y *Process Date* 20150423
*Weather1* CLEAR *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* NO UNUSL CND *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* *Motor Vehicle Involved With* OTHER MV *Lighting* DAYLIGHT *Ped Action* *Cntrl Dev* NT PRS/FCTR *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 59 | M | H | HBD-UI | | PROC ST | E | A | 0100 | DODGE | 2002 | - 3 | A | 22350 | - | M G | | | | | | | | |
| 2 | DRVR | 23 | M | A | HNBD | | STOPPED | E | D | 2200 | TOYOT | 1994 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* JENSEN AV *Distance (ft)* 5 *Direction* W *Secondary Rd* MARKS AV *NCIC* 9435 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* UNINCORP. *County* Fresno *Population* 9 *Rpt Dist* *Beat* 040 *Type* 3 *CalTrans* *Badge* 17310 *Collision Date* 20141201 *Time* 1315 *Day* MON
*Primary Collision Factor* UNSAFE SPEED *Violation* 22350 *Collision Type* REAR END *Severity* PDO *#Killed* 0 *#Injured* 0 *Tow Away?* Y *Process Date* 20150723
*Weather1* CLEAR *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* NO UNUSL CND *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* MSDMNR *Motor Vehicle Involved With* OTHER MV *Lighting* DAYLIGHT *Ped Action* *Cntrl Dev* NT PRS/FCTR *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | PROC ST | E | D | 2200 | CHEVR | | - 3 | N | | - | B - | | | | | | | | |
| 2 | DRVR | 21 | F | B | HNBD | | SLOWING | E | A | 0100 | TOYOT | 1998 | - 3 | N | | - | M G | PASS | | 18 | F | 3 | 0 | M | G |

*Primary Rd* **MAPLE AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **FLORENCE AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* *Beat* *Type* **0** *CalTrans* *Badge* **P1123** *Collision Date* **20140505** *Time* **0915** *Day* **MON**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* *Process Date* **20160120**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 41 | F | H | HNBD | | LFT TURN | E | - | 0000 | DODGE | 1999 | - - | N | | - | M | G | DRVR | COMP PN | 41 | F | 1 | 0 | M | G |
| 2 | DRVR | 42 | M | A | HNBD | | PROC ST | S | - | 0000 | TOYOT | 2010 | - - | N | | - | L | G | | | | | | | | |

*Primary Rd* **MAPLE AV** *Distance (ft)* **65** *Direction* **S** *Secondary Rd* **JENSEN AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **15095** *Collision Date* **20140130** *Time* **1245** *Day* **THU**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152A** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20150127**
*Weather1* **CLOUDY** *Weather2* *Rdwy Surface* **WET** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT FNCT** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 40 | M | H | HBD-UI | | UNS TURN | S | E | 2235 | FORD | 1997 | - 3 | A | 22107 | - | M | G | | | | | | | | |

*Primary Rd* **MAPLE AV** *Distance (ft)* **59** *Direction* **S** *Secondary Rd* **KINGS CANYON** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* *Beat* *Type* **0** *CalTrans* *Badge* **P876** *Collision Date* **20140624** *Time* **1314** *Day* **TUE**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* *Process Date* **20160317**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 31 | M | H | HNBD | | | S | C | 0300 | OTHER | 2013 | - 3 | N | | - | W | - | DRVR | OTH VIS | 21 | M | 1 | 1 | P | W |
| 2 | DRVR | 41 | F | H | HNBD | | STOPPED | S | A | 0100 | CADIL | 2003 | - 3 | N | | - | M | G | PASS | | 20 | F | 3 | 0 | M | G |

*Primary Rd* **MAPLE AV** *Distance (ft)* **220** *Direction* **S** *Secondary Rd* **MALAGA AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **17842** *Collision Date* **20140406** *Time* **0006** *Day* **SUN**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152A** *Collision Type* **OVERTURNED** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20140718**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **NON-CLSN** *Lighting* **DARK - NO** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 25 | M | W | HBD-UI | | UNS TURN | S | C | 0200 | SUZUK | 2003 | - 3 | A | 22107 | N | P | W | DRVR | SEVERE | 25 | M | 1 | 1 | P | V |

*Primary Rd* **MAPLE AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **RICHMOND AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* *Beat* **04A** *Type* **0** *CalTrans* *Badge* **P948** *Collision Date* **20140606** *Time* **0812** *Day* **FRI**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20160324**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 31 | M | W | HNBD | | PROC ST | N | A | 0100 | INFIN | 1994 | - - | N | | - | M | B | | | | | | | | |
| 2 | DRVR | 46 | M | B | HNBD | | STOPPED | N | A | 0100 | MERCE | 2006 | - - | N | | - | M | G | PASS | | 11 | F | 3 | 3 | M | G |

*Primary Rd* **NORTH AV** *Distance (ft)* **1056** *Direction* **W** *Secondary Rd* **LEONARD AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **015095** *Collision Date* **20140430** *Time* **0940** *Day* **WED**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20140717**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 21 | M | H | HNBD | | UNS TURN | W | A | 0100 | CHRYS | 2006 | - | 3 | F | - | M G | DRVR | OTH VIS | 21 | M | 1 | 0 | M | G |

*Primary Rd* **NORTH AV** *Distance (ft)* **2** *Direction* **W** *Secondary Rd* **MAPLE AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **017138** *Collision Date* **20140901** *Time* **2050** *Day* **MON**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20150526**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 20 | M | H | HNBD | | UNS TURN | E | D | 2200 | CHEVR | 2006 | - | 3 | N | - | L G | | | | | | | | |
| 2 | DRVR | 20 | M | H | HNBD | | RAN OFF RD | W | A | 0100 | CHEVR | 1998 | - | 3 | N | - | L G | | | | | | | | |

*Primary Rd* **NORTH AV** *Distance (ft)* **128** *Direction* **W** *Secondary Rd* **MARKS AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **018939** *Collision Date* **20141013** *Time* **1834** *Day* **MON**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20150604**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 20 | M | H | HNBD | | UNS TURN | W | A | 0100 | TOYOT | 1996 | - | 3 | M | - | M G | | | | | | | | |

*Primary Rd* **NORTH AV** *Distance (ft)* **30** *Direction* **W** *Secondary Rd* **MINNEWAWA AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **015106** *Collision Date* **20140320** *Time* **0630** *Day* **THU**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20140626**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 35 | M | A | HNBD | | UNS TURN | W | A | 0700 | TOYOT | 2007 | - | 2 | N | - | M G | DRVR | COMP PN | 35 | M | 1 | 0 | M | G |

*Primary Rd* **NORTH AV** *Distance (ft)* **528** *Direction* **E** *Secondary Rd* **NEWCOMB AV** *NCIC* **9461** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **060** *Type* **3** *CalTrans* *Badge* **017029** *Collision Date* **20140428** *Time* **1515** *Day* **MON**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20150314**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 22 | M | H | IMP UNK | IMP UNK | RAN OFF RD | E | A | 0100 | SATUR | 2004 | - | 3 | N | - | L B | | | | | | | | |

Primary Rd **SOUTH CHESTNUT** Distance (ft) **0** Direction Secondary Rd **E ATCHINSON AV** NCIC **1005** State Hwy? **N** Route Postmile Prefix Postmile Side of Hwy
City **FresnoAV** County **Fresno** Population **7** Rpt Dist **SE296** Beat **00H** Type **0** CalTrans Badge **P1424** Collision Date **20140206** Time **1356** Day **THU**
Primary Collision Factor **NOT STATED** Violation Collision Type **REAR END** Severity **PDO** #Killed **0** #Injured **0** Tow Away? **Y** Process Date **20160201**
Weather1 **CLOUDY** Weather2 Rdwy Surface **WET** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Vehicle Involved With **OTHER MV** Lighting **DAYLIGHT** Ped Action Cntrl Dev **NT PRS/FCTR** Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 19 | M | H | HNBD | | PROC ST | N | A | 0100 | PONTI | 2005 | - - | A | 22350 | F | L G | PASS | | 17 | M | 3 | 0 | L | G |
| 2 | DRVR | 43 | M | H | HNBD | | STOPPED | N | A | 0100 | GILLI | 1994 | - 3 | N | | - | P G | | | | | | | | |

Primary Rd **SOUTH CHESTNUT** Distance (ft) **138** Direction **S** Secondary Rd **E BALCH AV** NCIC **1005** State Hwy? **N** Route Postmile Prefix Postmile Side of Hwy
City **FresnoAV** County **Fresno** Population **7** Rpt Dist **SE266** Beat **00D** Type **0** CalTrans Badge **P1006** Collision Date **20140114** Time **1810** Day **TUE**
Primary Collision Factor **UNSAFE SPEED** Violation **22350** Collision Type **REAR END** Severity **INJURY** #Killed **0** #Injured **1** Tow Away? **Y** Process Date **20160120**
Weather1 **CLEAR** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Vehicle Involved With **OTHER MV** Lighting **DARK - ST** Ped Action Cntrl Dev **FNCTNG** Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 31 | M | W | HNBD | | PROC ST | N | A | 0100 | MITSU | 2005 | - 3 | N | | - | M - | | | | | | | | |
| 2 | DRVR | 49 | F | B | HNBD | | PROC ST | N | D | 2200 | NISSA | 1995 | - 3 | N | | - | M G | PASS | COMP PN | 46 | F | 3 | 0 | M | G |
| 3 | DRVR | 62 | M | H | HNBD | | STOPPED | N | D | 2200 | GMC | 2006 | - 3 | N | | - | M G | | | | | | | | |

Primary Rd **SOUTH CHESTNUT** Distance (ft) **0** Direction Secondary Rd **E FLORENCE AV** NCIC **1005** State Hwy? **N** Route Postmile Prefix Postmile Side of Hwy
City **FresnoAV** County **Fresno** Population **7** Rpt Dist **2961** Beat **00H** Type **0** CalTrans Badge **P179** Collision Date **20140507** Time **0706** Day **WED**
Primary Collision Factor **UNSAFE SPEED** Violation **22350** Collision Type Severity **INJURY** #Killed **0** #Injured **3** Tow Away? **N** Process Date **20160120**
Weather1 **CLEAR** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Vehicle Involved With Lighting **DAYLIGHT** Ped Action Cntrl Dev **NT PRS/FCTR** Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 54 | M | B | HNBD | | PROC ST | E | A | 0100 | OLDSM | 1989 | - 2 | K | | - | G - | DRVR | OTH VIS | 54 | M | 1 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | COMP PN | 74 | F | 3 | 0 | - | - |
| | | | | | | | | | | | | | | | | | | PASS | COMP PN | 44 | M | 6 | 0 | M | H |

Primary Rd **SOUTH CHESTNUT** Distance (ft) **25** Direction Secondary Rd **E FLORENCE AV** NCIC **1005** State Hwy? **N** Route Postmile Prefix Postmile Side of Hwy
City **FresnoAV** County **Fresno** Population **7** Rpt Dist **2962** Beat **00H** Type **0** CalTrans Badge **P1382** Collision Date **20141210** Time **2113** Day **WED**
Primary Collision Factor **DRVR ALC|DRG** Violation **23152B** Collision Type **HEAD-ON** Severity **PDO** #Killed **0** #Injured **0** Tow Away? **N** Process Date **20160128**
Weather1 **CLEAR** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run **MSDMNR** Motor Vehicle Involved With **FIXED OBJ** Lighting **DARK - ST** Ped Action Cntrl Dev **FNCTNG** Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 22 | M | W | HBD-UI | | PROC ST | N | A | 0100 | FORD | 1998 | - 3 | A | 23152 | M | M B | PASS | | 23 | F | 3 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | | 18 | M | 6 | 0 | M | G |

Primary Rd **SOUTH CHESTNUT** Distance (ft) **21** Direction **N** Secondary Rd **E LANE AV** NCIC **1005** State Hwy? **N** Route Postmile Prefix Postmile Side of Hwy
City **FresnoAV** County **Fresno** Population **7** Rpt Dist **2661** Beat **00D** Type **0** CalTrans Badge **P1285** Collision Date **20140321** Time **2242** Day **FRI**
Primary Collision Factor **NOT STATED** Violation Collision Type **SIDESWIPE** Severity **INJURY** #Killed **0** #Injured **1** Tow Away? **N** Process Date **20160120**
Weather1 **CLEAR** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Vehicle Involved With **BICYCLE** Lighting **DARK - ST** Ped Action Cntrl Dev **FNCTNG** Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | BICY | 20 | M | H | HNBD | | WRONG WY | S | L | 0400 | - | | - 3 | M | | - | - - | BICY | COMP PN | 20 | M | 1 | 3 | - | - |
| 2 | | 21 | F | H | HNBD | | RGT TURN | N | - | 0000 | NISSA | 2014 | - 3 | - | | - | M E | | | | | | | | |

Primary Rd SOUTH CHESTNUT | Distance (ft) 0 | Direction | Secondary Rd EAST JENSEN AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City FresnoAV | County Fresno | Population 7 | Rpt Dist 3162 | Beat 00H | Type 0 | CalTrans | Badge P1123 | Collision Date 20140213 | Time 1241 | Day THU
Primary Collision Factor STOP SGN|SIG | Violation 21453A | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? Y | Process Date 20160121
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip 1 | Safety Equip 2 | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 53 | F | W | HNBD | | PROC ST | W | - | 0000 | FORD | 2006 | - 3 | N | | - | G | - | DRVR | COMP PN | 53 | F | 1 | 0 | G | - |
| 2 | DRVR | 21 | M | H | HNBD | | LFT TURN | S | - | 0000 | OLDSM | 1991 | - 3 | N | | - | M | G | | | | | | | | |

Primary Rd SOUTH CHESTNUT | Distance (ft) 20 | Direction | Secondary Rd EAST TULARE | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City FresnoAV | County Fresno | Population 7 | Rpt Dist S2662 | Beat 00D | Type 0 | CalTrans | Badge P1451 | Collision Date 20140129 | Time 2213 | Day WED
Primary Collision Factor DRVR ALC|DRG | Violation 23153A | Collision Type REAR END | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? Y | Process Date 20160119
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run FELONY | Motor Vehicle Involved With OTHER MV | Lighting DARK - ST | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip 1 | Safety Equip 2 | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 50 | M | H | HBD-UI | | PROC ST | N | A | 0100 | HONDA | 1999 | - 3 | A | 22350 | - | M | B | PASS | COMP PN | 47 | M | 3 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | | PASS | | 14 | M | 4 | 0 | M | G |
| 2 | DRVR | 44 | F | H | HNBD | | STOPPED | N | A | 0100 | HONDA | 2012 | - 3 | - | | - | M | G | | | | | | | | |

Primary Rd SOUTH CHESTNUT | Distance (ft) 0 | Direction | Secondary Rd S CHESTNUT AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City FresnoAV | County Fresno | Population 7 | Rpt Dist SE266 | Beat 00D | Type 0 | CalTrans | Badge P835 | Collision Date 20140214 | Time 1141 | Day FRI
Primary Collision Factor NOT STATED | Violation | Collision Type OTHER | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? N | Process Date 20160121
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With FIXED OBJ | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip 1 | Safety Equip 2 | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | BICY | 47 | M | | HNBD | | WRONG WY | S | L | 0400 | - | | - 3 | K | | - | - | - | BICY | COMP PN | 47 | M | 9 | 0 | P | - |
| 2 | DRVR | 82 | F | W | HNBD | | RGT TURN | N | - | 0000 | BUICK | 1999 | - - | N | | - | M | G | | | | | | | | |

Primary Rd SOUTH ELM AV | Distance (ft) 12 | Direction N | Secondary Rd E ANNADALE AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist 3155 | Beat 00H | Type 0 | CalTrans | Badge P1628 | Collision Date 20140924 | Time 2240 | Day WED
Primary Collision Factor IMPROP TURN | Violation 22100A | Collision Type SIDESWIPE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? N | Process Date 20160125
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run MSDMNR | Motor Vehicle Involved With OTHER MV | Lighting DARK - ST | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip 1 | Safety Equip 2 | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | RGT TURN | S | A | 0100 | CHEVR | 1989 | - - | A | 20002 | - | M | B | | | | | | | | |
| 2 | DRVR | 32 | M | B | HNBD | | STOPPED | E | A | 0100 | - | 1996 | - - | N | | - | M | G | PASS | | 37 | M | 3 | 0 | M | G |

Primary Rd SOUTH ELM AV | Distance (ft) 255 | Direction S | Secondary Rd E VINE AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist 3155 | Beat 00H | Type 0 | CalTrans | Badge P1096 | Collision Date 20141117 | Time 1710 | Day MON
Primary Collision Factor LANE CHANGE | Violation 21658A | Collision Type SIDESWIPE | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? Y | Process Date 20160121
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DARK - ST | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip 1 | Safety Equip 2 | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | CHANG LN | N | A | 0100 | - | | - - | N | | - | M | B | | | | | | | | |
| 2 | DRVR | 49 | M | B | HNBD | | PASSING | N | A | 0100 | FORD | 1999 | - 3 | N | | - | L | G | | | | | | | | |
| 3 | DRVR | 25 | M | B | HNBD | | PROC ST | S | A | 0100 | VOLKS | 2011 | - 3 | N | | - | L | G | PASS | COMP PN | 26 | F | 3 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | | PASS | | 2 | M | 5 | 0 | L | Q |

| PASS | 5 | F | 6 | 0 | L | Q |
|---|---|---|---|---|---|---|

Primary Rd: SOUTH ELM AV | Distance (ft): 0 | Direction: | Secondary Rd: EAST JENSEN AV | NCIC: 1005 | State Hwy?: N | Route: | Postmile Prefix: | Postmile: | Side of Hwy:
City: Fresno | County: Fresno | Population: 7 | Rpt Dist: 3156 | Beat: 00H | Type: 0 | CalTrans: | Badge: P1432 | Collision Date: 20140705 | Time: 2100 | Day: SAT
Primary Collision Factor: UNSAFE SPEED | Violation: 22350 | Collision Type: REAR END | Severity: INJURY | #Killed: 0 | #Injured: 1 | Tow Away?: N | Process Date: 20160120
Weather1: CLEAR | Weather2: | Rdwy Surface: DRY | Rdwy Cond1: NO UNUSL CND | Rdwy Cond2: | Spec Cond: 0
Hit and Run: | Motor Vehicle Involved With: OTHER MV | Lighting: DARK - ST | Ped Action: | Cntrl Dev: FNCTNG | Loc Type: | Ramp/Int:

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 44 | M | O | HNBD | | PROC ST | E | A | 0100 | LEXUS | 2001 | - 3 | A | 21703 | - | M G | | | | | | | | |
| 2 | DRVR | 49 | F | H | HNBD | | STOPPED | W | A | 0100 | ACURA | 2003 | - 3 | A | | - | M G | DRVR | COMP PN | 49 | F | 1 | 0 | M | G |

Primary Rd: SOUTH MAPLE AV | Distance (ft): 230 | Direction: N | Secondary Rd: E ANNADALE AV | NCIC: 1005 | State Hwy?: N | Route: | Postmile Prefix: | Postmile: | Side of Hwy:
City: Fresno | County: Fresno | Population: 7 | Rpt Dist: 3260 | Beat: 00F | Type: 0 | CalTrans: | Badge: P498 | Collision Date: 20140114 | Time: 1000 | Day: TUE
Primary Collision Factor: UNSAFE SPEED | Violation: 22350 | Collision Type: REAR END | Severity: PDO | #Killed: 0 | #Injured: 0 | Tow Away?: N | Process Date: 20160121
Weather1: CLEAR | Weather2: | Rdwy Surface: DRY | Rdwy Cond1: NO UNUSL CND | Rdwy Cond2: | Spec Cond: 0
Hit and Run: | Motor Vehicle Involved With: OTHER MV | Lighting: DAYLIGHT | Ped Action: | Cntrl Dev: NT PRS/FCTR | Loc Type: | Ramp/Int:

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 25 | F | B | HNBD | | SLOWING | N | A | 0100 | FORD | 2006 | - 3 | F | | - | M G | | | | | | | | |
| 2 | DRVR | 30 | M | H | HNBD | | PROC ST | N | - | 0035 | ISUZU | 2000 | - 3 | N | | - | P A | | | | | | | | |

Primary Rd: SOUTH MAPLE AV | Distance (ft): 120 | Direction: N | Secondary Rd: E FILLMORE AV | NCIC: 1005 | State Hwy?: N | Route: | Postmile Prefix: | Postmile: | Side of Hwy:
City: Fresno | County: Fresno | Population: 7 | Rpt Dist: SE266 | Beat: 00D | Type: 0 | CalTrans: | Badge: P1540 | Collision Date: 20140112 | Time: 2145 | Day: SUN
Primary Collision Factor: DRVR ALC|DRG | Violation: 23152A | Collision Type: REAR END | Severity: INJURY | #Killed: 0 | #Injured: 1 | Tow Away?: Y | Process Date: 20160126
Weather1: CLEAR | Weather2: | Rdwy Surface: DRY | Rdwy Cond1: NO UNUSL CND | Rdwy Cond2: | Spec Cond: 0
Hit and Run: | Motor Vehicle Involved With: PKD MV | Lighting: DARK - ST | Ped Action: | Cntrl Dev: NT PRS/FCTR | Loc Type: | Ramp/Int:

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 31 | M | H | HBD-UI | | PROC ST | N | A | 0100 | HONDA | 1991 | - 3 | A | 22107 | - | N G | DRVR | COMP PN | 31 | M | 1 | 3 | - | - |
| 2 | PRKD | 998 | - | | | | PARKED | N | F | 2600 | DODGE | 2003 | - - | N | | - | - - | | | | | | | | |

Primary Rd: SOUTH MAPLE AV | Distance (ft): 176 | Direction: N | Secondary Rd: E FILLMORE AV | NCIC: 1005 | State Hwy?: N | Route: | Postmile Prefix: | Postmile: | Side of Hwy:
City: Fresno | County: Fresno | Population: 7 | Rpt Dist: SE266 | Beat: 00C | Type: 0 | CalTrans: | Badge: P1623 | Collision Date: 20140920 | Time: 0140 | Day: SAT
Primary Collision Factor: IMPROP PASS | Violation: 21951 | Collision Type: AUTO/PED | Severity: INJURY | #Killed: 0 | #Injured: 1 | Tow Away?: N | Process Date: 20160125
Weather1: CLEAR | Weather2: | Rdwy Surface: DRY | Rdwy Cond1: NO UNUSL CND | Rdwy Cond2: | Spec Cond: 0
Hit and Run: FELONY | Motor Vehicle Involved With: PED | Lighting: DARK - ST | Ped Action: NOT IN X- | Cntrl Dev: NT PRS/FCTR | Loc Type: | Ramp/Int:

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DRVR | 998 | - | | IMP UNK | IMP UNK | PROC ST | E | A | 0100 | - | | - - | A | 20003 | - | M B | | | | | | | | |
| 2F | PED | 17 | M | H | HBD-UNK | | OTHER | E | N | 6000 | - | | - - | N | | - | - - | PED | OTH VIS | 17 | M | 9 | 3 | - | - |

Primary Rd: SOUTH MAPLE AV | Distance (ft): 0 | Direction: | Secondary Rd: E HAMILTON AV | NCIC: 1005 | State Hwy?: N | Route: | Postmile Prefix: | Postmile: | Side of Hwy:
City: Fresno | County: Fresno | Population: 7 | Rpt Dist: SE286 | Beat: 00H | Type: 0 | CalTrans: | Badge: P1591 | Collision Date: 20140322 | Time: 0302 | Day: SAT
Primary Collision Factor: STOP SGN|SIG | Violation: 22450A | Collision Type: BROADSIDE | Severity: PDO | #Killed: 0 | #Injured: 0 | Tow Away?: N | Process Date: 20160122
Weather1: CLEAR | Weather2: | Rdwy Surface: DRY | Rdwy Cond1: NO UNUSL CND | Rdwy Cond2: | Spec Cond: 0
Hit and Run: MSDMNR | Motor Vehicle Involved With: OTHER MV | Lighting: DARK - ST | Ped Action: | Cntrl Dev: NT PRS/FCTR | Loc Type: | Ramp/Int:

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | | | PROC ST | E | D | 2300 | FORD | 2005 | - - | A | 20002 | - | - - | | | | | | | | |
| 2 | DRVR | 38 | M | H | HNBD | | PROC ST | N | A | 0100 | NISSA | 1995 | - - | A | 20002 | - | L B | | | | | | | | |

*Primary Rd* **EAST JENSEN AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **S IVY AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **SW315** *Beat* **00H** *Type* **0** *CalTrans* *Badge* **P1651** *Collision Date* **20151005** *Time* **1720** *Day* **MON**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20160126**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **FELONY** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 15 | M | B | HNBD | | LFT TURN | W | A | 0100 | BMW | 1995 | - 3 | N | | - | L G | | | | | | | | |
| 2 | DRVR | 36 | F | W | HNBD | | PROC ST | - | A | 0100 | LEXUS | 1998 | - 3 | N | | - | L G | DRVR | SEVERE | 35 | F | 1 | 0 | L | G |

*Primary Rd* **EAST JENSEN AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **S WALNUT AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **3054** *Beat* **00H** *Type* **0** *CalTrans* *Badge* **P1161** *Collision Date* **20150606** *Time* **2045** *Day* **SAT**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20160126**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 41 | F | | HBD-UI | | PROC ST | S | A | 0100 | TOYOT | 2012 | - 3 | N | | - | L G | DRVR | COMP PN | 41 | F | 1 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | | 44 | M | 3 | 0 | M | G |
| 2 | DRVR | 45 | M | A | HNBD | | PROC ST | W | D | 2200 | TOYOT | 2002 | - 3 | N | | - | L G | | | | | | | | |

*Primary Rd* **EAST JENSEN AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **S WALNUT AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **SW305** *Beat* **00H** *Type* **0** *CalTrans* *Badge* **P844** *Collision Date* **20150719** *Time* **1250** *Day* **SUN**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20160129**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | M | H | HBD-UNK | | LFT TURN | E | A | 0100 | SATUR | 1996 | - 3 | N | | - | M B | PASS | COMP PN | 28 | M | 6 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | | 25 | M | 4 | 0 | M | G |
| 2 | DRVR | 39 | M | | HNBD | | PROC ST | W | A | 0800 | OLDSM | 2000 | - 3 | N | | - | M G | PASS | | 37 | F | 3 | 0 | M | F |
| | | | | | | | | | | | | | | | | | | PASS | | 16 | M | 3 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | | 14 | M | 5 | 0 | M | G |

*Primary Rd* **EAST JENSEN AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **SOUTH CEDAR AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **SE316** *Beat* **00F** *Type* **0** *CalTrans* *Badge* **P973** *Collision Date* **20150702** *Time* **1918** *Day* **THU**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20160203**
*Weather1* **CLOUDY** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | F | H | IMP UNK | IMP UNK | LFT TURN | E | D | 2200 | DODGE | 1996 | - - | N | | - | - B | | | | | | | | |

*Primary Rd* **EAST JENSEN AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **SOUTH CHESTNUT** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **SE316** *Beat* **00H** *Type* **0** *CalTrans* *Badge* **P710** *Collision Date* **20150417** *Time* **1000** *Day* **FRI**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152E** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **Y** *Process Date* **20160622**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 22 | M | W | | DRUG | PROC ST | W | A | 0700 | CHEVR | 2015 | - 3 | F | | - | L G | PASS | | 2 | F | 5 | 0 | P | Q |
| | | | | | | | | | | | | | | | | | | PASS | | 0 | M | 7 | 3 | P | R |

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | DRVR | 21 | F | W | HNBD | | PROC ST | N | A | 0700 | JEEP | 2007 | - 3 | N | | - | L | G | DRVR | COMP PN | 21 | F | 1 | 0 | L | E |
| 3 | DRVR | 44 | F | H | HNBD | | RGT TURN | S | A | 0100 | CHRYS | 2002 | - 3 | N | | - | L | G | DRVR | COMP PN | 44 | F | 1 | 0 | L | G |

*Primary Rd* EAST JENSEN AV *Distance (ft)* 0 *Direction* *Secondary Rd* SOUTH ELM AV *NCIC* 1005 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* Fresno *County* Fresno *Population* 7 *Rpt Dist* SW315 *Beat* 00H *Type* 0 *CalTrans* *Badge* P1665 *Collision Date* 20150715 *Time* 1725 *Day* WED
*Primary Collision Factor* STOP SGN|SIG *Violation* 21453A *Collision Type* BROADSIDE *Severity* INJURY *#Killed* 0 *#Injured* 1 *Tow Away?* Y *Process Date* 20160202
*Weather1* CLEAR *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* NO UNUSL CND *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* FELONY *Motor Vehicle Involved With* OTHER MV *Lighting* DAYLIGHT *Ped Action* *Cntrl Dev* FNCTNG *Loc Type* *Ramp/Int*

*Party Info* / *Victim Info*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 40 | M | H | HNBD | | PROC ST | W | A | 0100 | CHEVR | 2005 | - 3 | A | 21453 | F | L | G | | | | | | | | |
| 2 | DRVR | 18 | F | H | HNBD | | PROC ST | N | A | 0100 | HONDA | 1993 | - 3 | N | | - | L | G | DRVR | COMP PN | 18 | F | 1 | 0 | L | G |

*Primary Rd* EAST JENSEN AV *Distance (ft)* 0 *Direction* *Secondary Rd* SOUTH ELM AV *NCIC* 1005 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* Fresno *County* Fresno *Population* 7 *Rpt Dist* 3055 *Beat* 00H *Type* 0 *CalTrans* *Badge* 1653 *Collision Date* 20150816 *Time* 1956 *Day* SUN
*Primary Collision Factor* DRVR ALC|DRG *Violation* 23152A *Collision Type* BROADSIDE *Severity* PDO *#Killed* 0 *#Injured* 0 *Tow Away?* Y *Process Date* 20160203
*Weather1* CLEAR *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* NO UNUSL CND *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* MSDMNR *Motor Vehicle Involved With* OTHER MV *Lighting* DAYLIGHT *Ped Action* *Cntrl Dev* FNCTNG *Loc Type* *Ramp/Int*

*Party Info* / *Victim Info*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 42 | M | H | HBD-UI | | ENT TRAF | E | A | 0100 | HONDA | 1990 | - - | A | 21453 | - | M | B | | | | | | | | |
| 2 | DRVR | 19 | F | A | HNBD | | PROC ST | N | A | 0100 | TOYOT | 1998 | - 3 | N | | - | P | G | PASS | | 9 | M | 4 | 0 | P | G |
| 3 | DRVR | 46 | F | B | HNBD | | LFT TURN | S | A | 0100 | DODGE | 2010 | - 3 | N | | - | M | H | | | | | | | | |

*Primary Rd* EAST KINGS CYN *Distance (ft)* 110 *Direction* W *Secondary Rd* S JACKSON AV *NCIC* 1005 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* FresnoAV *County* Fresno *Population* 7 *Rpt Dist* SE266 *Beat* 00C *Type* 0 *CalTrans* *Badge* P689 *Collision Date* 20150913 *Time* 0700 *Day* SUN
*Primary Collision Factor* OTHER HAZ *Violation* 21209A *Collision Type* REAR END *Severity* INJURY *#Killed* 0 *#Injured* 1 *Tow Away?* N *Process Date* 20160125
*Weather1* CLOUDY *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* NO UNUSL CND *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* FELONY *Motor Vehicle Involved With* BICYCLE *Lighting* DUSK/DAWN *Ped Action* *Cntrl Dev* NT PRS/FCTR *Loc Type* *Ramp/Int*

*Party Info* / *Victim Info*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | BICY | 81 | M | H | HBD-NUI | | PROC ST | W | L | 0400 | - | | - - | N | | - | - | - | BICY | OTH VIS | 81 | M | 0 | 3 | P | - |
| 2F | DRVR | 998 | - | | IMP UNK | IMP UNK | PROC ST | W | A | 0100 | CHEVR | | - - | - | | - | - | - | | | | | | | | |

*Primary Rd* EAST KINGS CYN *Distance (ft)* 0 *Direction* *Secondary Rd* S TEMPERANCE *NCIC* 1005 *State Hwy?* N *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* FresnoAV *County* Fresno *Population* 7 *Rpt Dist* SE267 *Beat* 00A *Type* 0 *CalTrans* *Badge* P973 *Collision Date* 20150617 *Time* 1932 *Day* WED
*Primary Collision Factor* STOP SGN|SIG *Violation* 21453A *Collision Type* HEAD-ON *Severity* INJURY *#Killed* 0 *#Injured* 3 *Tow Away?* Y *Process Date* 20160128
*Weather1* *Weather2* *Rdwy Surface* DRY *Rdwy Cond1* *Rdwy Cond2* *Spec Cond* 0
*Hit and Run* *Motor Vehicle Involved With* *Lighting* DAYLIGHT *Ped Action* *Cntrl Dev* FNCTNG *Loc Type* *Ramp/Int*

*Party Info* / *Victim Info*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 44 | F | H | HNBD | | PROC ST | S | A | 0100 | CHRYS | 2006 | - 3 | N | | - | L | G | DRVR | OTH VIS | 44 | F | 1 | 0 | L | G |
| 2 | DRVR | 34 | F | A | HNBD | | LFT TURN | N | A | 0800 | CHEVR | 2002 | - 3 | N | | - | L | G | DRVR | COMP PN | 34 | F | 1 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | | PASS | COMP PN | 12 | M | 5 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | | PASS | | 13 | F | 3 | 0 | L | G |

*Primary Rd* **MAPLE AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **CLINTON AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **030** *Type* **3** *CalTrans* *Badge* **018914** *Collision Date* **20150403** *Time* **2000** *Day* **FRI**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21801A** *Collision Type* **HEAD-ON** *Severity* **INJURY** *#Killed* **0** *#Injured* **4** *Tow Away?* **Y** *Process Date* **20150507**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

Party Info

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 20 | M | H | HNBD | | LFT TURN | S | A | 0100 | ACURA | 1995 | - | 3 | N | - | L | G |
| 2 | DRVR | 30 | M | H | HBD-UI | | PROC ST | N | A | 0100 | TOYOT | 2001 | - | 3 | N | - | L | G |

Victim Info

| ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|
| DRVR | COMP PN | 20 | M | 1 | 0 | L | G |
| PASS | OTH VIS | 20 | F | 4 | 0 | P | G |
| PASS | OTH VIS | 40 | M | 3 | 0 | L | G |
| DRVR | COMP PN | 30 | M | 1 | 0 | L | G |

*Primary Rd* **MAPLE AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **GOLDEN STATE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **019932** *Collision Date* **20150611** *Time* **1457** *Day* **THU**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20150721**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

Party Info

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 73 | M | O | HNBD | | PROC ST | E | D | 2200 | TOYOT | 1999 | - | 3 | N | - | L | G |
| 2 | DRVR | 32 | M | W | HNBD | | PROC ST | S | D | 2200 | FORD | 2000 | - | 3 | N | - | M | G |

Victim Info

| ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|
| DRVR | COMP PN | 73 | M | 1 | 0 | L | G |

*Primary Rd* **MAPLE AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **JENSEN AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **018284** *Collision Date* **20150519** *Time* **1609** *Day* **TUE**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21801A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20150625**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

Party Info

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 26 | M | H | HNBD | | LFT TURN | N | A | 0100 | ACURA | 2003 | - | 3 | N | - | M | G |
| 2 | DRVR | 46 | M | H | HNBD | | PROC ST | S | F | 2600 | FORD | 1963 | - | 3 | N | - | P | A |

Victim Info

| ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|
| DRVR | COMP PN | 26 | M | 1 | 0 | M | G |
| PASS | | 29 | M | 2 | 0 | P | A |
| PASS | | 37 | M | 3 | 0 | P | A |

*Primary Rd* **MAPLE AV** *Distance (ft)* **51** *Direction* **N** *Secondary Rd* **MCKENZIE AV** *NCIC* **1005** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* **SOUTH** *Beat* **00D** *Type* **0** *CalTrans* *Badge* **P1131** *Collision Date* **20151030** *Time* **1227** *Day* **FRI**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **OTHER** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20160516**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

Party Info

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 27 | F | H | HNBD | | LFT TURN | N | A | 0100 | HYUND | 2013 | - | 3 | - | - | N | G |
| 2 | DRVR | 21 | M | B | HNBD | | PROC ST | N | A | 0100 | NISSA | 2004 | - | 3 | - | - | L | G |

Victim Info

| ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|
| DRVR | COMP PN | 27 | F | 1 | 3 | - | - |
| PASS | | 8 | F | 5 | 0 | M | G |
| PASS | | 22 | M | 3 | 0 | M | G |

*Primary Rd* **JENSEN AV** *Distance (ft)* **30** *Direction* **W** *Secondary Rd* **MAPLE AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **19113** *Collision Date* **20150630** *Time* **1355** *Day* **TUE**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20151109**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | F | H | IMP UNK | IMP UNK | PROC ST | E | A | 0700 | CHEVR | | - 3 | N | | - | B - | | | | | | | | |
| 2 | DRVR | 37 | F | A | HNBD | | STOPPED | E | A | 0100 | TOYOT | 1999 | - 3 | N | | - | M G | | | | | | | | |
| 3 | DRVR | 33 | F | H | HNBD | | STOPPED | E | D | 2200 | CHEVR | 2003 | - 3 | N | | - | M G | PASS | | 8 | F | 4 | 0 | P | G |
| | | | | | | | | | | | | | | | | | | PASS | | 998 | M | 5 | 0 | P | Q |
| | | | | | | | | | | | | | | | | | | PASS | | 4 | F | 6 | 0 | P | Q |

*Primary Rd* **JENSEN AV** *Distance (ft)* **1584** *Direction* **W** *Secondary Rd* **MARKS AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **019032** *Collision Date* **20150111** *Time* **0130** *Day* **SUN**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152A** *Collision Type* **HIT OBJECT** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20150225**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 45 | M | H | HBD-UI | | RAN OFF RD | E | D | 2200 | GMC | 1990 | - 3 | A | 22107 | - | M G | DRVR | OTH VIS | 45 | M | 1 | 0 | M | G |

*Primary Rd* **JENSEN AV** *Distance (ft)* **0** *Direction* *Secondary Rd* **MARKS AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **014650** *Collision Date* **20150212** *Time* **1855** *Day* **THU**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **4** *Tow Away?* **Y** *Process Date* **20150309**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - NO** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 42 | M | B | HBD-UI | | PROC ST | N | A | 0800 | DODGE | 2000 | - 3 | A | 22450 | - | L G | DRVR | SEVERE | 42 | M | 1 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | COMP PN | 33 | M | 3 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | OTH VIS | 34 | M | 9 | 0 | P | A |
| 2 | DRVR | 49 | M | H | HNBD | | LFT TURN | W | A | 0700 | CHEVR | 1994 | - 3 | N | | - | P G | DRVR | COMP PN | 49 | M | 1 | 0 | P | G |

*Primary Rd* **JENSEN AV** *Distance (ft)* **5280** *Direction* **E** *Secondary Rd* **MARKS AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **15181** *Collision Date* **20150708** *Time* **1620** *Day* **WED**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20151123**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 25 | M | H | HNBD | | UNS TURN | E | A | 0800 | TOYOT | 2005 | - 3 | N | | - | L G | | | | | | | | |

*Primary Rd* **JENSEN AV** *Distance (ft)* **40** *Direction* **E** *Secondary Rd* **MCCALL AV** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **14650** *Collision Date* **20150402** *Time* **1150** *Day* **THU**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152A** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **N** *Process Date* **20150424**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 60 | M | W | HBD-UI | | PROC ST | W | D | 2200 | CHEVR | 2004 | - 3 | A | 22350 | - | M G | | | | | | | | |
| 2 | DRVR | 51 | M | H | HNBD | | STOPPED | W | A | 0700 | FORD | 1998 | - 3 | N | | - | M G | DRVR | COMP PN | 51 | M | 1 | 0 | M | G |

Primary Rd JENSEN AVE Distance (ft) 75 Direction E Secondary Rd HIGHLAND AVE. NCIC 9435 State Hwy? N Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County Fresno Population 9 Rpt Dist Beat 034 Type 3 CalTrans Badge 014547 Collision Date 20150908 Time 1050 Day TUE
Primary Collision Factor IMPROP TURN Violation 22107 Collision Type HIT OBJECT Severity INJURY #Killed 0 #Injured 1 Tow Away? Y Process Date 20151020
Weather1 OTHER Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Vehicle Involved With FIXED OBJ Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 24 | F | H | HNBD | | UNS TURN | E | A | 0100 | CADI | 2007 | - 3 | N | | - | M | G | DRVR | COMP PN | 24 | F | 1 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | | PASS | | 2 | M | 5 | 0 | P | Q |

Primary Rd JENSEN AVE Distance (ft) 25 Direction W Secondary Rd PROSPECT AVE NCIC 9435 State Hwy? N Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County Fresno Population 9 Rpt Dist Beat 015 Type 3 CalTrans Badge 013112 Collision Date 20150827 Time 0740 Day THU
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type SIDESWIPE Severity INJURY #Killed 0 #Injured 1 Tow Away? N Process Date 20151019
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Vehicle Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 35 | M | H | HNBD | | PROC ST | W | D | 2200 | NISS | 2001 | - 3 | N | | - | M | G | DRVR | COMP PN | 35 | M | 1 | 0 | M | G |
| 2 | DRVR | 63 | M | W | HNBD | | RGT TURN | W | A | 0100 | PONT | 1999 | - 3 | N | | - | M | G | | | | | | | | |
| 3 | PRKD | 998 | - | | | | PARKED | N | A | 0800 | PLYM | 1996 | - 3 | N | | - | - | - | | | | | | | | |
| 4 | PRKD | 998 | - | | IMP UNK | IMP UNK | PARKED | N | A | 0800 | TOYT | 2012 | - 3 | N | | - | - | - | | | | | | | | |

Primary Rd JENSEN AVE Distance (ft) 0 Direction Secondary Rd TEMPERANCE AVE NCIC 9435 State Hwy? N Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County Fresno Population 9 Rpt Dist 21801A Beat 034 Type 3 CalTrans Badge 017310 Collision Date 20151203 Time 0845 Day THU
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type BROADSIDE Severity INJURY #Killed 0 #Injured 1 Tow Away? Y Process Date 20151231
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Vehicle Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 48 | M | W | HNBD | | LFT TURN | E | D | 2200 | CHEV | 2000 | - 3 | N | | - | P | G | | | | | | | | |
| 2 | DRVR | 59 | F | H | HNBD | | PROC ST | W | A | 0100 | CHEV | 2015 | - 3 | N | | - | L | G | DRVR | SEVERE | 59 | F | 1 | 0 | L | G |

Primary Rd JENSEN AVE Distance (ft) 15 Direction E Secondary Rd THORNE AVE NCIC 9435 State Hwy? N Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County Fresno Population 9 Rpt Dist Beat 015 Type 3 CalTrans Badge 016911 Collision Date 20151208 Time 2344 Day TUE
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type SIDESWIPE Severity PDO #Killed 0 #Injured 0 Tow Away? N Process Date 20160114
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 OBSTR ON RD Rdwy Cond2 NO UNUSL CND Spec Cond 0
Hit and Run Motor Vehicle Involved With PKD MV Lighting DARK - NO Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 60 | F | W | HNBD | | PROC ST | E | A | 0100 | CHEVY | 2008 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | PRKD | 998 | - | | | | PARKED | N | - | 9800 | DODG | 2014 | - 3 | N | | - | - | - | | | | | | | | |

Primary Rd JENSEN AVE E/B Distance (ft) 100 Direction E Secondary Rd MAPLE AVE NCIC 9435 State Hwy? N Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County Fresno Population 9 Rpt Dist Beat 034 Type 3 CalTrans Badge 019327 Collision Date 20150918 Time 1555 Day FRI
Primary Collision Factor IMPROP TURN Violation 22107 Collision Type HEAD-ON Severity INJURY #Killed 0 #Injured 1 Tow Away? N Process Date 20151019
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Vehicle Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 27 | M | H | HNBD | | UNS TURN | W | A | 0100 | HONDA | 2001 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 64 | F | B | HNBD | | PROC ST | E | A | 0700 | LINC | 2001 | - 3 | N | | - | M | G | DRVR | COMP PN | 64 | F | 1 | 0 | M | G |

Primary Rd MAPLE AV | Distance (ft) 41 | Direction S | Secondary Rd SHEILDS AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist 2161 | Beat 04H | Type 0 | CalTrans | Badge P948 | Collision Date 20150923 | Time 1344 | Day WED
Primary Collision Factor DRVR ALC|DRG | Violation 23152B | Collision Type SIDESWIPE | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? Y | Process Date 20160126
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 70 | M | H | HBD-UI | | UNS TURN | N | D | 2200 | NISSA | 1988 | - 3 | A | 22350 | - | M H | DRVR | SEVERE | 70 | M | 1 | 1 | M | H |
| 2 | DRVR | 24 | F | H | HNBD | | STOPPED | N | A | 0100 | SATUR | 2007 | - 3 | N | | - | M G | | | | | | | | |
| 3 | DRVR | 44 | M | H | HNBD | | STOPPED | N | D | 2200 | TOYOT | 2000 | - 3 | N | | - | M G | | | | | | | | |

Primary Rd MAPLE AV | Distance (ft) 20 | Direction N | Secondary Rd SHEPHERD AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist 0861 | Beat 04A | Type 0 | CalTrans | Badge P948 | Collision Date 20150410 | Time 1113 | Day FRI
Primary Collision Factor DRVR ALC|DRG | Violation 23152A | Collision Type REAR END | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20160205
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 28 | M | B | HBD-UI | | PROC ST | S | A | 0100 | CADIL | 2003 | - 3 | A | 22350 | - | M G | | | | | | | | |
| 2 | DRVR | 27 | F | H | HNBD | | STOPPED | S | A | 0700 | LEXUS | 2012 | - 3 | N | | - | M G | | | | | | | | |

Primary Rd MAPLE AVE | Distance (ft) 0 | Direction | Secondary Rd AMERICAN AVE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 015 | Type 3 | CalTrans | Badge 013112 | Collision Date 20150905 | Time 1235 | Day SAT
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type BROADSIDE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20151019
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 20 | F | H | HNBD | | PROC ST | E | A | 0100 | TOYT | 2010 | - 3 | N | | - | M G | PASS | | 22 | M | 3 | 0 | M | G |
| 2 | DRVR | 19 | M | W | HNBD | | PROC ST | S | D | 2200 | CHEV | 1998 | - 3 | N | | - | M G | PASS | | 17 | M | 3 | 0 | M | G |

Primary Rd MAPLE AVE | Distance (ft) 34 | Direction S | Secondary Rd AMERICAN AVE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 015 | Type 3 | CalTrans | Badge 013112 | Collision Date 20150926 | Time 1230 | Day SAT
Primary Collision Factor STOP SGN|SIG | Violation 22450A | Collision Type BROADSIDE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20151019
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 75 | M | O | HNBD | | LFT TURN | W | F | 2500 | FRHT | 1994 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 43 | M | W | HNBD | | PROC ST | S | G | 2532 | FRHT | 2012 | - 3 | N | | - | M G | | | | | | | | |

Primary Rd MAPLE AVE | Distance (ft) 20 | Direction S | Secondary Rd NORTH AVE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 019610 | Collision Date 20151205 | Time 2500 | Day SAT
Primary Collision Factor UNSAFE SPEED | Violation 22350 | Collision Type HIT OBJECT | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? N | Process Date 20160104
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run MSDMNR | Motor Vehicle Involved With FIXED OBJ | Lighting DARK - NO | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | PROC ST | S | - | 9900 | - | | - 3 | N | | - | B B | | | | | | | | |

*Primary Rd* **CHESTNUT AVE** *Distance (ft)* **80** *Direction* **N** *Secondary Rd* **CLINTON AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* *Beat* **025** *Type* **3** *CalTrans* *Badge* **017310** *Collision Date* **20161127** *Time* **1000** *Day* **SUN**
*Primary Collision Factor* **OTHER EQPMNT** *Violation* **24002A** *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20161206**
*Weather1* **CLOUDY** *Weather2* *Rdwy Surface* **WET** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | M | W | IMP UNK | IMP UNK | PROC ST | N | E | 2232 | DODG | | - 3 | N | | - | P | P | | | | | | | | |
| 2 | PRKD | 33 | F | H | HNBD | | PARKED | N | I | 2000 | GILG | 2016 | - 3 | N | | - | - | | | | | | | | | |

*Primary Rd* **CHESTNUT AVE** *Distance (ft)* **75** *Direction* **S** *Secondary Rd* **JENSEN AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **020680** *Collision Date* **20160101** *Time* **1303** *Day* **FRI**
*Primary Collision Factor* **LANE CHANGE** *Violation* **21658A** *Collision Type* **SIDESWIPE** *Severity* **INJURY** *#Killed* **0** *#Injured* **3** *Tow Away?* **N** *Process Date* **20160204**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **FELONY** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | CHANG LN | S | - | 9900 | - | | - 3 | N | | - | B | B | | | | | | | | |
| 2 | DRVR | 20 | F | A | HNBD | | PROC ST | S | A | 0700 | HOND | 2015 | - 3 | N | | - | M | G | PASS | COMP PN | 27 | F | 3 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | | PASS | COMP PN | 18 | F | 6 | 0 | P | G |
| | | | | | | | | | | | | | | | | | | | PASS | COMP PN | 15 | F | 7 | 0 | P | G |
| | | | | | | | | | | | | | | | | | | | PASS | | 16 | M | 5 | 0 | P | G |
| | | | | | | | | | | | | | | | | | | | PASS | | 9 | M | 7 | 0 | P | G |

*Primary Rd* **CHESTNUT AVE** *Distance (ft)* **2112** *Direction* **N** *Secondary Rd* **KAMM AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **040** *Type* **3** *CalTrans* *Badge* **013112** *Collision Date* **20160611** *Time* **0620** *Day* **SAT**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20160616**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 31 | M | H | HNBD | | PROC ST | S | A | 0100 | HOND | 2007 | - 3 | N | | - | L | G | | | | | | | | |
| 2 | DRVR | 17 | F | H | HNBD | | LFT TURN | S | A | 0100 | HOND | 2000 | - 3 | N | | - | M | G | DRVR | COMP PN | 17 | F | 1 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | | PASS | | 21 | F | 3 | 0 | M | G |

*Primary Rd* **CHESTNUT AVE** *Distance (ft)* **1445** *Direction* **S** *Secondary Rd* **MANNING AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **040** *Type* **3** *CalTrans* *Badge* **017591** *Collision Date* **20160404** *Time* **0605** *Day* **MON**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20160415**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 34 | M | H | HNBD | | RAN OFF RD | N | A | 0100 | CHEV | 2009 | - 3 | N | | - | M | G | DRVR | COMP PN | 34 | M | 1 | 0 | M | G |

*Primary Rd* **CHESTNUT AVE** *Distance (ft)* **0** *Direction* *Secondary Rd* **MUSCAT AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **016730** *Collision Date* **20160314** *Time* **1455** *Day* **MON**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20160316**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 62 | M | H | HNBD | | LFT TURN | E | A | 0100 | HONDA | 2002 | - 3 | N | | - | M | G | | | | | | | | |

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | DRVR | 63 | M | W | HNBD | | LFT TURN | N | A | 0100 | CHEV | 2008 | - 3 | N | | - | M | G |

Primary Rd CHESTNUT AV | Distance (ft) 1210 | Direction S | Secondary Rd BULLARD AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist NE | Beat | Type 0 | CalTrans | Badge P1065 | Collision Date 20160219 | Time 1533 | Day FRI
Primary Collision Factor UNSAFE SPEED | Violation 22350 | Collision Type REAR END | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? N | Process Date 20160321
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 26 | M | W | HNBD | | PROC ST | S | A | 0100 | SUBAR | 2009 | - 3 | F | | - | L | G | | | | | | | | |
| 2 | DRVR | 19 | F | W | HNBD | | STOPPED | S | A | 0100 | TOYOT | 2012 | - 3 | N | | - | M | G | DRVR | COMP PN | 19 | F | 1 | 0 | M | G |

Primary Rd CHESTNUT AV | Distance (ft) 0 | Direction | Secondary Rd FLORENCE AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist SOUTH | Beat 00H | Type 0 | CalTrans | Badge P1117 | Collision Date 20160201 | Time 1739 | Day MON
Primary Collision Factor PED VIOL | Violation 21953 | Collision Type OTHER | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? N | Process Date 20160322
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With BICYCLE | Lighting DARK - ST | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | BICY | 9 | M | B | HNBD | | PROC ST | W | L | 0400 | - | | - 3 | N | | - | - | - | BICY | OTH VIS | 9 | M | 9 | 3 | - | - |
| 2 | DRVR | 39 | F | H | HNBD | | PROC ST | N | A | 0100 | CHEVR | 2008 | - 3 | N | | - | G | - | | | | | | | | |

Primary Rd CHESTNUT AV | Distance (ft) 87 | Direction N | Secondary Rd MATOIAN | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist 1662 | Beat 04B | Type 0 | CalTrans | Badge P874 | Collision Date 20160115 | Time 0752 | Day FRI
Primary Collision Factor DRVR ALC|DRG | Violation 23152B | Collision Type HIT OBJECT | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20160324
Weather1 CLOUDY | Weather2 | Rdwy Surface WET | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With FIXED OBJ | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 20 | F | H | HBD-UI | | RAN OFF RD | N | A | 0100 | HONDA | 1996 | - - | A | 22107 | - | M | G | PASS | | 20 | F | 3 | 0 | L | G |

Primary Rd CHESTNUT AV | Distance (ft) 0 | Direction | Secondary Rd NEVADA AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist SOUTH | Beat 2561 | Type 0 | CalTrans | Badge P645 | Collision Date 20160105 | Time 1413 | Day TUE
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? N | Process Date 20160323
Weather1 RAINING | Weather2 | Rdwy Surface WET | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 50 | M | H | HNBD | | PROC ST | W | - | 0000 | CHEVR | 2007 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 67 | M | A | HNBD | | PROC ST | S | - | 0000 | TOYOT | 1999 | - 3 | N | | - | M | G | PASS | COMP PN | 55 | F | 3 | 0 | M | G |

Primary Rd CHESTNUT AVE | Distance (ft) 15 | Direction N | Secondary Rd AMERICAN AVE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 015 | Type 3 | CalTrans | Badge 013112 | Collision Date 20160113 | Time 0730 | Day WED
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type SIDESWIPE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? N | Process Date 20160129
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 29 | M | O | HNBD | | RGT TURN | W | G | 2531 | FREI | 2015 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 55 | M | H | HNBD | | STOPPED | S | F | 2700 | KW | 2015 | - 3 | N | | - | M | G | | | | | | | | |
| 3 | DRVR | 21 | M | W | HNBD | | PROC ST | N | A | 0100 | JEEP | 1991 | - 3 | N | | - | M | G | | | | | | | | |

*Primary Rd* **MAPLE AVE** *Distance (ft)* **110** *Direction* **S** *Secondary Rd* **CORNELL AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **030** *Type* **3** *CalTrans* *Badge* **015026** *Collision Date* **20160425** *Time* **1059** *Day* **MON**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20160509**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 48 | F | B | HNBD | | PROC ST | S | A | 0700 | ACURA | 2007 | - 3 | N | | - | M G | PASS | COMP PN | 28 | F | 3 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | | 53 | F | 6 | 0 | P | G |
| 2 | DRVR | 31 | M | B | HNBD | | PROC ST | S | A | 0100 | DODGE | 2015 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **MAPLE AVE** *Distance (ft)* **0** *Direction* *Secondary Rd* **JENSEN AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **020060** *Collision Date* **20160819** *Time* **1343** *Day* **FRI**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21801A** *Collision Type* **BROADSIDE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20160826**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 41 | M | H | HNBD | | LFT TURN | N | D | 2200 | NISS | 2006 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 25 | M | H | HNBD | | PROC ST | S | D | 2200 | TOYO | 2016 | - 3 | N | | - | M G | PASS | | 57 | F | 3 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | | 5 | M | 6 | 0 | P | Q |

*Primary Rd* **MAPLE AVE** *Distance (ft)* **0** *Direction* *Secondary Rd* **NORTH AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **020060** *Collision Date* **20161205** *Time* **1635** *Day* **MON**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802B** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **Y** *Process Date* **20161212**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DUSK/DAWN** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 63 | F | H | HNBD | | LFT TURN | S | A | 0800 | TOYO | 2010 | - 3 | N | | - | L G | DRVR | COMP PN | 63 | F | 1 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | COMP PN | 5 | F | 4 | 0 | P | Q |
| 2 | DRVR | 59 | M | H | HNBD | | PROC ST | W | F | 2600 | GMC | 1999 | - 3 | N | | - | M G | PASS | | 22 | M | 3 | 0 | M | G |

*Primary Rd* **MAPLE AVE** *Distance (ft)* **50** *Direction* **N** *Secondary Rd* **WELDON AVE.** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **030** *Type* **3** *CalTrans* *Badge* **019610** *Collision Date* **20160529** *Time* **1925** *Day* **SUN**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20160609**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 19 | M | H | HNBD | | RAN OFF RD | S | A | 0100 | TOYT | 2001 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **MAPLE AVE.** *Distance (ft)* **0** *Direction* *Secondary Rd* **PRINCETON AVE.** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **030** *Type* **3** *CalTrans* *Badge* **020297** *Collision Date* **20160928** *Time* **1730** *Day* **WED**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21801A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20160929**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 30 | M | A | HNBD | | LFT TURN | N | A | 0100 | HOND | 1994 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 30 | F | H | HNBD | | PROC ST | S | A | 0700 | JEEP | 2012 | - 3 | N | | - | M G | DRVR | COMP PN | 30 | F | 1 | 0 | M | G |

*Primary Rd* **NORTH AVENUE** *Distance (ft)* **70** *Direction* **W** *Secondary Rd* **DEL REY AVENUE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **030** *Type* **3** *CalTrans* *Badge* **017327** *Collision Date* **20170322** *Time* **1050** *Day* **WED**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21804A** *Collision Type* **BROADSIDE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20170323**
*Weather1* **CLOUDY** *Weather2* **RAINING** *Rdwy Surface* **WET** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 45 | M | H | HNBD | | ENT TRAF | N | A | 0100 | HOND | 1996 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 56 | F | H | HNBD | | PROC ST | E | A | 0100 | HYUN | 2008 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **NORTH AVENUE** *Distance (ft)* **0** *Direction* *Secondary Rd* **DEL REY AVENUE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **020064** *Collision Date* **20170429** *Time* **0530** *Day* **SAT**
*Primary Collision Factor* **STOP SGN|SIG** *Violation* **22450A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **Y** *Process Date* **20170503**
*Weather1* **CLOUDY** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DUSK/DAWN** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 59 | M | H | HNBD | | PROC ST | S | A | 0700 | TOYT | 1991 | - 3 | N | | - | P G | DRVR | COMP PN | 59 | M | 1 | 0 | P | G |
| 2 | DRVR | 82 | F | H | HNBD | | PROC ST | W | A | 0800 | CHEV | 1984 | - 3 | N | | - | P G | DRVR | COMP PN | 82 | F | 1 | 0 | P | G |

*Primary Rd* **NORTH AVENUE** *Distance (ft)* **1000** *Direction* **E** *Secondary Rd* **FOWLER AVENUE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **014363** *Collision Date* **20170225** *Time* **1159** *Day* **SAT**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20170310**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 20 | M | W | HNBD | | PROC ST | E | D | 2200 | DODGE | 2017 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 24 | F | H | HNBD | | SLOWING | E | A | 0100 | NISSA | 2013 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **NORTH AVENUE** *Distance (ft)* **235** *Direction* **E** *Secondary Rd* **MAPLE AVENUE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **014363** *Collision Date* **20170626** *Time* **0725** *Day* **MON**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20170705**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 34 | M | W | HNBD | | PROC ST | E | D | 2200 | DODGE | 2015 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 27 | M | W | HNBD | | SLOWING | E | D | 2200 | CHEV | 1995 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **NORTH AVENUE** *Distance (ft)* **20** *Direction* **E** *Secondary Rd* **MCCALL AVENUE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **019962** *Collision Date* **20171106** *Time* **0100** *Day* **MON**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20171117**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | M | H | IMP UNK | IMP UNK | PROC ST | W | A | 0800 | CHEV | 2000 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 19 | F | H | HNBD | | STOPPED | W | A | 0100 | CHEV | 2012 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **40** *Direction* **E** *Secondary Rd* **WILLOW AVE.** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **030** *Type* **3** *CalTrans* *Badge* **020297** *Collision Date* **20171227** *Time* **1306** *Day* **WED**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20180102**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 23 | M | H | HNBD | | PROC ST | E | D | 2200 | CHEV | 2011 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 45 | F | A | HNBD | | SLOWING | E | A | 0100 | BMW | 2003 | - 3 | N | | - | M G | DRVR | POSSIBL | 45 | F | 1 | 0 | M | G |
| 3 | DRVR | 31 | F | H | HNBD | | STOPPED | E | A | 0100 | FORD | 2001 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **30** *Direction* **W** *Secondary Rd* **ARTHUR AVENUE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **019648** *Collision Date* **20170416** *Time* **2205** *Day* **SUN**
*Primary Collision Factor* **DRVR ALC|DRG** *Violation* **23152A** *Collision Type* **OVERTURNED** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20170425**
*Weather1* **RAINING** *Weather2* *Rdwy Surface* **WET** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DARK - NO** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 69 | M | B | HBD-UI | | UNS TURN | E | A | 0700 | BUICK | 2005 | - 3 | A | 22107 | - | L G | | | | | | | | |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **35** *Direction* **W** *Secondary Rd* **CHESTNUT** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP. (EASTBOUND)** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **014363** *Collision Date* **20170906** *Time* **1025** *Day* **WED**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20170913**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 43 | M | H | HNBD | | UNS TURN | E | A | 0700 | TOYOT | 2007 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 22 | M | A | HNBD | | STOPPED | E | A | 0700 | HONDA | 1999 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **358** *Direction* **W** *Secondary Rd* **FOWLER AVENUE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP. (EASTBOUND)** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **030** *Type* **3** *CalTrans* *Badge* **014363** *Collision Date* **20170803** *Time* **0859** *Day* **THU**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20170809**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 44 | M | H | HNBD | | PROC ST | E | D | 2200 | CHEV | 2002 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 34 | M | H | HNBD | | PROC ST | E | A | 0100 | CHEV | 1998 | - 3 | N | | - | M G | | | | | | | | |
| 3 | DRVR | 63 | M | W | HNBD | | PROC ST | E | A | 0800 | DODGE | 2008 | - 3 | N | | - | M G | | | | | | | | |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **0** *Direction* *Secondary Rd* **PULLMAN STREET** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP. BYPASS** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **014363** *Collision Date* **20170325** *Time* **0615** *Day* **SAT**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20170405**
*Weather1* **CLOUDY** *Weather2* **RAINING** *Rdwy Surface* **WET** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **OBSCR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 19 | M | H | HBD-NUI | | PROC ST | S | A | 0100 | PONTI | 1997 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 33 | M | H | HNBD | | PROC ST | E | D | 2200 | CHEV | 2007 | - 3 | N | | - | M G | | | | | | | | |

Primary Rd JENSEN AV | Distance (ft) 353 | Direction E | Secondary Rd BETHEL AV | NCIC 1013 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Sanger | County Fresno | Population 3 | Rpt Dist M170 | Beat 001 | Type 0 | CalTrans | Badge M138 | Collision Date 20170725 | Time 0847 | Day TUE
Primary Collision Factor R-O-W AUTO | Violation 21804A | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 2 | Tow Away? Y | Process Date 20170823
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 51 | M | H | HNBD | | ENT TRAF | W | A | 0100 | LEXUS | 2001 | - 3 | N | | - | M G | DRVR | COMP PN | 51 | M | 1 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | PASS | COMP PN | 51 | F | 3 | 0 | M | G |
| 2 | DRVR | 33 | F | W | HNBD | | PROC ST | E | A | 0100 | DODGE | 2008 | - 3 | N | | - | M G | | | | | | | | |

Primary Rd JENSEN AV | Distance (ft) 265 | Direction E | Secondary Rd BETHEL AV | NCIC 1013 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Sanger | County Fresno | Population 3 | Rpt Dist M170 | Beat 001 | Type 0 | CalTrans | Badge M138 | Collision Date 20171213 | Time 1259 | Day WED
Primary Collision Factor R-O-W AUTO | Violation 21804A | Collision Type BROADSIDE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20180319
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 18 | F | H | HNBD | | ENT TRAF | S | A | 0100 | BMW | 2000 | - 3 | N | | - | M G | | | | | | | | |
| 2 | DRVR | 17 | M | H | HNBD | | PROC ST | W | A | 0100 | HONDA | 1998 | - 3 | N | | - | M G | | | | | | | | |

Primary Rd JENSEN AV | Distance (ft) 305 | Direction E | Secondary Rd CHATEAU FRESNO | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist 3240 | Beat 01F | Type 0 | CalTrans | Badge P1070 | Collision Date 20170131 | Time 0441 | Day TUE
Primary Collision Factor DRVR ALC|DRG | Violation 23152B | Collision Type HEAD-ON | Severity FATAL | #Killed 1 | #Injured 0 | Tow Away? Y | Process Date 20180328
Weather1 FOG | Weather2 | Rdwy Surface SLIPPERY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DARK - NO | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 31 | M | H | HBD-UI | | PROC ST | W | D | 2200 | CHEVR | 2004 | - 3 | A | 21650 | - | L G | | | | | | | | |
| 2 | DRVR | 59 | M | H | IMP UNK | IMP UNK | PROC ST | E | A | 0100 | HONDA | 1996 | - 3 | N | | - | L G | DRVR | KILLED | 59 | M | 1 | 0 | L | G |

Primary Rd JENSEN AV | Distance (ft) 0 | Direction | Secondary Rd CHESTNUT AV | NCIC 1005 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist 3162 | Beat SE F | Type 0 | CalTrans | Badge P731 | Collision Date 20171105 | Time 0119 | Day SUN
Primary Collision Factor DRVR ALC|DRG | Violation 23152B | Collision Type BROADSIDE | Severity FATAL | #Killed 2 | #Injured 2 | Tow Away? Y | Process Date 20180523
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DARK - ST | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 30 | M | H | HBD-UI | | PROC ST | W | A | 0100 | ACURA | 2004 | - 3 | A | 21453 | - | L H | DRVR | KILLED | 30 | M | 1 | 1 | L | H |
| | | | | | | | | | | | | | | | | | | PASS | KILLED | 31 | M | 3 | 0 | L | G |
| 2 | DRVR | 44 | F | H | HNBD | | LFT TURN | E | A | 0700 | CHEVR | 2009 | - 3 | N | | - | L G | DRVR | SEVERE | 44 | F | 1 | 0 | L | G |
| | | | | | | | | | | | | | | | | | | PASS | OTH VIS | 20 | F | 3 | 0 | L | G |

Primary Rd JENSEN AV | Distance (ft) 0 | Direction | Secondary Rd GREENWOOD AV | NCIC 1013 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Sanger | County Fresno | Population 3 | Rpt Dist M290 | Beat 002 | Type 0 | CalTrans | Badge M134 | Collision Date 20170415 | Time 0829 | Day SAT
Primary Collision Factor R-O-W AUTO | Violation 21804A | Collision Type SIDESWIPE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? N | Process Date 20170531
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run MSDMNR | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | F | H | HBD-UNK | | ENT TRAF | N | - | 0000 | BMW | | - - | N | | - | M B | | | | | | | | |
| 2 | DRVR | 31 | M | H | HNBD | | PROC ST | E | - | 0000 | TOYOT | 2004 | - 3 | N | | - | M E | | | | | | | | |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **0** *Direction* *Secondary Rd* **ARMSTRONG** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **014363** *Collision Date* **20180119** *Time* **0815** *Day* **FRI**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **Y** *Process Date* **20180130**
*Weather1* **CLOUDY** *Weather2* **RAINING** *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 63 | M | W | HNBD | | PROC ST | S | A | 0800 | TOYOT | 2006 | - 3 | N | | - | L | G | DRVR | POSSIBL | 63 | M | 1 | 0 | L | G |
| 2 | DRVR | 50 | F | H | HNBD | | STOPPED | W | A | 0700 | FORD | 2015 | - 3 | N | | - | M | G | DRVR | POSSIBL | 50 | F | 1 | 0 | M | G |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **0** *Direction* *Secondary Rd* **ARMSTRONG** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **020837** *Collision Date* **20180317** *Time* **1635** *Day* **SAT**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21801A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **Y** *Process Date* **20180328**
*Weather1* **CLOUDY** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 43 | M | H | HNBD | | LFT TURN | W | E | 2232 | CHEV | 2010 | - 2 | N | | - | L | G | DRVR | POSSIBL | 43 | M | 1 | 0 | L | G |
| 2 | DRVR | 37 | M | W | HNBD | | PROC ST | E | E | 2235 | GMC | 2016 | - 2 | N | | - | L | G | DRVR | MINOR | 37 | M | 1 | 0 | L | G |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **10** *Direction* **W** *Secondary Rd* **BRAWLEY** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **020837** *Collision Date* **20180914** *Time* **1730** *Day* **FRI**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21801A** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20180919**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DRVR | 26 | M | H | HNBD | | PROC ST | W | A | 0100 | PLYM | 1998 | - 3 | N | | - | M | G | | | | | | | | |
| 2F | DRVR | 44 | M | H | IMP UNK | IMP UNK | LFT TURN | S | D | 2200 | FORD | 2002 | - 3 | N | | - | M | B | | | | | | | | |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **0** *Direction* *Secondary Rd* **CHESTNUT** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **020193** *Collision Date* **20180106** *Time* **2300** *Day* **SAT**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21453C** *Collision Type* **BROADSIDE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20180110**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 63 | F | H | HNBD | | LFT TURN | W | A | 0100 | FORD | 2013 | - 3 | N | | - | L | G | | | | | | | | |
| 2 | DRVR | 34 | M | H | HNBD | | PROC ST | E | D | 2200 | CHEV | 2000 | - 3 | N | | - | M | G | | | | | | | | |

*Primary Rd* **JENSEN AVENUE** *Distance (ft)* **0** *Direction* *Secondary Rd* **DEWOLF AVENUE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **018926** *Collision Date* **20180904** *Time* **1448** *Day* **TUE**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **FATAL** *#Killed* **1** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20181029**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | DRVR | 29 | M | H | IMP UNK | IMP UNK | PROC ST | W | C | 0200 | DUCA | 2010 | - 3 | N | | - | - | W | DRVR | KILLED | 29 | M | 1 | 1 | P | W |
| 2F | DRVR | 33 | M | W | HNBD | | PROC ST | S | A | 0100 | LEXU | 2006 | - 3 | N | | - | M | G | DRVR | MINOR | 33 | M | 1 | 0 | M | G |

Primary Rd MAPLE AVENUE | Distance (ft) 250 | Direction N | Secondary Rd ANNADALE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 013703 | Collision Date 20180920 | Time 1120 | Day THU
Primary Collision Factor LANE CHANGE | Violation 21658A | Collision Type SIDESWIPE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? N | Process Date 20180926
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 68 | F | W | HNBD | | CHANG LN | N | A | 0700 | SUBA | 2018 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 30 | M | A | HNBD | | PROC ST | N | D | 2200 | CHEV | 2007 | - 3 | N | | - | M | G | | | | | | | | |

Primary Rd MAPLE AVENUE | Distance (ft) 627 | Direction N | Secondary Rd CLINTON AVENUE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City Fresno | County Fresno | Population 7 | Rpt Dist | Beat 025 | Type 3 | CalTrans | Badge 020450 | Collision Date 20180105 | Time 1823 | Day FRI
Primary Collision Factor IMPROP TURN | Violation 22107 | Collision Type SIDESWIPE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? N | Process Date 20180117
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run MSDMNR | Motor Vehicle Involved With PKD MV | Lighting DARK - ST | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | PROC ST | N | - | 9900 | - | | - 3 | N | | - | B | B | | | | | | | | |
| 2 | PRKD | 998 | - | | | | PARKED | N | D | 2200 | CHEV | 2011 | - 3 | N | | - | - | - | | | | | | | | |

Primary Rd MAPLE AVENUE | Distance (ft) 450 | Direction S | Secondary Rd JENSEN AVENUE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 013703 | Collision Date 20180515 | Time 1010 | Day TUE
Primary Collision Factor R-O-W AUTO | Violation 21804A | Collision Type BROADSIDE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? N | Process Date 20180516
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 43 | M | H | HNBD | | ENT TRAF | W | D | 2200 | TOYOT | 2014 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 19 | F | H | HNBD | | PROC ST | N | A | 0100 | PONT | 2007 | - 3 | N | | - | M | G | | | | | | | | |

Primary Rd MAPLE AVENUE | Distance (ft) 0 | Direction | Secondary Rd LINCOLN AVENUE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 015 | Type 3 | CalTrans | Badge 013112 | Collision Date 20180321 | Time 1305 | Day WED
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? Y | Process Date 20180330
Weather1 CLOUDY | Weather2 | Rdwy Surface WET | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 53 | M | B | HNBD | | PROC ST | N | F | 2600 | INTL | 2009 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 28 | M | W | HNBD | | PROC ST | E | D | 2200 | FORD | 2017 | - 3 | N | | - | M | G | DRVR | POSSIBL | 28 | M | 1 | 0 | M | G |

Primary Rd MAPLE AVENUE | Distance (ft) 0 | Direction | Secondary Rd NORTH AVENUE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 014363 | Collision Date 20180405 | Time 1250 | Day THU
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 3 | Tow Away? Y | Process Date 20180531
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 29 | M | B | HNBD | | LFT TURN | S | I | 1100 | NWFLR | 2009 | - 3 | N | | - | P | H | PASS | POSSIBL | 88 | M | 7 | 0 | P | A |
| | | | | | | | | | | | | | | | | | | | PASS | POSSIBL | 33 | F | 7 | 0 | P | A |
| | | | | | | | | | | | | | | | | | | | PASS | POSSIBL | 7 | F | 7 | 0 | P | A |
| 2 | DRVR | 49 | M | H | HNBD | | PROC ST | E | G | 2731 | FRHT | 2004 | - 3 | N | | - | M | G | | | | | | | | |

*Primary Rd* **JENSEN AVE** *Distance (ft)* **0** *Direction* *Secondary Rd* **BRAWLEY AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **020** *Type* **3** *CalTrans* *Badge* **020540** *Collision Date* **20180611** *Time* **0445** *Day* **MON**
*Primary Collision Factor* **R-O-W AUTO** *Violation* **21802A** *Collision Type* **BROADSIDE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20180618**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DUSK/DAWN** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 24 | M | A | HNBD | | ENT TRAF | S | A | 0100 | ACUR | 2008 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 73 | M | H | HNBD | | PROC ST | E | F | 2500 | HAYHO | 2002 | - 3 | N | | - | P | C | | | | | | | | |

*Primary Rd* **JENSEN AVE** *Distance (ft)* **100** *Direction* **E** *Secondary Rd* **BUTTE AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **015** *Type* **3** *CalTrans* *Badge* **018044** *Collision Date* **20180711** *Time* **1750** *Day* **WED**
*Primary Collision Factor* **IMPROP TURN** *Violation* **22107** *Collision Type* **HIT OBJECT** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20180712**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 46 | M | O | HNBD | | UNS TURN | E | D | 2200 | TOYO | 2003 | - 3 | N | | - | M | G | | | | | | | | |

*Primary Rd* **JENSEN AVE** *Distance (ft)* **0** *Direction* *Secondary Rd* **CEDAR AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **Fresno** *County* **Fresno** *Population* **7** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **018926** *Collision Date* **20180924** *Time* **1600** *Day* **MON**
*Primary Collision Factor* **STOP SGN|SIG** *Violation* **21453A** *Collision Type* **BROADSIDE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20181004**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **1**
*Hit and Run* *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 19 | M | O | HNBD | | PROC ST | W | G | 2731 | FRHT | 2014 | - 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 61 | F | H | HNBD | | LFT TURN | S | H | 6400 | CHEV | 2016 | - 3 | N | | - | M | G | | | | | | | | |

*Primary Rd* **JENSEN AVE** *Distance (ft)* **20** *Direction* **W** *Secondary Rd* **CHESTNUT AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **019610** *Collision Date* **20181212** *Time* **1732** *Day* **WED**
*Primary Collision Factor* **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20181214**
*Weather1* **CLOUDY** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | PROC ST | E | - | 9900 | - | | - 3 | N | | - | B | B | | | | | | | | |
| 2 | DRVR | 37 | F | W | HNBD | | STOPPED | E | A | 0700 | KIA | 2015 | - 3 | N | | - | M | G | | | | | | | | |

*Primary Rd* **JENSEN AVE** *Distance (ft)* **817** *Direction* **W** *Secondary Rd* **CLOVIS AVE** *NCIC* **9435** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
*City* **UNINCORP.** *County* **Fresno** *Population* **9** *Rpt Dist* *Beat* **034** *Type* **3** *CalTrans* *Badge* **020450** *Collision Date* **20180807** *Time* **2139** *Day* **TUE**
*Primary Collision Factor* **PED VIOL** *Violation* **21956A** *Collision Type* **AUTO/PED** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **N** *Process Date* **20180814**
*Weather1* **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
*Hit and Run* *Motor Vehicle Involved With* **PED** *Lighting* **DARK - NO** *Ped Action* **IN RD,** *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | PED | 57 | M | H | IMP UNK | IMP UNK | | W | N | 6000 | - | | - 3 | N | | - | - | - | PED | SERIOUS | 57 | M | 9 | - | - | - |
| 2 | DRVR | 33 | M | H | HNBD | | PROC ST | W | A | 0700 | HYUN | 2007 | - 3 | N | | - | M | G | | | | | | | | |

Primary Rd JENSEN AVENUE | Distance (ft) 1056 | Direction E | Secondary Rd FLOYD AVENUE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 015 | Type 3 | CalTrans | Badge 019113 | Collision Date 20181011 | Time 0905 | Day THU
Primary Collision Factor IMPROP TURN | Violation 22107 | Collision Type HIT OBJECT | Severity INJURY | #Killed 0 | #Injured 2 | Tow Away? Y | Process Date 20181018
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With FIXED OBJ | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 20 | F | H | HNBD | | UNS TURN | E | A | 0100 | NISS | 2014 | - | 3 | N | | - | M | G | DRVR | MINOR | 20 | F | 1 | 0 | M | G |
| | | | | | | | | | | | | | | | | | | | | PASS | POSSIBL | 998 | M | 5 | 0 | P | Q |

Primary Rd JENSEN AVENUE | Distance (ft) 1056 | Direction E | Secondary Rd GOLDENROD | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 015 | Type 3 | CalTrans | Badge 017489 | Collision Date 20180203 | Time 2500 | Day SAT
Primary Collision Factor IMPROP TURN | Violation 22107 | Collision Type HIT OBJECT | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20180205
Weather1 CLOUDY | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run MSDMNR | Motor Vehicle Involved With FIXED OBJ | Lighting DARK - NO | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 998 | - | | IMP UNK | IMP UNK | UNS TURN | W | A | 0100 | FORD | 2003 | - | 3 | N | | - | L | B | | | | | | | | |

Primary Rd JENSEN AVENUE | Distance (ft) 0 | Direction | Secondary Rd HOWARD AVENUE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 015 | Type 3 | CalTrans | Badge 020540 | Collision Date 20181112 | Time 1220 | Day MON
Primary Collision Factor STOP SGN|SIG | Violation 22450A | Collision Type BROADSIDE | Severity PDO | #Killed 0 | #Injured 0 | Tow Away? Y | Process Date 20181121
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 52 | M | W | HNBD | | PROC ST | N | B | 0735 | JEEP | 2003 | - | 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 21 | F | H | HNBD | | PROC ST | E | A | 0100 | SUBA | 2017 | - | 3 | N | | - | L | G | | | | | | | | |

Primary Rd JENSEN AVENUE | Distance (ft) 1080 | Direction E | Secondary Rd LASSEN AVENUE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 015 | Type 3 | CalTrans | Badge 019523 | Collision Date 20181021 | Time 0125 | Day SUN
Primary Collision Factor DRVR ALC|DRG | Violation 23152A | Collision Type HIT OBJECT | Severity FATAL | #Killed 1 | #Injured 0 | Tow Away? Y | Process Date 20190503
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With FIXED OBJ | Lighting DARK - NO | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 31 | F | H | HBD-UI | | UNS TURN | W | A | 0100 | MAZD | 2014 | - | 3 | A | 22107 | - | L | G | DRVR | KILLED | 31 | F | 1 | 0 | L | G |

Primary Rd JENSEN AVENUE | Distance (ft) 0 | Direction | Secondary Rd MAPLE AVENUE | NCIC 9435 | State Hwy? N | Route | Postmile Prefix | Postmile | Side of Hwy
City UNINCORP. | County Fresno | Population 9 | Rpt Dist | Beat 034 | Type 3 | CalTrans | Badge 019451 | Collision Date 20181221 | Time 1346 | Day FRI
Primary Collision Factor STOP SGN|SIG | Violation 21453A | Collision Type BROADSIDE | Severity INJURY | #Killed 0 | #Injured 1 | Tow Away? Y | Process Date 20190103
Weather1 CLOUDY | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Vehicle Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type | Ramp/Int

| Party | Type | Age | Sex | Race | Sobriety1 | Sobriety2 | Move Pre | Dir | SW Veh | CHP Veh | Make | Year | SP Info | OAF1 | Viol | OAF2 | Safety | Equip | ROLE | Ext Of Inj | AGE | Sex | Seat Pos | Safety | EQUIP | Ejected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1F | DRVR | 58 | M | A | HNBD | | PROC ST | E | D | 2200 | TOYT | 2001 | - | 3 | N | | - | M | G | | | | | | | | |
| 2 | DRVR | 48 | F | H | HNBD | | PROC ST | N | A | 0100 | NISS | 2008 | - | 3 | N | | - | L | G | DRVR | POSSIBL | 48 | F | 1 | 0 | L | G |
| 3 | DRVR | 45 | M | H | HNBD | | PROC ST | N | I | 2000 | NWFLR | 2005 | - | 3 | N | | - | M | G | | | | | | | | |

# Appendix F: Existing Traffic Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 40 | 3 | 22 | 44 | 3 | 16 | 60 | 38 | 533 | 25 | 4 | 478 | 84 |
| Future Vol, veh/h | 40 | 3 | 22 | 44 | 3 | 16 | 60 | 38 | 533 | 25 | 4 | 478 | 84 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 52 | 4 | 29 | 57 | 4 | 21 | 78 | 49 | 692 | 32 | 5 | 621 | 109 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1288 | 1664 | 365 | 1285 | 1702 | 362 | 730 | 730 | 0 | 0 | 724 | 0 | 0 |
| Stage 1 | 686 | 686 | - | 962 | 962 | - | - | - | - | - | - | - | - |
| Stage 2 | 602 | 978 | - | 323 | 740 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 120 | 95 | 629 | 121 | 90 | 632 | 491 | 863 | - | - | 868 | - | - |
| Stage 1 | 401 | 444 | - | 273 | 330 | - | - | - | - | - | - | - | - |
| Stage 2 | 451 | 325 | - | 660 | 419 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 92 | 74 | 629 | 92 | 70 | 632 | 574 | 574 | - | - | 868 | - | - |
| Mov Cap-2 Maneuver | 92 | 74 | - | 92 | 70 | - | - | - | - | - | - | - | - |
| Stage 1 | 312 | 441 | - | 213 | 257 | - | - | - | - | - | - | - | - |
| Stage 2 | 335 | 253 | - | 621 | 416 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 76.9 | 90.7 | 1.9 | 0.1 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 574 | - | - | 127 | 115 | 868 | - | - |
| HCM Lane V/C Ratio | 0.222 | - | - | 0.665 | 0.711 | 0.006 | - | - |
| HCM Control Delay (s) | 13 | - | - | 76.9 | 90.7 | 9.2 | - | - |
| HCM Lane LOS | B | - | - | F | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | - | 3.6 | 3.8 | 0 | - | - |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 2 | | | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 57 | 43 | 292 | 17 | 17 | 368 |
| Future Vol, veh/h | 57 | 43 | 292 | 17 | 17 | 368 |
| 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 | 83 | 83 | 83 | 83 | 83 | 83 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 69 | 52 | 352 | 20 | 20 | 443 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 624 | 186 | 0 | 0 | 372 | 0 |
| Stage 1 | 362 | - | - | - | - | - |
| Stage 2 | 262 | - | - | - | - | - |
| 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 | 415 | 821 | - | - | 1176 | - |
| Stage 1 | 672 | - | - | - | - | - |
| Stage 2 | 755 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 405 | 821 | - | - | 1176 | - |
| Mov Cap-2 Maneuver | 405 | - | - | - | - | - |
| Stage 1 | 657 | - | - | - | - | - |
| Stage 2 | 755 | - | - | - | - | - |

| Approach | WB | | NB | | SB | |
|---|---|---|---|---|---|---|
| HCM Control Delay, s | 14 | | 0 | | 0.5 | |
| HCM LOS | B | | | | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 518 | 1176 | - |
| HCM Lane V/C Ratio | - | - | 0.233 | 0.017 | - |
| HCM Control Delay (s) | - | - | 14 | 8.1 | 0.1 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 0.1 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 66 | 480 | 124 | 11 | 61 | 899 | 117 | 100 | 97 | 15 | 140 |
| Future Volume (vph) | 4 | 66 | 480 | 124 | 11 | 61 | 899 | 117 | 100 | 97 | 15 | 140 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.97 | | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3388 | | | 1752 | 3438 | | 1752 | 3428 | | 1751 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.41 | 1.00 | | 0.67 |
| Satd. Flow (perm) | | 1752 | 3388 | | | 1752 | 3438 | | 752 | 3428 | | 1239 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 4 | 74 | 539 | 139 | 12 | 69 | 1010 | 131 | 112 | 109 | 17 | 157 |
| RTOR Reduction (vph) | 0 | 0 | 16 | 0 | 0 | 0 | 7 | 0 | 0 | 14 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 78 | 662 | 0 | 0 | 81 | 1134 | 0 | 112 | 112 | 0 | 157 |
| Confl. Peds. (#/hr) | | 5 | | 1 | | 1 | | 5 | 1 | | 1 | 1 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 6.3 | 57.1 | | | 7.8 | 58.6 | | 20.3 | 20.3 | | 20.3 |
| Effective Green, g (s) | | 6.3 | 57.1 | | | 7.8 | 58.6 | | 20.3 | 20.3 | | 20.3 |
| Actuated g/C Ratio | | 0.06 | 0.57 | | | 0.08 | 0.59 | | 0.20 | 0.20 | | 0.20 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 110 | 1934 | | | 136 | 2014 | | 152 | 695 | | 251 |
| v/s Ratio Prot | | c0.04 | 0.20 | | | 0.05 | c0.33 | | | 0.03 | | |
| v/s Ratio Perm | | | | | | | | | c0.15 | | | 0.13 |
| v/c Ratio | | 0.71 | 0.34 | | | 0.60 | 0.56 | | 0.74 | 0.16 | | 0.63 |
| Uniform Delay, d1 | | 46.0 | 11.4 | | | 44.6 | 12.8 | | 37.3 | 32.8 | | 36.4 |
| Progression Factor | | 1.00 | 1.00 | | | 1.36 | 0.28 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 18.8 | 0.5 | | | 6.1 | 1.0 | | 16.9 | 0.1 | | 4.8 |
| Delay (s) | | 64.8 | 11.9 | | | 66.8 | 4.6 | | 54.2 | 32.9 | | 41.2 |
| Level of Service | | E | B | | | E | A | | D | C | | D |
| Approach Delay (s) | | | 17.4 | | | | 8.7 | | | 43.0 | | |
| Approach LOS | | | B | | | | A | | | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 19.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.61 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 65.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 97 | 231 |
| Future Volume (vph) | 97 | 231 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.89 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3106 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3106 | |
| Peak-hour factor, PHF | 0.89 | 0.89 |
| Adj. Flow (vph) | 109 | 260 |
| RTOR Reduction (vph) | 127 | 0 |
| Lane Group Flow (vph) | 242 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 20.3 | |
| Effective Green, g (s) | 20.3 | |
| Actuated g/C Ratio | 0.20 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 630 | |
| v/s Ratio Prot | 0.08 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.38 | |
| Uniform Delay, d1 | 34.4 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.4 | |
| Delay (s) | 34.8 | |
| Level of Service | C | |
| Approach Delay (s) | 36.7 | |
| Approach LOS | D | |

| Intersection Summary |
|---|

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 56 | 364 | 220 | 15 | 100 | 853 | 63 | 5 | 90 | 207 | 49 |
| Future Volume (vph) | 2 | 56 | 364 | 220 | 15 | 100 | 853 | 63 | 5 | 90 | 207 | 49 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frt | | 1.00 | 0.94 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.97 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3307 | | | 1752 | 3505 | 1568 | | 1752 | 3405 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3307 | | | 1752 | 3505 | 1568 | | 1752 | 3405 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 61 | 396 | 239 | 16 | 109 | 927 | 68 | 5 | 98 | 225 | 53 |
| RTOR Reduction (vph) | 0 | 0 | 68 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 26 | 0 |
| Lane Group Flow (vph) | 0 | 63 | 567 | 0 | 0 | 125 | 927 | 35 | 0 | 103 | 252 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 5.0 | 48.6 | | | 8.8 | 52.1 | 52.1 | | 6.9 | 17.4 | |
| Effective Green, g (s) | | 5.0 | 48.6 | | | 8.8 | 52.1 | 52.1 | | 6.9 | 17.4 | |
| Actuated g/C Ratio | | 0.05 | 0.49 | | | 0.09 | 0.52 | 0.52 | | 0.07 | 0.17 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 87 | 1607 | | | 154 | 1826 | 816 | | 120 | 592 | |
| v/s Ratio Prot | | 0.04 | 0.17 | | | c0.07 | c0.26 | | | c0.06 | 0.07 | |
| v/s Ratio Perm | | | | | | | | 0.02 | | | | |
| v/c Ratio | | 0.72 | 0.35 | | | 0.81 | 0.51 | 0.04 | | 0.86 | 0.43 | |
| Uniform Delay, d1 | | 46.8 | 15.9 | | | 44.8 | 15.6 | 11.7 | | 46.1 | 36.8 | |
| Progression Factor | | 0.89 | 0.80 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 24.6 | 0.6 | | | 26.7 | 1.0 | 0.1 | | 41.7 | 0.5 | |
| Delay (s) | | 66.5 | 13.3 | | | 71.5 | 16.6 | 11.8 | | 87.8 | 37.3 | |
| Level of Service | | E | B | | | E | B | B | | F | D | |
| Approach Delay (s) | | | 18.1 | | | | 22.4 | | | | 51.0 | |
| Approach LOS | | | B | | | | C | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 29.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.58 | | |
| Actuated Cycle Length (s) | 100.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 58.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 2 | 70 | 247 | 146 |
| Future Volume (vph) | 2 | 70 | 247 | 146 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1568 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 76 | 268 | 159 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 133 |
| Lane Group Flow (vph) | 0 | 78 | 268 | 26 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 5.8 | 16.3 | 16.3 |
| Effective Green, g (s) | | 5.8 | 16.3 | 16.3 |
| Actuated g/C Ratio | | 0.06 | 0.16 | 0.16 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 101 | 571 | 255 |
| v/s Ratio Prot | | c0.04 | c0.08 | |
| v/s Ratio Perm | | | | 0.02 |
| v/c Ratio | | 0.77 | 0.47 | 0.10 |
| Uniform Delay, d1 | | 46.4 | 37.9 | 35.6 |
| Progression Factor | | 1.02 | 1.02 | 1.11 |
| Incremental Delay, d2 | | 29.9 | 0.6 | 0.2 |
| Delay (s) | | 77.1 | 39.3 | 39.7 |
| Level of Service | | E | D | D |
| Approach Delay (s) | | | 45.3 | |
| Approach LOS | | | D | |

Intersection Summary

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 3 | 60 | 25 | 107 | 140 | 5 |
| Future Vol, veh/h | 3 | 60 | 25 | 107 | 140 | 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 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 4 | 81 | 34 | 145 | 189 | 7 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 334 | 98 | 196 | 0 | - | 0 |
| Stage 1 | 193 | - | - | - | - | - |
| Stage 2 | 141 | - | - | - | - | - |
| 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 | 633 | 936 | 1367 | - | - | - |
| Stage 1 | 818 | - | - | - | - | - |
| Stage 2 | 868 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 616 | 936 | 1367 | - | - | - |
| Mov Cap-2 Maneuver | 616 | - | - | - | - | - |
| Stage 1 | 796 | - | - | - | - | - |
| Stage 2 | 868 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.3 | 1.5 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1367 | - | 913 | - | - |
| HCM Lane V/C Ratio | 0.025 | - | 0.093 | - | - |
| HCM Control Delay (s) | 7.7 | 0.1 | 9.3 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.3 | - | - |

| 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 | 40 | 148 | 0 | 1 | 188 | 80 | 1 | 0 | 1 | 64 | 1 | 62 |
| Future Vol, veh/h | 40 | 148 | 0 | 1 | 188 | 80 | 1 | 0 | 1 | 64 | 1 | 62 |
| 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 47 | 174 | 0 | 1 | 221 | 94 | 1 | 0 | 1 | 75 | 1 | 73 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 315 | 0 | 0 | 174 | 0 | 0 | 575 | 585 | 174 | 539 | 538 | 268 |
| Stage 1 | - | - | - | - | - | - | 268 | 268 | - | 270 | 270 | - |
| Stage 2 | - | - | - | - | - | - | 307 | 317 | - | 269 | 268 | - |
| 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 | 1240 | - | - | 1397 | - | - | 427 | 422 | 867 | 452 | 448 | 768 |
| Stage 1 | - | - | - | - | - | - | 735 | 685 | - | 734 | 684 | - |
| Stage 2 | - | - | - | - | - | - | 701 | 652 | - | 734 | 685 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1240 | - | - | 1397 | - | - | 374 | 406 | 867 | 438 | 431 | 768 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 374 | 406 | - | 438 | 431 | - |
| Stage 1 | - | - | - | - | - | - | 707 | 659 | - | 706 | 683 | - |
| Stage 2 | - | - | - | - | - | - | 633 | 651 | - | 705 | 659 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1.7 | 0 | 11.9 | 13.9 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 523 | 1240 | - | - | 1397 | - | - | 554 |
| HCM Lane V/C Ratio | 0.004 | 0.038 | - | - | 0.001 | - | - | 0.27 |
| HCM Control Delay (s) | 11.9 | 8 | - | - | 7.6 | 0 | - | 13.9 |
| HCM Lane LOS | B | A | - | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0 | 0.1 | - | - | 0 | - | - | 1.1 |

| Intersection | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Int Delay, s/veh | 2.9 | | | | | | | | | | | | |
| **Movement** | **EBL** | **EBT** | **EBR** | **WBL** | **WBT** | **WBR** | **NBU** | **NBL** | **NBT** | **NBR** | **SBL** | **SBT** | **SBR** |
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 4 | 23 | 26 | 3 | 8 | 25 | 27 | 738 | 32 | 11 | 630 | 41 |
| Future Vol, veh/h | 27 | 4 | 23 | 26 | 3 | 8 | 25 | 27 | 738 | 32 | 11 | 630 | 41 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 29 | 4 | 25 | 28 | 3 | 9 | 27 | 29 | 802 | 35 | 12 | 685 | 45 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1248 | 1690 | 368 | 1313 | 1695 | 429 | 729 | 730 | 0 | 0 | 846 | 0 | 0 |
| Stage 1 | 732 | 732 | - | 941 | 941 | - | - | - | - | - | - | - | - |
| Stage 2 | 516 | 958 | - | 372 | 754 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 129 | 92 | 626 | 115 | 91 | 571 | 492 | 863 | - | - | 780 | - | - |
| Stage 1 | 377 | 423 | - | 281 | 338 | - | - | - | - | - | - | - | - |
| Stage 2 | 507 | 332 | - | 618 | 413 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 113 | 81 | 624 | 96 | 81 | 566 | 619 | 619 | - | - | 773 | - | - |
| Mov Cap-2 Maneuver | 113 | 81 | - | 96 | 81 | - | - | - | - | - | - | - | - |
| Stage 1 | 342 | 416 | - | 253 | 304 | - | - | - | - | - | - | - | - |
| Stage 2 | 448 | 299 | - | 576 | 406 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 38.1 | 52.3 | 0.7 | 0.2 |
| HCM LOS | E | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 619 | - | - | 166 | 115 | 773 | - | - |
| HCM Lane V/C Ratio | 0.091 | - | - | 0.354 | 0.35 | 0.015 | - | - |
| HCM Control Delay (s) | 11.4 | - | - | 38.1 | 52.3 | 9.7 | - | - |
| HCM Lane LOS | B | - | - | E | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 1.5 | 1.4 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 23 | 52 | 440 | 55 | 40 | 263 |
| Future Vol, veh/h | 23 | 52 | 440 | 55 | 40 | 263 |
| 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 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 24 | 55 | 463 | 58 | 42 | 277 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 715 | 261 | 0 | 0 | 521 | 0 |
| Stage 1 | 492 | - | - | - | - | - |
| Stage 2 | 223 | - | - | - | - | - |
| 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 | 363 | 735 | - | - | 1034 | - |
| Stage 1 | 577 | - | - | - | - | - |
| Stage 2 | 790 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 346 | 735 | - | - | 1034 | - |
| Mov Cap-2 Maneuver | 346 | - | - | - | - | - |
| Stage 1 | 549 | - | - | - | - | - |
| Stage 2 | 790 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.7 | 0 | 1.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 547 | 1034 | - |
| HCM Lane V/C Ratio | - | - | 0.144 | 0.041 | - |
| HCM Control Delay (s) | - | - | 12.7 | 8.6 | 0.2 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.1 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 207 | 820 | 53 | 2 | 18 | 551 | 100 | 117 | 157 | 66 | 115 |
| Future Volume (vph) | 2 | 207 | 820 | 53 | 2 | 18 | 551 | 100 | 117 | 157 | 66 | 115 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.99 | | | 1.00 | 0.98 | | 1.00 | 0.96 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3473 | | | 1752 | 3424 | | 1752 | 3349 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.59 | 1.00 | | 0.55 |
| Satd. Flow (perm) | | 1752 | 3473 | | | 1752 | 3424 | | 1092 | 3349 | | 1005 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 2 | 223 | 882 | 57 | 2 | 19 | 592 | 108 | 126 | 169 | 71 | 124 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 0 | 10 | 0 | 0 | 52 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 225 | 936 | 0 | 0 | 21 | 690 | 0 | 126 | 188 | 0 | 124 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 21.5 | 73.0 | | | 2.3 | 53.8 | | 19.9 | 19.9 | | 19.9 |
| Effective Green, g (s) | | 21.5 | 73.0 | | | 2.3 | 53.8 | | 19.9 | 19.9 | | 19.9 |
| Actuated g/C Ratio | | 0.20 | 0.66 | | | 0.02 | 0.49 | | 0.18 | 0.18 | | 0.18 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 342 | 2304 | | | 36 | 1674 | | 197 | 605 | | 181 |
| v/s Ratio Prot | | c0.13 | 0.27 | | | 0.01 | c0.20 | | | 0.06 | | |
| v/s Ratio Perm | | | | | | | | | 0.12 | | | c0.12 |
| v/c Ratio | | 0.66 | 0.41 | | | 0.58 | 0.41 | | 0.64 | 0.31 | | 0.69 |
| Uniform Delay, d1 | | 40.9 | 8.5 | | | 53.4 | 18.0 | | 41.7 | 39.1 | | 42.1 |
| Progression Factor | | 1.00 | 1.00 | | | 1.22 | 0.30 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 4.5 | 0.5 | | | 20.8 | 0.7 | | 6.7 | 0.3 | | 10.2 |
| Delay (s) | | 45.4 | 9.1 | | | 85.9 | 6.2 | | 48.4 | 39.4 | | 52.4 |
| Level of Service | | D | A | | | F | A | | D | D | | D |
| Approach Delay (s) | | | 16.1 | | | | 8.5 | | | 42.5 | | |
| Approach LOS | | | B | | | | A | | | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 21.2 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 110.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 59.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 56 | 138 |
| Future Volume (vph) | 56 | 138 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.89 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3102 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3102 | |
| Peak-hour factor, PHF | 0.93 | 0.93 |
| Adj. Flow (vph) | 60 | 148 |
| RTOR Reduction (vph) | 121 | 0 |
| Lane Group Flow (vph) | 87 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 19.9 | |
| Effective Green, g (s) | 19.9 | |
| Actuated g/C Ratio | 0.18 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 561 | |
| v/s Ratio Prot | 0.03 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.15 | |
| Uniform Delay, d1 | 38.0 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.1 | |
| Delay (s) | 38.1 | |
| Level of Service | D | |
| Approach Delay (s) | 43.4 | |
| Approach LOS | D | |

| Intersection Summary |
|---|

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 160 | 768 | 126 | 2 | 44 | 341 | 51 | 9 | 191 | 460 | 86 |
| Future Volume (vph) | 6 | 160 | 768 | 126 | 2 | 44 | 341 | 51 | 9 | 191 | 460 | 86 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 1.00 | 0.98 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.98 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3424 | | | 1752 | 3505 | 1546 | | 1752 | 3422 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3424 | | | 1752 | 3505 | 1546 | | 1752 | 3422 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 6 | 167 | 800 | 131 | 2 | 46 | 355 | 53 | 9 | 199 | 479 | 90 |
| RTOR Reduction (vph) | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 16 | 0 |
| Lane Group Flow (vph) | 0 | 173 | 921 | 0 | 0 | 48 | 355 | 18 | 0 | 208 | 553 | 0 |
| Confl. Peds. (#/hr) | | | | 2 | | | | 2 | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 17.9 | 50.6 | | | 4.3 | 36.7 | 36.7 | | 19.1 | 26.8 | |
| Effective Green, g (s) | | 17.9 | 50.6 | | | 4.3 | 36.7 | 36.7 | | 19.1 | 26.8 | |
| Actuated g/C Ratio | | 0.16 | 0.46 | | | 0.04 | 0.33 | 0.33 | | 0.17 | 0.24 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 285 | 1575 | | | 68 | 1169 | 515 | | 304 | 833 | |
| v/s Ratio Prot | | 0.10 | c0.27 | | | c0.03 | 0.10 | | | 0.12 | c0.16 | |
| v/s Ratio Perm | | | | | | | | 0.01 | | | | |
| v/c Ratio | | 0.61 | 0.58 | | | 0.71 | 0.30 | 0.03 | | 0.68 | 0.66 | |
| Uniform Delay, d1 | | 42.8 | 21.9 | | | 52.2 | 27.2 | 24.7 | | 42.6 | 37.5 | |
| Progression Factor | | 1.05 | 1.07 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 3.4 | 1.5 | | | 28.3 | 0.7 | 0.1 | | 6.2 | 2.0 | |
| Delay (s) | | 48.3 | 25.1 | | | 80.5 | 27.8 | 24.8 | | 48.9 | 39.5 | |
| Level of Service | | D | C | | | F | C | C | | D | D | |
| Approach Delay (s) | | | 28.7 | | | | 33.0 | | | | 42.0 | |
| Approach LOS | | | C | | | | C | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 37.4 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.62 | | |
| Actuated Cycle Length (s) | 110.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 71.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 11 | 75 | 245 | 103 |
| Future Volume (vph) | 11 | 75 | 245 | 103 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | 0.99 |
| Flpb, ped/bikes | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1545 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1545 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 11 | 78 | 255 | 107 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 91 |
| Lane Group Flow (vph) | 0 | 89 | 255 | 16 |
| Confl. Peds. (#/hr) | | | | 3 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 8.9 | 16.6 | 16.6 |
| Effective Green, g (s) | | 8.9 | 16.6 | 16.6 |
| Actuated g/C Ratio | | 0.08 | 0.15 | 0.15 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 141 | 528 | 233 |
| v/s Ratio Prot | | c0.05 | 0.07 | |
| v/s Ratio Perm | | | | 0.01 |
| v/c Ratio | | 0.63 | 0.48 | 0.07 |
| Uniform Delay, d1 | | 49.0 | 42.8 | 40.1 |
| Progression Factor | | 1.02 | 1.02 | 1.96 |
| Incremental Delay, d2 | | 8.9 | 0.7 | 0.1 |
| Delay (s) | | 58.7 | 44.2 | 78.7 |
| Level of Service | | E | D | E |
| Approach Delay (s) | | | 55.2 | |
| Approach LOS | | | E | |

Intersection Summary

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 2.2 | | | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 3 | 30 | 59 | 193 | 65 | 1 |
| Future Vol, veh/h | 3 | 30 | 59 | 193 | 65 | 1 |
| 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 | 69 | 69 | 69 | 69 | 69 | 69 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 4 | 43 | 86 | 280 | 94 | 1 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 407 | 48 | 95 | 0 | - | 0 |
| Stage 1 | 95 | - | - | - | - | - |
| Stage 2 | 312 | - | - | - | - | - |
| 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 | 569 | 1007 | 1489 | - | - | - |
| Stage 1 | 915 | - | - | - | - | - |
| Stage 2 | 712 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 530 | 1007 | 1489 | - | - | - |
| Mov Cap-2 Maneuver | 530 | - | - | - | - | - |
| Stage 1 | 853 | - | - | - | - | - |
| Stage 2 | 712 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.1 | 1.9 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1489 | - | 931 | - | - |
| HCM Lane V/C Ratio | 0.057 | - | 0.051 | - | - |
| HCM Control Delay (s) | 7.6 | 0.2 | 9.1 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 56 | 230 | 2 | 1 | 225 | 75 | 0 | 4 | 2 | 87 | 1 | 125 |
| Future Vol, veh/h | 56 | 230 | 2 | 1 | 225 | 75 | 0 | 4 | 2 | 87 | 1 | 125 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 64 | 261 | 2 | 1 | 256 | 85 | 0 | 5 | 2 | 99 | 1 | 142 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 342 | 0 | 0 | 263 | 0 | 0 | 762 | 734 | 262 | 696 | 693 | 300 |
| Stage 1 | - | - | - | - | - | - | 390 | 390 | - | 302 | 302 | - |
| Stage 2 | - | - | - | - | - | - | 372 | 344 | - | 394 | 391 | - |
| 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 | 1211 | - | - | 1295 | - | - | 320 | 346 | 774 | 355 | 366 | 737 |
| Stage 1 | - | - | - | - | - | - | 632 | 606 | - | 705 | 662 | - |
| Stage 2 | - | - | - | - | - | - | 646 | 635 | - | 629 | 605 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1210 | - | - | 1295 | - | - | 247 | 327 | 774 | 335 | 346 | 736 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 247 | 327 | - | 335 | 346 | - |
| Stage 1 | - | - | - | - | - | - | 599 | 574 | - | 667 | 661 | - |
| Stage 2 | - | - | - | - | - | - | 520 | 634 | - | 589 | 573 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1.6 | 0 | 14 | 19.1 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 405 | 1210 | - | - | 1295 | - | - | 493 |
| HCM Lane V/C Ratio | 0.017 | 0.053 | - | - | 0.001 | - | - | 0.491 |
| HCM Control Delay (s) | 14 | 8.1 | - | - | 7.8 | 0 | - | 19.1 |
| HCM Lane LOS | B | A | - | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0.2 | - | - | 0 | - | - | 2.7 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 44 | 0 | 0 | 40 | 60 | 38 | 573 | 28 | 4 | 522 | 87 |
| Future Vol, veh/h | 0 | 0 | 44 | 0 | 0 | 40 | 60 | 38 | 573 | 28 | 4 | 522 | 87 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | - | 150 | - | - | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 57 | 0 | 0 | 52 | 78 | 49 | 744 | 36 | 5 | 678 | 113 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 396 | - | - | 390 | 791 | 791 | 0 | 0 | 780 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 600 | 0 | 0 | 606 | 449 | 819 | - | - | 827 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 600 | - | - | 606 | 514 | 514 | - | - | 827 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.6 | 11.5 | 2 | 0.1 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 514 | - | - | 600 | 606 | 827 | - | - |
| HCM Lane V/C Ratio | 0.248 | - | - | 0.095 | 0.086 | 0.006 | - | - |
| HCM Control Delay (s) | 14.3 | - | - | 11.6 | 11.5 | 9.4 | - | - |
| HCM Lane LOS | B | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 1 | - | - | 0.3 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 39 | 0 | 0 | 22 | 25 | 27 | 765 | 36 | 11 | 656 | 44 |
| Future Vol, veh/h | 0 | 0 | 39 | 0 | 0 | 22 | 25 | 27 | 765 | 36 | 11 | 656 | 44 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 42 | 0 | 0 | 24 | 27 | 29 | 832 | 39 | 12 | 713 | 48 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 384 | - | - | 446 | 761 | 761 | 0 | 0 | 880 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 611 | 0 | 0 | 557 | 469 | 840 | - | - | 757 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 609 | - | - | 552 | 584 | 584 | - | - | 751 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.4 | 11.8 | 0.7 | 0.2 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 584 | - | - | 609 | 552 | 751 | - | - |
| HCM Lane V/C Ratio | 0.097 | - | - | 0.07 | 0.043 | 0.016 | - | - |
| HCM Control Delay (s) | 11.8 | - | - | 11.4 | 11.8 | 9.9 | - | - |
| HCM Lane LOS | B | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.2 | 0.1 | 0 | - | - |

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | R | R | UL | L |
| Maximum Queue (ft) | 31 | 51 | 74 | 26 |
| Average Queue (ft) | 20 | 25 | 31 | 1 |
| 95th Queue (ft) | 37 | 50 | 65 | 9 |
| Link Distance (ft) | 2579 | 214 | | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | 150 | 150 |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 55 | 27 |
| Average Queue (ft) | 37 | 1 |
| 95th Queue (ft) | 52 | 9 |
| Link Distance (ft) | 1388 | 1244 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | TR | L | T | TR | L | T | TR |
| Maximum Queue (ft) | 166 | 140 | 191 | 160 | 265 | 264 | 118 | 76 | 74 | 183 | 93 | 164 |
| Average Queue (ft) | 64 | 69 | 92 | 55 | 102 | 130 | 62 | 35 | 35 | 92 | 45 | 85 |
| 95th Queue (ft) | 119 | 129 | 165 | 114 | 209 | 246 | 121 | 69 | 62 | 156 | 85 | 141 |
| Link Distance (ft) | | 956 | 956 | | 2607 | 2607 | | 2466 | 2466 | | 1270 | 1270 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 180 | | | 180 | | | 180 | | | 180 | | |
| Storage Blk Time (%) | 0 | | | 0 | 1 | | | | | 0 | | |
| Queuing Penalty (veh) | 0 | | | 0 | 1 | | | | | 0 | | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | T | R | UL | T | TR | UL | T |
| Maximum Queue (ft) | 88 | 167 | 215 | 184 | 261 | 204 | 115 | 114 | 133 | 137 | 112 | 113 |
| Average Queue (ft) | 32 | 58 | 93 | 73 | 128 | 122 | 26 | 63 | 66 | 70 | 51 | 67 |
| 95th Queue (ft) | 63 | 121 | 180 | 133 | 201 | 200 | 87 | 106 | 116 | 118 | 100 | 110 |
| Link Distance (ft) | | 2607 | 2607 | | 2520 | 2520 | | | 2564 | 2564 | | 3861 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 140 | | | 75 | 180 | | | 240 | |
| Storage Blk Time (%) | | | | 1 | 6 | 21 | | | | | | |
| Queuing Penalty (veh) | | | | 4 | 7 | 13 | | | | | | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | R |
| Maximum Queue (ft) | 128 | 85 |
| Average Queue (ft) | 64 | 35 |
| 95th Queue (ft) | 112 | 64 |
| Link Distance (ft) | 3861 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 120 |
| Storage Blk Time (%) | 1 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 45 | 31 |
| Average Queue (ft) | 23 | 6 |
| 95th Queue (ft) | 42 | 26 |
| Link Distance (ft) | 2234 | 1450 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | L | LTR | LTR |
| Maximum Queue (ft) | 32 | 31 | 74 |
| Average Queue (ft) | 6 | 3 | 38 |
| 95th Queue (ft) | 25 | 18 | 61 |
| Link Distance (ft) | | 749 | 1172 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 415 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Network Summary

Network wide Queuing Penalty: 27

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | R | R | UL | T | TR | L | T | TR |
| Maximum Queue (ft) | 32 | 54 | 62 | 29 | 31 | 27 | 27 | 51 |
| Average Queue (ft) | 20 | 23 | 20 | 1 | 2 | 4 | 1 | 4 |
| 95th Queue (ft) | 36 | 52 | 48 | 10 | 14 | 21 | 9 | 22 |
| Link Distance (ft) | 2579 | 214 | | 3861 | 3861 | | 3870 | 3870 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | | 150 | | | 150 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LR | TR | LT |
| Maximum Queue (ft) | 56 | 20 | 54 |
| Average Queue (ft) | 32 | 1 | 14 |
| 95th Queue (ft) | 55 | 7 | 39 |
| Link Distance (ft) | 1388 | 1270 | 1244 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | TR | L | T | TR | L | T | TR |
| Maximum Queue (ft) | 197 | 294 | 238 | 51 | 250 | 283 | 132 | 102 | 138 | 160 | 154 | 183 |
| Average Queue (ft) | 130 | 119 | 105 | 12 | 67 | 78 | 79 | 55 | 76 | 86 | 31 | 57 |
| 95th Queue (ft) | 197 | 222 | 204 | 38 | 156 | 174 | 124 | 97 | 120 | 148 | 82 | 118 |
| Link Distance (ft) | | 956 | 956 | | 2607 | 2607 | | 2466 | 2466 | | 1270 | 1270 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 180 | | | 180 | | | 180 | | | 180 | | |
| Storage Blk Time (%) | 2 | 2 | | | 1 | | | | | 0 | | |
| Queuing Penalty (veh) | 9 | 4 | | | 0 | | | | | 0 | | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | T | R | UL | T | TR | UL | T |
| Maximum Queue (ft) | 156 | 312 | 337 | 152 | 184 | 159 | 115 | 295 | 278 | 297 | 111 | 121 |
| Average Queue (ft) | 94 | 177 | 201 | 55 | 93 | 85 | 41 | 134 | 152 | 169 | 55 | 64 |
| 95th Queue (ft) | 148 | 259 | 301 | 128 | 145 | 149 | 115 | 233 | 260 | 282 | 103 | 114 |
| Link Distance (ft) | | 2607 | 2607 | | 2520 | 2520 | | | 2564 | 2564 | | 3861 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 140 | | | 75 | 180 | | | 240 | |
| Storage Blk Time (%) | | 1 | | 1 | 1 | 19 | | 3 | 8 | | | |
| Queuing Penalty (veh) | | 1 | | 2 | 0 | 10 | | 7 | 16 | | | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | R |
| Maximum Queue (ft) | 128 | 75 |
| Average Queue (ft) | 69 | 23 |
| 95th Queue (ft) | 119 | 51 |
| Link Distance (ft) | 3861 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 120 |
| Storage Blk Time (%) | 1 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 50 | 28 |
| Average Queue (ft) | 23 | 4 |
| 95th Queue (ft) | 45 | 19 |
| Link Distance (ft) | 2234 | 1450 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | L | LTR | LTR |
| Maximum Queue (ft) | 31 | 32 | 117 |
| Average Queue (ft) | 10 | 11 | 55 |
| 95th Queue (ft) | 31 | 35 | 97 |
| Link Distance (ft) | | 798 | 1172 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 415 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Network Summary

Network wide Queuing Penalty: 50

# Appendix G: Existing plus Project Traffic Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 10.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 40 | 3 | 22 | 44 | 3 | 16 | 60 | 38 | 563 | 25 | 4 | 499 | 84 |
| Future Vol, veh/h | 40 | 3 | 22 | 44 | 3 | 16 | 60 | 38 | 563 | 25 | 4 | 499 | 84 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 52 | 4 | 29 | 57 | 4 | 21 | 78 | 49 | 731 | 32 | 5 | 648 | 109 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1335 | 1730 | 379 | 1337 | 1768 | 382 | 757 | 757 | 0 | 0 | 763 | 0 | 0 |
| Stage 1 | 713 | 713 | - | 1001 | 1001 | - | - | - | - | - | - | - | - |
| Stage 2 | 622 | 1017 | - | 336 | 767 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 111 | 86 | 616 | 110 | 82 | 613 | 472 | 843 | - | - | 839 | - | - |
| Stage 1 | 387 | 431 | - | 258 | 317 | - | - | - | - | - | - | - | - |
| Stage 2 | 439 | 311 | - | 649 | 407 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 84 | 66 | 616 | 82 | 63 | 613 | 554 | 554 | - | - | 839 | - | - |
| Mov Cap-2 Maneuver | 84 | 66 | - | 82 | 63 | - | - | - | - | - | - | - | - |
| Stage 1 | 298 | 428 | - | 199 | 244 | - | - | - | - | - | - | - | - |
| Stage 2 | 322 | 240 | - | 610 | 405 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 91.1 | 114.7 | 1.9 | 0.1 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 554 | - | - | 117 | 103 | 839 | - | - |
| HCM Lane V/C Ratio | 0.23 | - | - | 0.722 | 0.794 | 0.006 | - | - |
| HCM Control Delay (s) | 13.4 | - | - | 91.1 | 114.7 | 9.3 | - | - |
| HCM Lane LOS | B | - | - | F | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.9 | - | - | 3.9 | 4.4 | 0 | - | - |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 1.9 | | | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 57 | 43 | 351 | 17 | 17 | 438 |
| Future Vol, veh/h | 57 | 43 | 351 | 17 | 17 | 438 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 83 | 83 | 83 | 83 | 83 | 83 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 69 | 52 | 423 | 20 | 20 | 528 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 737 | 222 | 0 | 0 | 443 | 0 |
| Stage 1 | 433 | - | - | - | - | - |
| Stage 2 | 304 | - | - | - | - | - |
| 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 | 352 | 779 | - | - | 1106 | - |
| Stage 1 | 619 | - | - | - | - | - |
| Stage 2 | 719 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 343 | 779 | - | - | 1106 | - |
| Mov Cap-2 Maneuver | 343 | - | - | - | - | - |
| Stage 1 | 603 | - | - | - | - | - |
| Stage 2 | 719 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 15.8 | 0 | 0.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 452 | 1106 | - |
| HCM Lane V/C Ratio | - | - | 0.267 | 0.019 | - |
| HCM Control Delay (s) | - | - | 15.8 | 8.3 | 0.1 |
| HCM Lane LOS | - | - | C | A | A |
| HCM 95th %tile Q(veh) | - | - | 1.1 | 0.1 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 122 | 517 | 124 | 66 | 68 | 928 | 123 | 100 | 98 | 17 | 203 |
| Future Volume (vph) | 4 | 122 | 517 | 124 | 66 | 68 | 928 | 123 | 100 | 98 | 17 | 203 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.97 | | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3395 | | | 1752 | 3436 | | 1752 | 3421 | | 1751 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.41 | 1.00 | | 0.67 |
| Satd. Flow (perm) | | 1752 | 3395 | | | 1752 | 3436 | | 752 | 3421 | | 1235 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 4 | 137 | 581 | 139 | 74 | 76 | 1043 | 138 | 112 | 110 | 19 | 228 |
| RTOR Reduction (vph) | 0 | 0 | 16 | 0 | 0 | 0 | 8 | 0 | 0 | 14 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 141 | 704 | 0 | 0 | 150 | 1173 | 0 | 112 | 115 | 0 | 228 |
| Confl. Peds. (#/hr) | | 5 | | 1 | | 1 | | 5 | 1 | | 1 | 1 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 11.8 | 51.7 | | | 13.7 | 53.6 | | 25.8 | 25.8 | | 25.8 |
| Effective Green, g (s) | | 11.8 | 51.7 | | | 13.7 | 53.6 | | 25.8 | 25.8 | | 25.8 |
| Actuated g/C Ratio | | 0.11 | 0.49 | | | 0.13 | 0.51 | | 0.24 | 0.24 | | 0.24 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 195 | 1655 | | | 226 | 1737 | | 183 | 832 | | 300 |
| v/s Ratio Prot | | c0.08 | 0.21 | | | 0.09 | c0.34 | | | 0.03 | | |
| v/s Ratio Perm | | | | | | | | | 0.15 | | | c0.18 |
| v/c Ratio | | 0.72 | 0.43 | | | 0.66 | 0.68 | | 0.61 | 0.14 | | 0.76 |
| Uniform Delay, d1 | | 45.5 | 17.5 | | | 44.0 | 19.7 | | 35.7 | 31.4 | | 37.2 |
| Progression Factor | | 1.00 | 1.00 | | | 1.06 | 0.47 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 12.4 | 0.8 | | | 6.5 | 1.9 | | 5.9 | 0.1 | | 10.8 |
| Delay (s) | | 58.0 | 18.4 | | | 53.0 | 11.1 | | 41.6 | 31.5 | | 48.0 |
| Level of Service | | E | B | | | D | B | | D | C | | D |
| Approach Delay (s) | | | 24.8 | | | | 15.9 | | | 36.2 | | |
| Approach LOS | | | C | | | | B | | | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 24.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 106.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 70.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | ↑↱ | |
| Traffic Volume (vph) | 98 | 253 |
| Future Volume (vph) | 98 | 253 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.89 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3097 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3097 | |
| Peak-hour factor, PHF | 0.89 | 0.89 |
| Adj. Flow (vph) | 110 | 284 |
| RTOR Reduction (vph) | 181 | 0 |
| Lane Group Flow (vph) | 213 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 25.8 | |
| Effective Green, g (s) | 25.8 | |
| Actuated g/C Ratio | 0.24 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 753 | |
| v/s Ratio Prot | 0.07 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.28 | |
| Uniform Delay, d1 | 32.6 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.2 | |
| Delay (s) | 32.8 | |
| Level of Service | C | |
| Approach Delay (s) | 38.4 | |
| Approach LOS | D | |

| Intersection Summary |
|---|

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 0.5 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 801 | 1113 | 35 | 0 | 67 |
| Future Vol, veh/h | 0 | 801 | 1113 | 35 | 0 | 67 |
| 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 | 871 | 1210 | 38 | 0 | 73 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 624 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 426 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 426 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 15.2 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 426 |
| HCM Lane V/C Ratio | - | - | - | 0.171 |
| HCM Control Delay (s) | - | - | - | 15.2 |
| HCM Lane LOS | - | - | - | C |
| HCM 95th %tile Q(veh) | - | - | - | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 56 | 745 | 1102 | 64 | 0 | 65 |
| Future Vol, veh/h | 56 | 745 | 1102 | 64 | 0 | 65 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | - | - | - | - | 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 | 837 | 1238 | 72 | 0 | 73 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1310 | 0 | - | 0 | - | 655 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.16 | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.23 | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 519 | - | - | - | 0 | 406 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 519 | - | - | - | - | 406 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.9 | 0 | 15.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 519 | - | - | - | 406 |
| HCM Lane V/C Ratio | 0.121 | - | - | - | 0.18 |
| HCM Control Delay (s) | 12.9 | - | - | - | 15.8 |
| HCM Lane LOS | B | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 745 | 1163 | 12 | 0 | 3 |
| Future Vol, veh/h | 0 | 745 | 1163 | 12 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 89 | 89 | 89 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 837 | 1307 | 13 | 0 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 660 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 403 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 403 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 14 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 403 |
| HCM Lane V/C Ratio | - | - | - | 0.008 |
| HCM Control Delay (s) | - | - | - | 14 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0 |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 86 | 423 | 233 | 15 | 100 | 903 | 63 | 5 | 106 | 207 | 49 |
| Future Volume (vph) | 2 | 86 | 423 | 233 | 15 | 100 | 903 | 63 | 5 | 106 | 207 | 49 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frt | | 1.00 | 0.95 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.97 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3318 | | | 1752 | 3505 | 1568 | | 1752 | 3405 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3318 | | | 1752 | 3505 | 1568 | | 1752 | 3405 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 93 | 460 | 253 | 16 | 109 | 982 | 68 | 5 | 115 | 225 | 53 |
| RTOR Reduction (vph) | 0 | 0 | 60 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 0 | 95 | 653 | 0 | 0 | 125 | 982 | 33 | 0 | 120 | 255 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 8.2 | 44.0 | | | 15.4 | 50.9 | 50.9 | | 10.6 | 19.9 | |
| Effective Green, g (s) | | 8.2 | 44.0 | | | 15.4 | 50.9 | 50.9 | | 10.6 | 19.9 | |
| Actuated g/C Ratio | | 0.08 | 0.42 | | | 0.15 | 0.48 | 0.48 | | 0.10 | 0.19 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 135 | 1377 | | | 254 | 1683 | 752 | | 175 | 639 | |
| v/s Ratio Prot | | c0.05 | 0.20 | | | 0.07 | c0.28 | | | c0.07 | 0.07 | |
| v/s Ratio Perm | | | | | | | | 0.02 | | | | |
| v/c Ratio | | 0.70 | 0.47 | | | 0.49 | 0.58 | 0.04 | | 0.69 | 0.40 | |
| Uniform Delay, d1 | | 47.7 | 22.6 | | | 41.7 | 19.9 | 14.6 | | 46.1 | 37.8 | |
| Progression Factor | | 1.04 | 0.86 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 14.1 | 1.1 | | | 1.5 | 1.5 | 0.1 | | 10.6 | 0.4 | |
| Delay (s) | | 63.9 | 20.4 | | | 43.2 | 21.4 | 14.7 | | 56.7 | 38.2 | |
| Level of Service | | E | C | | | D | C | B | | E | D | |
| Approach Delay (s) | | | 25.5 | | | | 23.3 | | | | 43.8 | |
| Approach LOS | | | C | | | | C | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 30.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.59 | | |
| Actuated Cycle Length (s) | 106.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 62.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 2 | 70 | 247 | 166 |
| Future Volume (vph) | 2 | 70 | 247 | 166 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1568 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 76 | 268 | 180 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 152 |
| Lane Group Flow (vph) | 0 | 78 | 268 | 28 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 7.3 | 16.6 | 16.6 |
| Effective Green, g (s) | | 7.3 | 16.6 | 16.6 |
| Actuated g/C Ratio | | 0.07 | 0.16 | 0.16 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 120 | 548 | 245 |
| v/s Ratio Prot | | c0.04 | c0.08 | |
| v/s Ratio Perm | | | | 0.02 |
| v/c Ratio | | 0.65 | 0.49 | 0.12 |
| Uniform Delay, d1 | | 48.1 | 40.8 | 38.4 |
| Progression Factor | | 1.02 | 1.02 | 1.08 |
| Incremental Delay, d2 | | 11.9 | 0.7 | 0.2 |
| Delay (s) | | 60.9 | 42.2 | 41.5 |
| Level of Service | | E | D | D |
| Approach Delay (s) | | | 44.8 | |
| Approach LOS | | | D | |

Intersection Summary

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 2.3 | | | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 3 | 60 | 25 | 110 | 149 | 5 |
| Future Vol, veh/h | 3 | 60 | 25 | 110 | 149 | 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 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 4 | 81 | 34 | 149 | 201 | 7 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 348 | 104 | 208 | 0 | - | 0 |
| Stage 1 | 205 | - | - | - | - | - |
| Stage 2 | 143 | - | - | - | - | - |
| 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 | 620 | 927 | 1353 | - | - | - |
| Stage 1 | 806 | - | - | - | - | - |
| Stage 2 | 866 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 603 | 927 | 1353 | - | - | - |
| Mov Cap-2 Maneuver | 603 | - | - | - | - | - |
| Stage 1 | 784 | - | - | - | - | - |
| Stage 2 | 866 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.4 | 1.5 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1353 | - | 904 | - | - |
| HCM Lane V/C Ratio | 0.025 | - | 0.094 | - | - |
| HCM Control Delay (s) | 7.7 | 0.1 | 9.4 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.3 | - | - |

| 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 | 43 | 148 | 0 | 1 | 188 | 80 | 1 | 0 | 1 | 64 | 1 | 71 |
| Future Vol, veh/h | 43 | 148 | 0 | 1 | 188 | 80 | 1 | 0 | 1 | 64 | 1 | 71 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 415 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 51 | 174 | 0 | 1 | 221 | 94 | 1 | 0 | 1 | 75 | 1 | 84 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 315 | 0 | 0 | 174 | 0 | 0 | 589 | 593 | 174 | 547 | 546 | 268 |
| Stage 1 | - | - | - | - | - | - | 276 | 276 | - | 270 | 270 | - |
| Stage 2 | - | - | - | - | - | - | 313 | 317 | - | 277 | 276 | - |
| 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 | 1240 | - | - | 1397 | - | - | 418 | 417 | 867 | 446 | 444 | 768 |
| Stage 1 | - | - | - | - | - | - | 728 | 680 | - | 734 | 684 | - |
| Stage 2 | - | - | - | - | - | - | 696 | 652 | - | 727 | 680 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1240 | - | - | 1397 | - | - | 360 | 399 | 867 | 431 | 425 | 768 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 360 | 399 | - | 431 | 425 | - |
| Stage 1 | - | - | - | - | - | - | 698 | 652 | - | 704 | 683 | - |
| Stage 2 | - | - | - | - | - | - | 619 | 651 | - | 696 | 652 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1.8 | 0 | 12.1 | 14 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 509 | 1240 | - | - | 1397 | - | - | 559 |
| HCM Lane V/C Ratio | 0.005 | 0.041 | - | - | 0.001 | - | - | 0.286 |
| HCM Control Delay (s) | 12.1 | 8 | - | - | 7.6 | 0 | - | 14 |
| HCM Lane LOS | B | A | - | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0 | 0.1 | - | - | 0 | - | - | 1.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 4 | 23 | 26 | 3 | 8 | 25 | 27 | 751 | 32 | 11 | 650 | 41 |
| Future Vol, veh/h | 27 | 4 | 23 | 26 | 3 | 8 | 25 | 27 | 751 | 32 | 11 | 650 | 41 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 29 | 4 | 25 | 28 | 3 | 9 | 27 | 29 | 816 | 35 | 12 | 707 | 45 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1277 | 1726 | 379 | 1338 | 1731 | 436 | 751 | 752 | 0 | 0 | 860 | 0 | 0 |
| Stage 1 | 754 | 754 | - | 955 | 955 | - | - | - | - | - | - | - | - |
| Stage 2 | 523 | 972 | - | 383 | 776 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 122 | 87 | 616 | 110 | 86 | 565 | 476 | 847 | - | - | 771 | - | - |
| Stage 1 | 365 | 413 | - | 276 | 333 | - | - | - | - | - | - | - | - |
| Stage 2 | 503 | 327 | - | 609 | 403 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 106 | 77 | 614 | 92 | 76 | 560 | 601 | 601 | - | - | 764 | - | - |
| Mov Cap-2 Maneuver | 106 | 77 | - | 92 | 76 | - | - | - | - | - | - | - | - |
| Stage 1 | 330 | 406 | - | 248 | 299 | - | - | - | - | - | - | - | - |
| Stage 2 | 443 | 293 | - | 567 | 397 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 41 | 55.5 | 0.7 | 0.2 |
| HCM LOS | E | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 601 | - | - | 157 | 110 | 764 | - | - |
| HCM Lane V/C Ratio | 0.094 | - | - | 0.374 | 0.366 | 0.016 | - | - |
| HCM Control Delay (s) | 11.6 | - | - | 41 | 55.5 | 9.8 | - | - |
| HCM Lane LOS | B | - | - | E | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 1.6 | 1.5 | 0 | - | - |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 1.4 | | | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 23 | 52 | 486 | 55 | 40 | 332 |
| Future Vol, veh/h | 23 | 52 | 486 | 55 | 40 | 332 |
| 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 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 24 | 55 | 512 | 58 | 42 | 349 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 800 | 285 | 0 | 0 | 570 | 0 |
| Stage 1 | 541 | - | - | - | - | - |
| Stage 2 | 259 | - | - | - | - | - |
| 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 | 320 | 709 | - | - | 992 | - |
| Stage 1 | 545 | - | - | - | - | - |
| Stage 2 | 758 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 303 | 709 | - | - | 992 | - |
| Mov Cap-2 Maneuver | 303 | - | - | - | - | - |
| Stage 1 | 516 | - | - | - | - | - |
| Stage 2 | 758 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 13.5 | 0 | 1.1 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 503 | 992 | - |
| HCM Lane V/C Ratio | - | - | 0.157 | 0.042 | - |
| HCM Control Delay (s) | - | - | 13.5 | 8.8 | 0.2 |
| HCM Lane LOS | - | - | B | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.6 | 0.1 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 238 | 844 | 53 | 60 | 21 | 592 | 113 | 117 | 159 | 69 | 169 |
| Future Volume (vph) | 2 | 238 | 844 | 53 | 60 | 21 | 592 | 113 | 117 | 159 | 69 | 169 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.99 | | | 1.00 | 0.98 | | 1.00 | 0.95 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3474 | | | 1752 | 3420 | | 1752 | 3346 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.57 | 1.00 | | 0.56 |
| Satd. Flow (perm) | | 1752 | 3474 | | | 1752 | 3420 | | 1051 | 3346 | | 1039 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 2 | 256 | 908 | 57 | 65 | 23 | 637 | 122 | 126 | 171 | 74 | 182 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 0 | 12 | 0 | 0 | 54 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 258 | 962 | 0 | 0 | 88 | 747 | 0 | 126 | 191 | 0 | 182 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 19.9 | 54.8 | | | 12.6 | 47.5 | | 23.8 | 23.8 | | 23.8 |
| Effective Green, g (s) | | 19.9 | 54.8 | | | 12.6 | 47.5 | | 23.8 | 23.8 | | 23.8 |
| Actuated g/C Ratio | | 0.19 | 0.52 | | | 0.12 | 0.45 | | 0.22 | 0.22 | | 0.22 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 328 | 1795 | | | 208 | 1532 | | 235 | 751 | | 233 |
| v/s Ratio Prot | | c0.15 | c0.28 | | | 0.05 | c0.22 | | | 0.06 | | |
| v/s Ratio Perm | | | | | | | | | 0.12 | | | c0.18 |
| v/c Ratio | | 0.79 | 0.54 | | | 0.42 | 0.49 | | 0.54 | 0.25 | | 0.78 |
| Uniform Delay, d1 | | 41.0 | 17.1 | | | 43.3 | 20.7 | | 36.2 | 33.8 | | 38.7 |
| Progression Factor | | 1.00 | 1.00 | | | 0.61 | 0.45 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 11.8 | 1.2 | | | 1.3 | 1.1 | | 2.3 | 0.2 | | 15.5 |
| Delay (s) | | 52.8 | 18.3 | | | 27.9 | 10.4 | | 38.6 | 34.0 | | 54.2 |
| Level of Service | | D | B | | | C | B | | D | C | | D |
| Approach Delay (s) | | | 25.5 | | | | 12.2 | | | 35.5 | | |
| Approach LOS | | | C | | | | B | | | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.3 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.64 | | |
| Actuated Cycle Length (s) | 106.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 65.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 56 | 167 |
| Future Volume (vph) | 56 | 167 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.89 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3081 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3081 | |
| Peak-hour factor, PHF | 0.93 | 0.93 |
| Adj. Flow (vph) | 60 | 180 |
| RTOR Reduction (vph) | 140 | 0 |
| Lane Group Flow (vph) | 100 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 23.8 | |
| Effective Green, g (s) | 23.8 | |
| Actuated g/C Ratio | 0.22 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 691 | |
| v/s Ratio Prot | 0.03 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.15 | |
| Uniform Delay, d1 | 32.9 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.1 | |
| Delay (s) | 33.0 | |
| Level of Service | C | |
| Approach Delay (s) | 42.2 | |
| Approach LOS | D | |

Intersection Summary

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1162 | 736 | 26 | 0 | 42 |
| Future Vol, veh/h | 0 | 1162 | 736 | 26 | 0 | 42 |
| 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 | 1263 | 800 | 28 | 0 | 46 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 414 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 584 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 584 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 11.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 584 |
| HCM Lane V/C Ratio | - | - | - | 0.078 |
| HCM Control Delay (s) | - | - | - | 11.7 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.3 |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 0.6 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 38 | 1124 | 697 | 50 | 0 | 72 |
| Future Vol, veh/h | 38 | 1124 | 697 | 50 | 0 | 72 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | - | - | - | - | 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 | 41 | 1222 | 758 | 54 | 0 | 78 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 812 | 0 | - | 0 | - | 406 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.16 | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.23 | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 804 | - | - | - | 0 | 592 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 804 | - | - | - | - | 592 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0 | 12 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 804 | - | - | - | 592 |
| HCM Lane V/C Ratio | 0.051 | - | - | - | 0.132 |
| HCM Control Delay (s) | 9.7 | - | - | - | 12 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1124 | 722 | 8 | 0 | 25 |
| Future Vol, veh/h | 0 | 1124 | 722 | 8 | 0 | 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 | 0 | 1222 | 785 | 9 | 0 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 397 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 600 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 600 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 11.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 600 |
| HCM Lane V/C Ratio | - | - | - | 0.045 |
| HCM Control Delay (s) | - | - | - | 11.3 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.1 |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 174 | 833 | 148 | 2 | 44 | 382 | 51 | 9 | 200 | 460 | 86 |
| Future Volume (vph) | 6 | 174 | 833 | 148 | 2 | 44 | 382 | 51 | 9 | 200 | 460 | 86 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 1.00 | 0.98 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.98 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3418 | | | 1752 | 3505 | 1546 | | 1752 | 3422 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3418 | | | 1752 | 3505 | 1546 | | 1752 | 3422 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 6 | 181 | 868 | 154 | 2 | 46 | 398 | 53 | 9 | 208 | 479 | 90 |
| RTOR Reduction (vph) | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 36 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 0 | 187 | 1011 | 0 | 0 | 48 | 398 | 17 | 0 | 217 | 552 | 0 |
| Confl. Peds. (#/hr) | | | | 2 | | | | 2 | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 18.8 | 49.4 | | | 4.2 | 34.5 | 34.5 | | 16.6 | 26.2 | |
| Effective Green, g (s) | | 18.8 | 49.4 | | | 4.2 | 34.5 | 34.5 | | 16.6 | 26.2 | |
| Actuated g/C Ratio | | 0.18 | 0.47 | | | 0.04 | 0.33 | 0.33 | | 0.16 | 0.25 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 310 | 1592 | | | 69 | 1140 | 503 | | 274 | 845 | |
| v/s Ratio Prot | | 0.11 | c0.30 | | | c0.03 | 0.11 | | | c0.12 | c0.16 | |
| v/s Ratio Perm | | | | | | | | 0.01 | | | | |
| v/c Ratio | | 0.60 | 0.63 | | | 0.70 | 0.35 | 0.03 | | 0.79 | 0.65 | |
| Uniform Delay, d1 | | 40.2 | 21.5 | | | 50.3 | 27.2 | 24.4 | | 43.0 | 35.8 | |
| Progression Factor | | 0.77 | 0.70 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 2.9 | 1.7 | | | 26.2 | 0.8 | 0.1 | | 14.4 | 1.8 | |
| Delay (s) | | 34.1 | 16.7 | | | 76.5 | 28.1 | 24.5 | | 57.5 | 37.7 | |
| Level of Service | | C | B | | | E | C | C | | E | D | |
| Approach Delay (s) | | | 19.4 | | | | 32.3 | | | | 43.1 | |
| Approach LOS | | | B | | | | C | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 106.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 73.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 11 | 75 | 245 | 122 |
| Future Volume (vph) | 11 | 75 | 245 | 122 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | 0.99 |
| Flpb, ped/bikes | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1545 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1545 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 11 | 78 | 255 | 127 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 107 |
| Lane Group Flow (vph) | 0 | 89 | 255 | 20 |
| Confl. Peds. (#/hr) | | | | 3 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 6.8 | 16.4 | 16.4 |
| Effective Green, g (s) | | 6.8 | 16.4 | 16.4 |
| Actuated g/C Ratio | | 0.06 | 0.15 | 0.15 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 112 | 542 | 239 |
| v/s Ratio Prot | | c0.05 | 0.07 | |
| v/s Ratio Perm | | | | 0.01 |
| v/c Ratio | | 0.79 | 0.47 | 0.08 |
| Uniform Delay, d1 | | 48.9 | 40.8 | 38.4 |
| Progression Factor | | 1.01 | 1.01 | 1.12 |
| Incremental Delay, d2 | | 31.0 | 0.6 | 0.1 |
| Delay (s) | | 80.6 | 42.1 | 43.2 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 49.7 | |
| Approach LOS | | | D | |

| Intersection Summary |
|---|

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 3 | 30 | 59 | 198 | 67 | 1 |
| Future Vol, veh/h | 3 | 30 | 59 | 198 | 67 | 1 |
| 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 | 69 | 69 | 69 | 69 | 69 | 69 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 4 | 43 | 86 | 287 | 97 | 1 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 414 | 49 | 98 | 0 | - | 0 |
| Stage 1 | 98 | - | - | - | - | - |
| Stage 2 | 316 | - | - | - | - | - |
| 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 | 564 | 1006 | 1486 | - | - | - |
| Stage 1 | 912 | - | - | - | - | - |
| Stage 2 | 709 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 525 | 1006 | 1486 | - | - | - |
| Mov Cap-2 Maneuver | 525 | - | - | - | - | - |
| Stage 1 | 849 | - | - | - | - | - |
| Stage 2 | 709 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.1 | 1.9 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1486 | - | 929 | - | - |
| HCM Lane V/C Ratio | 0.058 | - | 0.051 | - | - |
| HCM Control Delay (s) | 7.6 | 0.2 | 9.1 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 61 | 230 | 2 | 1 | 225 | 75 | 0 | 4 | 2 | 87 | 1 | 127 |
| Future Vol, veh/h | 61 | 230 | 2 | 1 | 225 | 75 | 0 | 4 | 2 | 87 | 1 | 127 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 69 | 261 | 2 | 1 | 256 | 85 | 0 | 5 | 2 | 99 | 1 | 144 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 342 | 0 | 0 | 263 | 0 | 0 | 773 | 744 | 262 | 706 | 703 | 300 |
| Stage 1 | - | - | - | - | - | - | 400 | 400 | - | 302 | 302 | - |
| Stage 2 | - | - | - | - | - | - | 373 | 344 | - | 404 | 401 | - |
| 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 | 1211 | - | - | 1295 | - | - | 315 | 342 | 774 | 349 | 361 | 737 |
| Stage 1 | - | - | - | - | - | - | 624 | 600 | - | 705 | 662 | - |
| Stage 2 | - | - | - | - | - | - | 646 | 635 | - | 621 | 599 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1210 | - | - | 1295 | - | - | 241 | 322 | 774 | 329 | 340 | 736 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 241 | 322 | - | 329 | 340 | - |
| Stage 1 | - | - | - | - | - | - | 588 | 566 | - | 664 | 661 | - |
| Stage 2 | - | - | - | - | - | - | 518 | 634 | - | 579 | 565 | - |

| Approach | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM Control Delay, s | 1.7 | | | 0 | | | 14.2 | | | 19.5 | | |
| HCM LOS | | | | | | | B | | | C | | |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 400 | 1210 | - | - | 1295 | - | - | 489 |
| HCM Lane V/C Ratio | 0.017 | 0.057 | - | - | 0.001 | - | - | 0.5 |
| HCM Control Delay (s) | 14.2 | 8.2 | - | - | 7.8 | 0 | - | 19.5 |
| HCM Lane LOS | B | A | - | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0.2 | - | - | 0 | - | - | 2.7 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 44 | 0 | 0 | 40 | 60 | 38 | 603 | 28 | 4 | 543 | 87 |
| Future Vol, veh/h | 0 | 0 | 44 | 0 | 0 | 40 | 60 | 38 | 603 | 28 | 4 | 543 | 87 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | - | 150 | - | - | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 57 | 0 | 0 | 52 | 78 | 49 | 783 | 36 | 5 | 705 | 113 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 409 | - | - | 410 | 818 | 818 | 0 | 0 | 819 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 589 | 0 | 0 | 588 | 431 | 800 | - | - | 799 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 589 | - | - | 588 | 495 | 495 | - | - | 799 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 11.8 | 11.7 | 2 | 0.1 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 495 | - | - | 589 | 588 | 799 | - | - |
| HCM Lane V/C Ratio | 0.257 | - | - | 0.097 | 0.088 | 0.007 | - | - |
| HCM Control Delay (s) | 14.8 | - | - | 11.8 | 11.7 | 9.5 | - | - |
| HCM Lane LOS | B | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 1 | - | - | 0.3 | 0.3 | 0 | - | - |

| Intersection | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Int Delay, s/veh | 0.8 | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 39 | 0 | 0 | 22 | 25 | 27 | 778 | 36 | 11 | 676 | 44 |
| Future Vol, veh/h | 0 | 0 | 39 | 0 | 0 | 22 | 25 | 27 | 778 | 36 | 11 | 676 | 44 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 42 | 0 | 0 | 24 | 27 | 29 | 846 | 39 | 12 | 735 | 48 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 395 | - | - | 453 | 783 | 783 | 0 | 0 | 894 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 601 | 0 | 0 | 551 | 454 | 824 | - | - | 748 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 599 | - | - | 546 | 567 | 567 | - | - | 742 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | | | WB | | | NB | | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM Control Delay, s | 11.5 | | | 11.9 | | | 0.7 | | | | 0.1 | | |
| HCM LOS | B | | | B | | | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 567 | - | - | 599 | 546 | 742 | - | - |
| HCM Lane V/C Ratio | 0.1 | - | - | 0.071 | 0.044 | 0.016 | - | - |
| HCM Control Delay (s) | 12.1 | - | - | 11.5 | 11.9 | 9.9 | - | - |
| HCM Lane LOS | B | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.2 | 0.1 | 0 | - | - |

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB |
|---|---|---|---|
| Directions Served | R | R | UL |
| Maximum Queue (ft) | 43 | 53 | 55 |
| Average Queue (ft) | 23 | 25 | 23 |
| 95th Queue (ft) | 38 | 51 | 52 |
| Link Distance (ft) | 2579 | 214 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 150 |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 94 | 30 |
| Average Queue (ft) | 40 | 5 |
| 95th Queue (ft) | 64 | 21 |
| Link Distance (ft) | 1388 | 1244 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | TR | L | T | TR | L | T | TR |
| Maximum Queue (ft) | 241 | 183 | 183 | 278 | 288 | 277 | 145 | 91 | 117 | 219 | 144 | 263 |
| Average Queue (ft) | 122 | 98 | 106 | 106 | 154 | 160 | 71 | 38 | 37 | 116 | 47 | 116 |
| 95th Queue (ft) | 206 | 167 | 173 | 200 | 244 | 259 | 128 | 74 | 85 | 191 | 96 | 214 |
| Link Distance (ft) | | 956 | 956 | | 279 | 279 | | 2467 | 2467 | | 1270 | 1270 |
| Upstream Blk Time (%) | | | | 0 | 0 | 0 | | | | | | |
| Queuing Penalty (veh) | | | | 0 | 1 | 1 | | | | | | |
| Storage Bay Dist (ft) | 180 | | | 180 | | | 180 | | | 180 | | |
| Storage Blk Time (%) | 3 | 0 | | 0 | 5 | | | | | 1 | | |
| Queuing Penalty (veh) | 9 | 0 | | 0 | 6 | | | | | 1 | | |

## Intersection: 4: Jensen Avenue & Project Driveway 1

| Movement | WB | SB |
|---|---|---|
| Directions Served | TR | R |
| Maximum Queue (ft) | 21 | 106 |
| Average Queue (ft) | 1 | 37 |
| 95th Queue (ft) | 7 | 74 |
| Link Distance (ft) | 208 | 188 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 5: Jensen Avenue & Project Driveway 2

| Movement | EB | EB | WB | SB |
|---|---|---|---|---|
| Directions Served | L | T | TR | R |
| Maximum Queue (ft) | 119 | 91 | 22 | 79 |
| Average Queue (ft) | 32 | 3 | 1 | 32 |
| 95th Queue (ft) | 71 | 30 | 7 | 59 |
| Link Distance (ft) | | 208 | 259 | 336 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 100 | | | |
| Storage Blk Time (%) | 0 | 0 | | |
| Queuing Penalty (veh) | 1 | 0 | | |

## Intersection: 6: Jensen Avenue & Project Driveway 3

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 31 |
| Average Queue (ft) | 3 |
| 95th Queue (ft) | 18 |
| Link Distance (ft) | 225 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | T | R | UL | T | TR | UL | T |
| Maximum Queue (ft) | 134 | 156 | 285 | 172 | 216 | 239 | 115 | 176 | 115 | 113 | 131 | 120 |
| Average Queue (ft) | 66 | 83 | 122 | 77 | 134 | 138 | 41 | 63 | 62 | 48 | 42 | 68 |
| 95th Queue (ft) | 119 | 137 | 200 | 144 | 211 | 207 | 116 | 130 | 119 | 95 | 98 | 109 |
| Link Distance (ft) | | 1717 | 1717 | | 2520 | 2520 | | | 2564 | 2564 | | 3861 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 140 | | | 75 | 180 | | | 240 | |
| Storage Blk Time (%) | | | | 2 | 8 | 26 | | 0 | | | | |
| Queuing Penalty (veh) | | | | 9 | 9 | 16 | | 0 | | | | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | R |
| Maximum Queue (ft) | 152 | 83 |
| Average Queue (ft) | 74 | 43 |
| 95th Queue (ft) | 123 | 74 |
| Link Distance (ft) | 3861 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 120 |
| Storage Blk Time (%) | 1 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB |
|---|---|
| Directions Served | LR |
| Maximum Queue (ft) | 63 |
| Average Queue (ft) | 29 |
| 95th Queue (ft) | 46 |
| Link Distance (ft) | 2234 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | L | LTR | LTR |
| Maximum Queue (ft) | 27 | 31 | 74 |
| Average Queue (ft) | 4 | 3 | 42 |
| 95th Queue (ft) | 21 | 18 | 63 |
| Link Distance (ft) | | 791 | 1172 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 415 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Network Summary

Network wide Queuing Penalty: 55

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | R | R | UL | T | TR | L | T | TR |
| Maximum Queue (ft) | 49 | 50 | 52 | 28 | 30 | 28 | 51 | 54 |
| Average Queue (ft) | 19 | 14 | 17 | 1 | 2 | 4 | 5 | 5 |
| 95th Queue (ft) | 39 | 40 | 47 | 9 | 14 | 18 | 26 | 29 |
| Link Distance (ft) | 2579 | 214 | | 3861 | 3861 | | 3870 | 3870 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | | 150 | | | 150 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 55 | 74 |
| Average Queue (ft) | 34 | 13 |
| 95th Queue (ft) | 58 | 44 |
| Link Distance (ft) | 1388 | 1244 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | TR | L | T | TR | L | T | TR |
| Maximum Queue (ft) | 279 | 410 | 329 | 157 | 298 | 340 | 159 | 133 | 176 | 200 | 74 | 116 |
| Average Queue (ft) | 167 | 197 | 178 | 79 | 132 | 160 | 87 | 58 | 73 | 115 | 23 | 53 |
| 95th Queue (ft) | 258 | 329 | 274 | 147 | 227 | 260 | 138 | 107 | 130 | 189 | 55 | 90 |
| Link Distance (ft) | | 956 | 956 | | 277 | 277 | | 2467 | 2467 | | 1270 | 1270 |
| Upstream Blk Time (%) | | | | | 0 | 1 | | | | | | |
| Queuing Penalty (veh) | | | | | 2 | 5 | | | | | | |
| Storage Bay Dist (ft) | 180 | | | 180 | | | 180 | | | 180 | | |
| Storage Blk Time (%) | 9 | 8 | | | 3 | | | | | 2 | | |
| Queuing Penalty (veh) | 39 | 18 | | | 3 | | | | | 1 | | |

## Intersection: 4: Jensen Avenue & Project Driveway 1

| Movement | WB | SB |
|---|---|---|
| Directions Served | TR | R |
| Maximum Queue (ft) | 25 | 55 |
| Average Queue (ft) | 1 | 27 |
| 95th Queue (ft) | 8 | 51 |
| Link Distance (ft) | 208 | 172 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 5: Jensen Avenue & Project Driveway 2

| Movement | EB | WB | WB | SB |
|---|---|---|---|---|
| Directions Served | L | T | TR | R |
| Maximum Queue (ft) | 74 | 39 | 24 | 98 |
| Average Queue (ft) | 20 | 1 | 1 | 43 |
| 95th Queue (ft) | 57 | 13 | 10 | 72 |
| Link Distance (ft) | | 260 | 260 | 340 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 100 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 6: Jensen Avenue & Project Driveway 3

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 68 |
| Average Queue (ft) | 20 |
| 95th Queue (ft) | 50 |
| Link Distance (ft) | 211 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | T | R | UL | T | TR | UL | T |
| Maximum Queue (ft) | 267 | 347 | 371 | 74 | 172 | 178 | 114 | 299 | 404 | 383 | 152 | 192 |
| Average Queue (ft) | 128 | 158 | 193 | 36 | 104 | 94 | 23 | 158 | 155 | 154 | 76 | 69 |
| 95th Queue (ft) | 227 | 282 | 309 | 66 | 161 | 167 | 69 | 254 | 269 | 253 | 132 | 126 |
| Link Distance (ft) |  | 1717 | 1717 |  | 2520 | 2520 |  |  | 2564 | 2564 |  | 3861 |
| Upstream Blk Time (%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 250 |  |  | 140 |  |  | 75 | 180 |  |  | 240 |  |
| Storage Blk Time (%) | 1 | 2 |  |  | 2 | 18 |  | 8 | 3 |  |  |  |
| Queuing Penalty (veh) | 3 | 3 |  |  | 1 | 9 |  | 19 | 6 |  |  |  |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | R |
| Maximum Queue (ft) | 193 | 118 |
| Average Queue (ft) | 70 | 32 |
| 95th Queue (ft) | 125 | 68 |
| Link Distance (ft) | 3861 |  |
| Upstream Blk Time (%) |  |  |
| Queuing Penalty (veh) |  |  |
| Storage Bay Dist (ft) |  | 120 |
| Storage Blk Time (%) | 1 | 0 |
| Queuing Penalty (veh) | 2 | 0 |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 74 | 28 |
| Average Queue (ft) | 22 | 1 |
| 95th Queue (ft) | 50 | 9 |
| Link Distance (ft) | 2234 | 1450 |
| Upstream Blk Time (%) |  |  |
| Queuing Penalty (veh) |  |  |
| Storage Bay Dist (ft) |  |  |
| Storage Blk Time (%) |  |  |
| Queuing Penalty (veh) |  |  |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | L | LTR | LTR | LTR |
| Maximum Queue (ft) | 89 | 50 | 31 | 99 |
| Average Queue (ft) | 14 | 2 | 4 | 57 |
| 95th Queue (ft) | 53 | 17 | 21 | 94 |
| Link Distance (ft) | | 2578 | 794 | 1172 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 415 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Network Summary

Network wide Queuing Penalty: 110

# Appendix H: Near Term plus Project Traffic Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 15.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 40 | 3 | 28 | 44 | 3 | 16 | 60 | 41 | 585 | 25 | 4 | 567 | 84 |
| Future Vol, veh/h | 40 | 3 | 28 | 44 | 3 | 16 | 60 | 41 | 585 | 25 | 4 | 567 | 84 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 52 | 4 | 36 | 57 | 4 | 21 | 78 | 53 | 760 | 32 | 5 | 736 | 109 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1445 | 1855 | 423 | 1418 | 1893 | 396 | 845 | 845 | 0 | 0 | 792 | 0 | 0 |
| Stage 1 | 801 | 801 | - | 1038 | 1038 | - | - | - | - | - | - | - | - |
| Stage 2 | 644 | 1054 | - | 380 | 855 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 92 | 72 | 577 | 96 | 68 | 600 | 414 | 781 | - | - | 818 | - | - |
| Stage 1 | 342 | 393 | - | 245 | 304 | - | - | - | - | - | - | - | - |
| Stage 2 | 425 | 299 | - | 611 | 371 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 66 | 53 | 577 | 67 | 50 | 600 | 493 | 493 | - | - | 818 | - | - |
| Mov Cap-2 Maneuver | 66 | 53 | - | 67 | 50 | - | - | - | - | - | - | - | - |
| Stage 1 | 251 | 391 | - | 180 | 223 | - | - | - | - | - | - | - | - |
| Stage 2 | 296 | 219 | - | 563 | 369 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 146.9 | 174.6 | 2.1 | 0.1 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 493 | - | - | 100 | 85 | 818 | - | - |
| HCM Lane V/C Ratio | 0.266 | - | - | 0.922 | 0.963 | 0.006 | - | - |
| HCM Control Delay (s) | 14.9 | - | - | 146.9 | 174.6 | 9.4 | - | - |
| HCM Lane LOS | B | - | - | F | F | A | - | - |
| HCM 95th %tile Q(veh) | 1.1 | - | - | 5.4 | 5.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 63 | 43 | 366 | 19 | 17 | 487 |
| Future Vol, veh/h | 63 | 43 | 366 | 19 | 17 | 487 |
| 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 | 83 | 83 | 83 | 83 | 83 | 83 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 76 | 52 | 441 | 23 | 20 | 587 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 787 | 232 | 0 | 0 | 464 | 0 |
| Stage 1 | 453 | - | - | - | - | - |
| Stage 2 | 334 | - | - | - | - | - |
| 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 | 327 | 767 | - | - | 1087 | - |
| Stage 1 | 604 | - | - | - | - | - |
| Stage 2 | 694 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 318 | 767 | - | - | 1087 | - |
| Mov Cap-2 Maneuver | 318 | - | - | - | - | - |
| Stage 1 | 588 | - | - | - | - | - |
| Stage 2 | 694 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.4 | 0 | 0.4 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 417 | 1087 | - |
| HCM Lane V/C Ratio | - | - | 0.306 | 0.019 | - |
| HCM Control Delay (s) | - | - | 17.4 | 8.4 | 0.1 |
| HCM Lane LOS | - | - | C | A | A |
| HCM 95th %tile Q(veh) | - | - | 1.3 | 0.1 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 122 | 613 | 124 | 66 | 68 | 1050 | 123 | 100 | 116 | 17 | 203 |
| Future Volume (vph) | 4 | 122 | 613 | 124 | 66 | 68 | 1050 | 123 | 100 | 116 | 17 | 203 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.97 | | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3409 | | | 1752 | 3444 | | 1752 | 3432 | | 1751 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.35 | 1.00 | | 0.66 |
| Satd. Flow (perm) | | 1752 | 3409 | | | 1752 | 3444 | | 643 | 3432 | | 1212 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 4 | 137 | 689 | 139 | 74 | 76 | 1180 | 138 | 112 | 130 | 19 | 228 |
| RTOR Reduction (vph) | 0 | 0 | 13 | 0 | 0 | 0 | 7 | 0 | 0 | 13 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 141 | 815 | 0 | 0 | 150 | 1311 | 0 | 112 | 136 | 0 | 228 |
| Confl. Peds. (#/hr) | | 5 | | 1 | | 1 | | 5 | 1 | | 1 | 1 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 10.5 | 51.3 | | | 13.7 | 54.5 | | 26.2 | 26.2 | | 26.2 |
| Effective Green, g (s) | | 10.5 | 51.3 | | | 13.7 | 54.5 | | 26.2 | 26.2 | | 26.2 |
| Actuated g/C Ratio | | 0.10 | 0.48 | | | 0.13 | 0.51 | | 0.25 | 0.25 | | 0.25 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 173 | 1649 | | | 226 | 1770 | | 158 | 848 | | 299 |
| v/s Ratio Prot | | c0.08 | 0.24 | | | 0.09 | c0.38 | | | 0.04 | | |
| v/s Ratio Perm | | | | | | | | | 0.17 | | | c0.19 |
| v/c Ratio | | 0.82 | 0.49 | | | 0.66 | 0.74 | | 0.71 | 0.16 | | 0.76 |
| Uniform Delay, d1 | | 46.8 | 18.6 | | | 44.0 | 20.2 | | 36.4 | 31.3 | | 37.0 |
| Progression Factor | | 1.00 | 1.00 | | | 1.06 | 0.45 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 24.6 | 1.1 | | | 6.2 | 2.4 | | 13.6 | 0.1 | | 10.9 |
| Delay (s) | | 71.4 | 19.6 | | | 52.8 | 11.5 | | 50.0 | 31.4 | | 48.0 |
| Level of Service | | E | B | | | D | B | | D | C | | D |
| Approach Delay (s) | | | 27.2 | | | | 15.7 | | | 39.4 | | |
| Approach LOS | | | C | | | | B | | | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.75 | | |
| Actuated Cycle Length (s) | 106.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 75.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 156 | 253 |
| Future Volume (vph) | 156 | 253 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.91 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3154 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3154 | |
| Peak-hour factor, PHF | 0.89 | 0.89 |
| Adj. Flow (vph) | 175 | 284 |
| RTOR Reduction (vph) | 144 | 0 |
| Lane Group Flow (vph) | 315 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 26.2 | |
| Effective Green, g (s) | 26.2 | |
| Actuated g/C Ratio | 0.25 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 779 | |
| v/s Ratio Prot | 0.10 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.40 | |
| Uniform Delay, d1 | 33.4 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.3 | |
| Delay (s) | 33.7 | |
| Level of Service | C | |
| Approach Delay (s) | 38.4 | |
| Approach LOS | D | |

Intersection Summary

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 897 | 1235 | 35 | 0 | 67 |
| Future Vol, veh/h | 0 | 897 | 1235 | 35 | 0 | 67 |
| 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 | 975 | 1342 | 38 | 0 | 73 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 690 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 385 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 385 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 16.5 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 385 |
| HCM Lane V/C Ratio | - | - | - | 0.189 |
| HCM Control Delay (s) | - | - | - | 16.5 |
| HCM Lane LOS | - | - | - | C |
| HCM 95th %tile Q(veh) | - | - | - | 0.7 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 56 | 841 | 1224 | 64 | 0 | 65 |
| Future Vol, veh/h | 56 | 841 | 1224 | 64 | 0 | 65 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | - | - | - | - | 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 | 61 | 914 | 1330 | 70 | 0 | 71 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1400 | 0 | - | 0 | - | 700 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.16 | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.23 | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 479 | - | - | - | 0 | 379 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 479 | - | - | - | - | 379 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.8 | 0 | 16.7 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 479 | - | - | - | 379 |
| HCM Lane V/C Ratio | 0.127 | - | - | - | 0.186 |
| HCM Control Delay (s) | 13.6 | - | - | - | 16.7 |
| HCM Lane LOS | B | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 0.7 |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 0 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 841 | 1285 | 12 | 0 | 3 |
| Future Vol, veh/h | 0 | 841 | 1285 | 12 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 914 | 1397 | 13 | 0 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 705 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 377 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 377 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 14.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 377 |
| HCM Lane V/C Ratio | - | - | - | 0.009 |
| HCM Control Delay (s) | - | - | - | 14.6 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0 |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 86 | 519 | 233 | 15 | 149 | 1025 | 63 | 5 | 106 | 230 | 93 |
| Future Volume (vph) | 2 | 86 | 519 | 233 | 15 | 149 | 1025 | 63 | 5 | 106 | 230 | 93 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frt | | 1.00 | 0.95 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.96 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3342 | | | 1752 | 3505 | 1568 | | 1752 | 3354 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3342 | | | 1752 | 3505 | 1568 | | 1752 | 3354 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 93 | 564 | 253 | 16 | 162 | 1114 | 68 | 5 | 115 | 250 | 101 |
| RTOR Reduction (vph) | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 47 | 0 |
| Lane Group Flow (vph) | 0 | 95 | 776 | 0 | 0 | 178 | 1114 | 33 | 0 | 120 | 304 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 6.8 | 43.6 | | | 14.9 | 51.4 | 51.4 | | 9.7 | 22.1 | |
| Effective Green, g (s) | | 6.8 | 43.6 | | | 14.9 | 51.4 | 51.4 | | 9.7 | 22.1 | |
| Actuated g/C Ratio | | 0.06 | 0.41 | | | 0.14 | 0.48 | 0.48 | | 0.09 | 0.21 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 112 | 1374 | | | 246 | 1699 | 760 | | 160 | 699 | |
| v/s Ratio Prot | | c0.05 | 0.23 | | | c0.10 | c0.32 | | | c0.07 | 0.09 | |
| v/s Ratio Perm | | | | | | | | 0.02 | | | | |
| v/c Ratio | | 0.85 | 0.56 | | | 0.72 | 0.66 | 0.04 | | 0.75 | 0.43 | |
| Uniform Delay, d1 | | 49.1 | 23.9 | | | 43.6 | 20.6 | 14.4 | | 47.0 | 36.5 | |
| Progression Factor | | 1.11 | 0.77 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 37.7 | 1.5 | | | 10.1 | 2.0 | 0.1 | | 17.8 | 0.4 | |
| Delay (s) | | 92.2 | 19.8 | | | 53.6 | 22.6 | 14.5 | | 64.7 | 36.9 | |
| Level of Service | | F | B | | | D | C | B | | E | D | |
| Approach Delay (s) | | | 27.3 | | | | 26.3 | | | | 44.0 | |
| Approach LOS | | | C | | | | C | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.67 | | |
| Actuated Cycle Length (s) | 106.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 66.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 2 | 70 | 313 | 166 |
| Future Volume (vph) | 2 | 70 | 313 | 166 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1568 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 76 | 340 | 180 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 149 |
| Lane Group Flow (vph) | 0 | 78 | 340 | 31 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 6.0 | 18.4 | 18.4 |
| Effective Green, g (s) | | 6.0 | 18.4 | 18.4 |
| Actuated g/C Ratio | | 0.06 | 0.17 | 0.17 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 99 | 608 | 272 |
| v/s Ratio Prot | | c0.04 | c0.10 | |
| v/s Ratio Perm | | | | 0.02 |
| v/c Ratio | | 0.79 | 0.56 | 0.11 |
| Uniform Delay, d1 | | 49.4 | 40.1 | 36.9 |
| Progression Factor | | 1.02 | 1.02 | 1.06 |
| Incremental Delay, d2 | | 32.8 | 1.1 | 0.2 |
| Delay (s) | | 83.1 | 41.8 | 39.4 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 46.5 | |
| Approach LOS | | | D | |

Intersection Summary

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.9 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 3 | 61 | 26 | 130 | 209 | 5 |
| Future Vol, veh/h | 3 | 61 | 26 | 130 | 209 | 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 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 74 | 74 | 74 | 74 | 74 | 74 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 4 | 82 | 35 | 176 | 282 | 7 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 444 | 145 | 289 | 0 | - | 0 |
| Stage 1 | 286 | - | - | - | - | - |
| Stage 2 | 158 | - | - | - | - | - |
| 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 | 540 | 873 | 1263 | - | - | - |
| Stage 1 | 734 | - | - | - | - | - |
| Stage 2 | 851 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 523 | 873 | 1263 | - | - | - |
| Mov Cap-2 Maneuver | 523 | - | - | - | - | - |
| Stage 1 | 711 | - | - | - | - | - |
| Stage 2 | 851 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.7 | 1.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1263 | - | 846 | - | - |
| HCM Lane V/C Ratio | 0.028 | - | 0.102 | - | - |
| HCM Control Delay (s) | 7.9 | 0.1 | 9.7 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 66 | 226 | 0 | 1 | 349 | 80 | 1 | 0 | 1 | 64 | 1 | 134 |
| Future Vol, veh/h | 66 | 226 | 0 | 1 | 349 | 80 | 1 | 0 | 1 | 64 | 1 | 134 |
| 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 | 85 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 78 | 266 | 0 | 1 | 411 | 94 | 1 | 0 | 1 | 75 | 1 | 158 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 505 | 0 | 0 | 266 | 0 | 0 | 962 | 929 | 266 | 883 | 882 | 458 |
| Stage 1 | - | - | - | - | - | - | 422 | 422 | - | 460 | 460 | - |
| Stage 2 | - | - | - | - | - | - | 540 | 507 | - | 423 | 422 | - |
| 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 | 1055 | - | - | 1292 | - | - | 234 | 267 | 770 | 265 | 284 | 601 |
| Stage 1 | - | - | - | - | - | - | 607 | 587 | - | 579 | 564 | - |
| Stage 2 | - | - | - | - | - | - | 524 | 538 | - | 607 | 587 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1055 | - | - | 1292 | - | - | 162 | 247 | 770 | 249 | 263 | 601 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 162 | 247 | - | 249 | 263 | - |
| Stage 1 | - | - | - | - | - | - | 562 | 544 | - | 536 | 563 | - |
| Stage 2 | - | - | - | - | - | - | 385 | 537 | - | 561 | 544 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 2 | 0 | 18.6 | 24.7 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 268 | 1055 | - | - | 1292 | - | - | 411 |
| HCM Lane V/C Ratio | 0.009 | 0.074 | - | - | 0.001 | - | - | 0.57 |
| HCM Control Delay (s) | 18.6 | 8.7 | - | - | 7.8 | 0 | - | 24.7 |
| HCM Lane LOS | C | A | - | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 0 | 0.2 | - | - | 0 | - | - | 3.4 |

| Intersection | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Int Delay, s/veh | 3.4 | | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 4 | 25 | 26 | 3 | 8 | 25 | 30 | 801 | 32 | 11 | 667 | 41 |
| Future Vol, veh/h | 27 | 4 | 25 | 26 | 3 | 8 | 25 | 30 | 801 | 32 | 11 | 667 | 41 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 29 | 4 | 27 | 28 | 3 | 9 | 27 | 33 | 871 | 35 | 12 | 725 | 45 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1330 | 1807 | 388 | 1410 | 1812 | 463 | 770 | 770 | 0 | 0 | 915 | 0 | 0 |
| Stage 1 | 772 | 772 | - | 1018 | 1018 | - | - | - | - | - | - | - | - |
| Stage 2 | 558 | 1035 | - | 392 | 794 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 112 | 77 | 608 | 97 | 77 | 543 | 463 | 834 | - | - | 735 | - | - |
| Stage 1 | 356 | 405 | - | 252 | 311 | - | - | - | - | - | - | - | - |
| Stage 2 | 479 | 305 | - | 601 | 396 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 97 | 68 | 606 | 79 | 68 | 538 | 596 | 596 | - | - | 729 | - | - |
| Mov Cap-2 Maneuver | 97 | 68 | - | 79 | 68 | - | - | - | - | - | - | - | - |
| Stage 1 | 320 | 399 | - | 225 | 277 | - | - | - | - | - | - | - | - |
| Stage 2 | 418 | 272 | - | 557 | 390 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 45.3 | 68.2 | 0.7 | 0.2 |
| HCM LOS | E | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 596 | - | - | 148 | 95 | 729 | - | - |
| HCM Lane V/C Ratio | 0.1 | - | - | 0.411 | 0.423 | 0.016 | - | - |
| HCM Control Delay (s) | 11.7 | - | - | 45.3 | 68.2 | 10 | - | - |
| HCM Lane LOS | B | - | - | E | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 1.8 | 1.8 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 52 | 573 | 60 | 40 | 343 |
| Future Vol, veh/h | 25 | 52 | 573 | 60 | 40 | 343 |
| 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 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 26 | 55 | 603 | 63 | 42 | 361 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 900 | 333 | 0 | 0 | 666 | 0 |
| Stage 1 | 635 | - | - | - | - | - |
| Stage 2 | 265 | - | - | - | - | - |
| 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 | 276 | 660 | - | - | 913 | - |
| Stage 1 | 487 | - | - | - | - | - |
| Stage 2 | 752 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 260 | 660 | - | - | 913 | - |
| Mov Cap-2 Maneuver | 260 | - | - | - | - | - |
| Stage 1 | 459 | - | - | - | - | - |
| Stage 2 | 752 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 15 | 0 | 1.1 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 440 | 913 | - |
| HCM Lane V/C Ratio | - | - | 0.184 | 0.046 | - |
| HCM Control Delay (s) | - | - | 15 | 9.1 | 0.2 |
| HCM Lane LOS | - | - | C | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.1 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 238 | 917 | 53 | 60 | 21 | 702 | 113 | 117 | 253 | 69 | 169 |
| Future Volume (vph) | 2 | 238 | 917 | 53 | 60 | 21 | 702 | 113 | 117 | 253 | 69 | 169 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.99 | | | 1.00 | 0.98 | | 1.00 | 0.97 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3476 | | | 1752 | 3432 | | 1752 | 3392 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.56 | 1.00 | | 0.46 |
| Satd. Flow (perm) | | 1752 | 3476 | | | 1752 | 3432 | | 1028 | 3392 | | 845 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 2 | 256 | 986 | 57 | 65 | 23 | 755 | 122 | 126 | 272 | 74 | 182 |
| RTOR Reduction (vph) | 0 | 0 | 3 | 0 | 0 | 0 | 10 | 0 | 0 | 26 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 258 | 1040 | 0 | 0 | 88 | 867 | 0 | 126 | 320 | 0 | 182 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 19.3 | 53.8 | | | 11.4 | 45.9 | | 26.0 | 26.0 | | 26.0 |
| Effective Green, g (s) | | 19.3 | 53.8 | | | 11.4 | 45.9 | | 26.0 | 26.0 | | 26.0 |
| Actuated g/C Ratio | | 0.18 | 0.51 | | | 0.11 | 0.43 | | 0.25 | 0.25 | | 0.25 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 318 | 1764 | | | 188 | 1486 | | 252 | 832 | | 207 |
| v/s Ratio Prot | | c0.15 | 0.30 | | | 0.05 | c0.25 | | | 0.09 | | |
| v/s Ratio Perm | | | | | | | | | 0.12 | | | c0.22 |
| v/c Ratio | | 0.81 | 0.59 | | | 0.47 | 0.58 | | 0.50 | 0.38 | | 0.88 |
| Uniform Delay, d1 | | 41.6 | 18.3 | | | 44.5 | 22.8 | | 34.4 | 33.3 | | 38.5 |
| Progression Factor | | 1.00 | 1.00 | | | 0.58 | 0.43 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 14.5 | 1.5 | | | 1.7 | 1.6 | | 1.6 | 0.3 | | 31.7 |
| Delay (s) | | 56.1 | 19.8 | | | 27.6 | 11.4 | | 36.0 | 33.6 | | 70.2 |
| Level of Service | | E | B | | | C | B | | D | C | | E |
| Approach Delay (s) | | | 27.0 | | | | 12.9 | | | 34.3 | | |
| Approach LOS | | | C | | | | B | | | C | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 26.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 106.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 71.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 71 | 167 |
| Future Volume (vph) | 71 | 167 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.89 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3107 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3107 | |
| Peak-hour factor, PHF | 0.93 | 0.93 |
| Adj. Flow (vph) | 76 | 180 |
| RTOR Reduction (vph) | 136 | 0 |
| Lane Group Flow (vph) | 120 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 26.0 | |
| Effective Green, g (s) | 26.0 | |
| Actuated g/C Ratio | 0.25 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 762 | |
| v/s Ratio Prot | 0.04 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.16 | |
| Uniform Delay, d1 | 31.4 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.1 | |
| Delay (s) | 31.5 | |
| Level of Service | C | |
| Approach Delay (s) | 47.6 | |
| Approach LOS | D | |

Intersection Summary

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 0.2 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑↑ | ↑↱ | | | ↱ |
| Traffic Vol, veh/h | 0 | 1235 | 846 | 26 | 0 | 42 |
| Future Vol, veh/h | 0 | 1235 | 846 | 26 | 0 | 42 |
| 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 | 1342 | 920 | 28 | 0 | 46 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 474 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 534 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 534 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 12.4 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 534 |
| HCM Lane V/C Ratio | - | - | - | 0.085 |
| HCM Control Delay (s) | - | - | - | 12.4 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 38 | 1197 | 807 | 50 | 0 | 72 |
| Future Vol, veh/h | 38 | 1197 | 807 | 50 | 0 | 72 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | - | - | - | - | 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 | 41 | 1301 | 877 | 54 | 0 | 78 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 931 | 0 | - | 0 | - | 466 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.16 | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.23 | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 724 | - | - | - | 0 | 541 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 724 | - | - | - | - | 541 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0 | 12.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 724 | - | - | - | 541 |
| HCM Lane V/C Ratio | 0.057 | - | - | - | 0.145 |
| HCM Control Delay (s) | 10.3 | - | - | - | 12.8 |
| HCM Lane LOS | B | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - | 0.5 |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 0.1 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1197 | 832 | 8 | 0 | 25 |
| Future Vol, veh/h | 0 | 1197 | 832 | 8 | 0 | 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 | 0 | 1301 | 904 | 9 | 0 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 457 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 548 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 548 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 11.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 548 |
| HCM Lane V/C Ratio | - | - | - | 0.05 |
| HCM Control Delay (s) | - | - | - | 11.9 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.2 |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 174 | 906 | 148 | 2 | 86 | 492 | 51 | 9 | 200 | 512 | 122 |
| Future Volume (vph) | 6 | 174 | 906 | 148 | 2 | 86 | 492 | 51 | 9 | 200 | 512 | 122 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 1.00 | 0.98 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.97 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3424 | | | 1752 | 3505 | 1546 | | 1752 | 3404 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3424 | | | 1752 | 3505 | 1546 | | 1752 | 3404 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 6 | 181 | 944 | 154 | 2 | 90 | 512 | 53 | 9 | 208 | 533 | 127 |
| RTOR Reduction (vph) | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 22 | 0 |
| Lane Group Flow (vph) | 0 | 187 | 1087 | 0 | 0 | 92 | 513 | 16 | 0 | 217 | 638 | 0 |
| Confl. Peds. (#/hr) | | | | 2 | | | | 2 | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 19.7 | 45.3 | | | 6.4 | 31.7 | 31.7 | | 18.1 | 28.1 | |
| Effective Green, g (s) | | 19.7 | 45.3 | | | 6.4 | 31.7 | 31.7 | | 18.1 | 28.1 | |
| Actuated g/C Ratio | | 0.19 | 0.43 | | | 0.06 | 0.30 | 0.30 | | 0.17 | 0.27 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 325 | 1463 | | | 105 | 1048 | 462 | | 299 | 902 | |
| v/s Ratio Prot | | 0.11 | c0.32 | | | c0.05 | 0.15 | | | 0.12 | c0.19 | |
| v/s Ratio Perm | | | | | | | | 0.01 | | | | |
| v/c Ratio | | 0.58 | 0.74 | | | 0.88 | 0.49 | 0.03 | | 0.73 | 0.71 | |
| Uniform Delay, d1 | | 39.3 | 25.5 | | | 49.4 | 30.5 | 26.3 | | 41.6 | 35.2 | |
| Progression Factor | | 0.84 | 0.81 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 2.1 | 2.9 | | | 50.4 | 1.6 | 0.1 | | 8.5 | 2.6 | |
| Delay (s) | | 35.0 | 23.6 | | | 99.8 | 32.1 | 26.4 | | 50.1 | 37.8 | |
| Level of Service | | D | C | | | F | C | C | | D | D | |
| Approach Delay (s) | | | 25.3 | | | | 41.1 | | | | 40.8 | |
| Approach LOS | | | C | | | | D | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 36.1 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.75 | | |
| Actuated Cycle Length (s) | 106.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 75.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 11 | 75 | 264 | 122 |
| Future Volume (vph) | 11 | 75 | 264 | 122 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | 0.99 |
| Flpb, ped/bikes | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1545 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1545 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 11 | 78 | 275 | 127 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 107 |
| Lane Group Flow (vph) | 0 | 89 | 275 | 20 |
| Confl. Peds. (#/hr) | | | | 3 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 6.8 | 16.8 | 16.8 |
| Effective Green, g (s) | | 6.8 | 16.8 | 16.8 |
| Actuated g/C Ratio | | 0.06 | 0.16 | 0.16 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 112 | 555 | 244 |
| v/s Ratio Prot | | c0.05 | 0.08 | |
| v/s Ratio Perm | | | | 0.01 |
| v/c Ratio | | 0.79 | 0.50 | 0.08 |
| Uniform Delay, d1 | | 48.9 | 40.7 | 38.0 |
| Progression Factor | | 1.01 | 1.02 | 1.14 |
| Incremental Delay, d2 | | 31.0 | 0.7 | 0.1 |
| Delay (s) | | 80.6 | 42.1 | 43.4 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 49.4 | |
| Approach LOS | | | D | |

| Intersection Summary |
|---|

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 1.8 | | | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 3 | 31 | 60 | 295 | 85 | 1 |
| Future Vol, veh/h | 3 | 31 | 60 | 295 | 85 | 1 |
| 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 | 69 | 69 | 69 | 69 | 69 | 69 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 4 | 45 | 87 | 428 | 123 | 1 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 512 | 62 | 124 | 0 | - | 0 |
| Stage 1 | 124 | - | - | - | - | - |
| Stage 2 | 388 | - | - | - | - | - |
| 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 | 489 | 987 | 1453 | - | - | - |
| Stage 1 | 885 | - | - | - | - | - |
| Stage 2 | 652 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 450 | 987 | 1453 | - | - | - |
| Mov Cap-2 Maneuver | 450 | - | - | - | - | - |
| Stage 1 | 815 | - | - | - | - | - |
| Stage 2 | 652 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.3 | 1.5 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1453 | - | 893 | - | - |
| HCM Lane V/C Ratio | 0.06 | - | 0.055 | - | - |
| HCM Control Delay (s) | 7.6 | 0.2 | 9.3 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 18.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 163 | 376 | 2 | 1 | 298 | 75 | 0 | 4 | 2 | 87 | 1 | 147 |
| Future Vol, veh/h | 163 | 376 | 2 | 1 | 298 | 75 | 0 | 4 | 2 | 87 | 1 | 147 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 92 | 88 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 185 | 427 | 2 | 1 | 339 | 85 | 0 | 5 | 2 | 99 | 1 | 167 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 425 | 0 | 0 | 429 | 0 | 0 | 1266 | 1225 | 428 | 1187 | 1184 | 383 |
| Stage 1 | - | - | - | - | - | - | 798 | 798 | - | 385 | 385 | - |
| Stage 2 | - | - | - | - | - | - | 468 | 427 | - | 802 | 799 | - |
| 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 | 1129 | - | - | 1125 | - | - | 145 | 178 | 625 | 165 | 188 | 662 |
| Stage 1 | - | - | - | - | - | - | 378 | 397 | - | 636 | 609 | - |
| Stage 2 | - | - | - | - | - | - | 574 | 584 | - | 376 | 396 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1128 | - | - | 1125 | - | - | 94 | 148 | 625 | 140 | 157 | 661 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 94 | 148 | - | 140 | 157 | - |
| Stage 1 | - | - | - | - | - | - | 316 | 332 | - | 531 | 608 | - |
| Stage 2 | - | - | - | - | - | - | 428 | 583 | - | 309 | 331 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 2.7 | 0 | 23.8 | 86.4 |
| HCM LOS | | | C | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 198 | 1128 | - | - | 1125 | - | - | 276 |
| HCM Lane V/C Ratio | 0.034 | 0.164 | - | - | 0.001 | - | - | 0.967 |
| HCM Control Delay (s) | 23.8 | 8.8 | - | - | 8.2 | 0 | - | 86.4 |
| HCM Lane LOS | C | A | - | - | A | A | - | F |
| HCM 95th %tile Q(veh) | 0.1 | 0.6 | - | - | 0 | - | - | 9.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 49 | 0 | 0 | 40 | 60 | 41 | 625 | 28 | 4 | 611 | 87 |
| Future Vol, veh/h | 0 | 0 | 49 | 0 | 0 | 40 | 60 | 41 | 625 | 28 | 4 | 611 | 87 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 | 77 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 64 | 0 | 0 | 52 | 78 | 53 | 812 | 36 | 5 | 794 | 113 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1529 | 1971 | 454 | 1499 | 2009 | 424 | 906 | 907 | 0 | 0 | 848 | 0 | 0 |
| Stage 1 | 861 | 861 | - | 1092 | 1092 | - | - | - | - | - | - | - | - |
| Stage 2 | 668 | 1110 | - | 407 | 917 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 79 | 61 | 550 | 84 | 58 | 576 | 379 | 740 | - | - | 779 | - | - |
| Stage 1 | 315 | 368 | - | 227 | 287 | - | - | - | - | - | - | - | - |
| Stage 2 | 412 | 281 | - | 589 | 347 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 55 | 43 | 550 | 57 | 41 | 576 | 440 | 440 | - | - | 779 | - | - |
| Mov Cap-2 Maneuver | 55 | 43 | - | 57 | 41 | - | - | - | - | - | - | - | - |
| Stage 1 | 221 | 366 | - | 160 | 202 | - | - | - | - | - | - | - | - |
| Stage 2 | 263 | 198 | - | 518 | 345 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 12.4 | 11.9 | 2.2 | 0.1 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 440 | - | - | 550 | 576 | 779 | - | - |
| HCM Lane V/C Ratio | 0.298 | - | - | 0.116 | 0.09 | 0.007 | - | - |
| HCM Control Delay (s) | 16.6 | - | - | 12.4 | 11.9 | 9.7 | - | - |
| HCM Lane LOS | C | - | - | B | B | A | - | - |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 0.4 | 0.3 | 0 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 66 | 226 | 0 | 1 | 349 | 80 | 1 | 0 | 1 | 64 | 1 | 134 |
| Future Volume (veh/h) | 66 | 226 | 0 | 1 | 349 | 80 | 1 | 0 | 1 | 64 | 1 | 134 |
| 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 | 78 | 266 | 0 | 1 | 411 | 94 | 1 | 0 | 1 | 75 | 1 | 158 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cap, veh/h | 680 | 1297 | 0 | 2 | 445 | 102 | 2 | 0 | 2 | 218 | 1 | 193 |
| Arrive On Green | 0.38 | 0.70 | 0.00 | 0.00 | 0.30 | 0.30 | 0.00 | 0.00 | 0.00 | 0.12 | 0.12 | 0.12 |
| Sat Flow, veh/h | 1767 | 1856 | 0 | 1767 | 1461 | 334 | 832 | 0 | 832 | 1767 | 10 | 1564 |
| Grp Volume(v), veh/h | 78 | 266 | 0 | 1 | 0 | 505 | 2 | 0 | 0 | 75 | 0 | 159 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1856 | 0 | 1767 | 0 | 1795 | 1664 | 0 | 0 | 1767 | 0 | 1574 |
| Q Serve(g_s), s | 3.0 | 5.3 | 0.0 | 0.1 | 0.0 | 28.8 | 0.1 | 0.0 | 0.0 | 4.1 | 0.0 | 10.4 |
| Cycle Q Clear(g_c), s | 3.0 | 5.3 | 0.0 | 0.1 | 0.0 | 28.8 | 0.1 | 0.0 | 0.0 | 4.1 | 0.0 | 10.4 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.19 | 0.50 | | 0.50 | 1.00 | | 0.99 |
| Lane Grp Cap(c), veh/h | 680 | 1297 | 0 | 2 | 0 | 547 | 4 | 0 | 0 | 218 | 0 | 194 |
| V/C Ratio(X) | 0.11 | 0.21 | 0.00 | 0.41 | 0.00 | 0.92 | 0.45 | 0.00 | 0.00 | 0.34 | 0.00 | 0.82 |
| Avail Cap(c_a), veh/h | 680 | 1297 | 0 | 83 | 0 | 622 | 345 | 0 | 0 | 352 | 0 | 313 |
| 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 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.0 | 5.6 | 0.0 | 52.9 | 0.0 | 35.6 | 52.8 | 0.0 | 0.0 | 42.5 | 0.0 | 45.3 |
| Incr Delay (d2), s/veh | 0.1 | 0.4 | 0.0 | 85.6 | 0.0 | 23.4 | 56.7 | 0.0 | 0.0 | 0.9 | 0.0 | 8.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 1.8 | 0.0 | 0.1 | 0.0 | 15.4 | 0.1 | 0.0 | 0.0 | 1.8 | 0.0 | 4.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 21.0 | 6.0 | 0.0 | 138.5 | 0.0 | 59.1 | 109.5 | 0.0 | 0.0 | 43.4 | 0.0 | 53.9 |
| LnGrp LOS | C | A | A | F | A | E | F | A | A | D | A | D |
| Approach Vol, veh/h | | 344 | | | 506 | | | 2 | | | 234 | |
| Approach Delay, s/veh | | 9.4 | | | 59.2 | | | 109.5 | | | 50.5 | |
| Approach LOS | | A | | | E | | | F | | | D | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 4.3 | 4.3 | 79.4 | | 18.0 | 46.1 | 37.6 | | | | |
| Change Period (Y+Rc), s | | 4.0 | * 4.2 | 5.3 | | 4.9 | 5.3 | * 5.3 | | | | |
| Max Green Setting (Gmax), s | | 22.0 | * 5 | 39.5 | | 21.1 | 7.8 | * 37 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.1 | 2.1 | 7.3 | | 12.4 | 5.0 | 30.8 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 1.4 | | 0.7 | 0.0 | 1.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 41.7 | | | | | | | | | |
| HCM 6th LOS | | | D | | | | | | | | | |
| Notes | | | | | | | | | | | | |

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 41 | 0 | 0 | 22 | 25 | 30 | 828 | 36 | 11 | 693 | 44 |
| Future Vol, veh/h | 0 | 0 | 41 | 0 | 0 | 22 | 25 | 30 | 828 | 36 | 11 | 693 | 44 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 45 | 0 | 0 | 24 | 27 | 33 | 900 | 39 | 12 | 753 | 48 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1372 | 1869 | 404 | 1453 | 1874 | 480 | 801 | 801 | 0 | 0 | 948 | 0 | 0 |
| Stage 1 | 801 | 801 | - | 1049 | 1049 | - | - | - | - | - | - | - | - |
| Stage 2 | 571 | 1068 | - | 404 | 825 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 104 | 71 | 593 | 90 | 70 | 529 | 442 | 812 | - | - | 714 | - | - |
| Stage 1 | 342 | 393 | - | 241 | 300 | - | - | - | - | - | - | - | - |
| Stage 2 | 471 | 294 | - | 592 | 383 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 90 | 62 | 591 | 75 | 61 | 524 | 563 | 563 | - | - | 708 | - | - |
| Mov Cap-2 Maneuver | 90 | 62 | - | 75 | 61 | - | - | - | - | - | - | - | - |
| Stage 1 | 305 | 386 | - | 214 | 266 | - | - | - | - | - | - | - | - |
| Stage 2 | 401 | 260 | - | 537 | 376 | - | - | - | - | - | - | - | - |

| Approach | EB | | | WB | | | NB | | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM Control Delay, s | 11.6 | | | 12.2 | | | 0.7 | | | | 0.1 | | |
| HCM LOS | B | | | B | | | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 563 | - | - | 591 | 524 | 708 | - | - |
| HCM Lane V/C Ratio | 0.106 | - | - | 0.075 | 0.046 | 0.017 | - | - |
| HCM Control Delay (s) | 12.2 | - | - | 11.6 | 12.2 | 10.2 | - | - |
| HCM Lane LOS | B | - | - | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | - | 0.2 | 0.1 | 0.1 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 163 | 376 | 2 | 1 | 298 | 75 | 0 | 4 | 2 | 87 | 1 | 147 |
| Future Volume (veh/h) | 163 | 376 | 2 | 1 | 298 | 75 | 0 | 4 | 2 | 87 | 1 | 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 | 185 | 427 | 2 | 1 | 339 | 85 | 0 | 5 | 2 | 99 | 1 | 167 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.92 | 0.88 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cap, veh/h | 232 | 561 | 3 | 240 | 442 | 111 | 0 | 12 | 5 | 282 | 1 | 249 |
| Arrive On Green | 0.13 | 0.30 | 0.30 | 0.14 | 0.31 | 0.31 | 0.00 | 0.01 | 0.01 | 0.16 | 0.16 | 0.16 |
| Sat Flow, veh/h | 1767 | 1845 | 9 | 1767 | 1432 | 359 | 0 | 1261 | 504 | 1767 | 9 | 1565 |
| Grp Volume(v), veh/h | 185 | 0 | 429 | 1 | 0 | 424 | 0 | 0 | 7 | 99 | 0 | 168 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 0 | 1854 | 1767 | 0 | 1791 | 0 | 0 | 1765 | 1767 | 0 | 1574 |
| Q Serve(g_s), s | 4.8 | 0.0 | 9.8 | 0.0 | 0.0 | 10.1 | 0.0 | 0.0 | 0.2 | 2.3 | 0.0 | 4.7 |
| Cycle Q Clear(g_c), s | 4.8 | 0.0 | 9.8 | 0.0 | 0.0 | 10.1 | 0.0 | 0.0 | 0.2 | 2.3 | 0.0 | 4.7 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 0.20 | 0.00 | | 0.29 | 1.00 | | 0.99 |
| Lane Grp Cap(c), veh/h | 232 | 0 | 564 | 240 | 0 | 552 | 0 | 0 | 16 | 282 | 0 | 251 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.76 | 0.00 | 0.00 | 0.77 | 0.00 | 0.00 | 0.43 | 0.35 | 0.00 | 0.67 |
| Avail Cap(c_a), veh/h | 256 | 0 | 1326 | 240 | 0 | 1212 | 0 | 0 | 826 | 790 | 0 | 703 |
| 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 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.8 | 0.0 | 14.8 | 17.6 | 0.0 | 14.7 | 0.0 | 0.0 | 23.2 | 17.6 | 0.0 | 18.6 |
| Incr Delay (d2), s/veh | 14.9 | 0.0 | 2.2 | 0.0 | 0.0 | 2.3 | 0.0 | 0.0 | 16.6 | 0.7 | 0.0 | 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 | 2.6 | 0.0 | 3.4 | 0.0 | 0.0 | 3.4 | 0.0 | 0.0 | 0.1 | 0.9 | 0.0 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 34.7 | 0.0 | 17.0 | 17.6 | 0.0 | 17.0 | 0.0 | 0.0 | 39.8 | 18.3 | 0.0 | 21.7 |
| LnGrp LOS | C | A | B | B | A | B | A | A | D | B | A | C |
| Approach Vol, veh/h | | 614 | | | 425 | | | 7 | | | 267 | |
| Approach Delay, s/veh | | 22.3 | | | 17.0 | | | 39.8 | | | 20.4 | |
| Approach LOS | | C | | | B | | | D | | | C | |
| Timer - Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 4.4 | 10.6 | 19.6 | | 12.4 | 10.4 | 19.8 | | | | |
| Change Period (Y+Rc), s | | 4.0 | 4.2 | * 5.3 | | 4.9 | 4.2 | * 5.3 | | | | |
| Max Green Setting (Gmax), s | | 22.0 | 5.0 | * 34 | | 21.0 | 6.8 | * 32 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.2 | 2.0 | 11.8 | | 6.7 | 6.8 | 12.1 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 2.3 | | 1.0 | 0.0 | 2.3 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 20.3 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |
| Notes | | | | | | | | | | | | |

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | LTR | LTR | UL | L | TR |
| Maximum Queue (ft) | 53 | 56 | 63 | 28 | 20 |
| Average Queue (ft) | 26 | 22 | 25 | 1 | 1 |
| 95th Queue (ft) | 45 | 51 | 50 | 9 | 7 |
| Link Distance (ft) | 2579 | 214 | | | 3870 |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | | | 150 | 150 | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 79 | 52 |
| Average Queue (ft) | 46 | 7 |
| 95th Queue (ft) | 74 | 32 |
| Link Distance (ft) | 1388 | 1244 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | TR | L | T | TR | L | T | TR |
| Maximum Queue (ft) | 155 | 248 | 242 | 277 | 308 | 338 | 137 | 92 | 113 | 230 | 192 | 264 |
| Average Queue (ft) | 81 | 135 | 152 | 103 | 173 | 183 | 60 | 39 | 46 | 131 | 62 | 122 |
| 95th Queue (ft) | 138 | 232 | 247 | 202 | 288 | 299 | 111 | 77 | 95 | 207 | 129 | 200 |
| Link Distance (ft) | | 956 | 956 | | 279 | 279 | | 2467 | 2467 | | 1270 | 1270 |
| Upstream Blk Time (%) | | | | 0 | 1 | 2 | | | | | | |
| Queuing Penalty (veh) | | | | 0 | 6 | 11 | | | | | | |
| Storage Bay Dist (ft) | 180 | | | 180 | | | 180 | | | 180 | | |
| Storage Blk Time (%) | | 2 | | | 9 | | | | | 4 | 0 | |
| Queuing Penalty (veh) | | 3 | | | 12 | | | | | 3 | 0 | |

## Intersection: 4: Jensen Avenue & Project Driveway 1

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 111 |
| Average Queue (ft) | 43 |
| 95th Queue (ft) | 77 |
| Link Distance (ft) | 188 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 5: Jensen Avenue & Project Driveway 2

| Movement | EB | WB | WB | SB |
|---|---|---|---|---|
| Directions Served | L | T | TR | R |
| Maximum Queue (ft) | 75 | 38 | 35 | 72 |
| Average Queue (ft) | 26 | 1 | 3 | 33 |
| 95th Queue (ft) | 61 | 13 | 16 | 67 |
| Link Distance (ft) | | 259 | 259 | 336 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 100 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 6: Jensen Avenue & Project Driveway 3

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 31 |
| Average Queue (ft) | 5 |
| 95th Queue (ft) | 24 |
| Link Distance (ft) | 225 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | T | R | UL | T | TR | UL | T |
| Maximum Queue (ft) | 137 | 184 | 247 | 260 | 328 | 340 | 115 | 194 | 149 | 177 | 107 | 130 |
| Average Queue (ft) | 75 | 85 | 115 | 114 | 180 | 174 | 38 | 98 | 71 | 87 | 57 | 76 |
| 95th Queue (ft) | 128 | 160 | 196 | 212 | 277 | 273 | 118 | 173 | 127 | 161 | 99 | 127 |
| Link Distance (ft) | | 1717 | 1717 | | 2520 | 2520 | | | 2564 | 2564 | | 3861 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 140 | | | 75 | 180 | | | 240 | |
| Storage Blk Time (%) | | | | 6 | 13 | 29 | 0 | 0 | | | | |
| Queuing Penalty (veh) | | | | 32 | 21 | 18 | 0 | 1 | | | | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | R |
| Maximum Queue (ft) | 145 | 170 |
| Average Queue (ft) | 82 | 47 |
| 95th Queue (ft) | 129 | 102 |
| Link Distance (ft) | 3861 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 120 |
| Storage Blk Time (%) | 1 | 1 |
| Queuing Penalty (veh) | 2 | 2 |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 63 | 27 |
| Average Queue (ft) | 29 | 1 |
| 95th Queue (ft) | 55 | 9 |
| Link Distance (ft) | 2234 | 1450 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | EB | WB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | L | TR | TR | LTR | L | TR |
| Maximum Queue (ft) | 142 | 74 | 302 | 52 | 116 | 117 |
| Average Queue (ft) | 54 | 26 | 88 | 9 | 49 | 51 |
| 95th Queue (ft) | 107 | 69 | 181 | 33 | 93 | 89 |
| Link Distance (ft) | | 2594 | 2571 | 770 | | 1172 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | 415 | | | | 250 | |
| Storage Blk Time (%) | | | 0 | | | |
| Queuing Penalty (veh) | | | 0 | | | |

## Network Summary

Network wide Queuing Penalty: 110

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | UL | L | T | TR |
| Maximum Queue (ft) | 48 | 54 | 52 | 27 | 30 | 28 |
| Average Queue (ft) | 17 | 15 | 22 | 3 | 2 | 1 |
| 95th Queue (ft) | 39 | 46 | 48 | 15 | 14 | 9 |
| Link Distance (ft) | 2579 | 214 | | | 3870 | 3870 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | | 150 | 150 | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LR | TR | LT |
| Maximum Queue (ft) | 80 | 22 | 91 |
| Average Queue (ft) | 37 | 1 | 21 |
| 95th Queue (ft) | 60 | 7 | 58 |
| Link Distance (ft) | 1388 | 1270 | 1244 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | TR | L | T | TR | L | T | TR |
| Maximum Queue (ft) | 280 | 568 | 538 | 276 | 334 | 338 | 162 | 130 | 175 | 231 | 74 | 135 |
| Average Queue (ft) | 179 | 230 | 216 | 66 | 177 | 197 | 72 | 78 | 91 | 115 | 30 | 66 |
| 95th Queue (ft) | 285 | 411 | 396 | 151 | 297 | 315 | 126 | 121 | 141 | 178 | 68 | 116 |
| Link Distance (ft) | | 956 | 956 | | 277 | 277 | | 2467 | 2467 | | 1270 | 1270 |
| Upstream Blk Time (%) | | | | 0 | 1 | 1 | | | | | | |
| Queuing Penalty (veh) | | | | 0 | 3 | 6 | | | | | | |
| Storage Bay Dist (ft) | 180 | | | 180 | | | 180 | | | 180 | | |
| Storage Blk Time (%) | 10 | 10 | | | 11 | | 0 | | | 2 | | |
| Queuing Penalty (veh) | 45 | 24 | | | 9 | | 0 | | | 1 | | |

## Intersection: 4: Jensen Avenue & Project Driveway 1

| Movement | EB | WB | SB |
|---|---|---|---|
| Directions Served | T | TR | R |
| Maximum Queue (ft) | 49 | 18 | 52 |
| Average Queue (ft) | 2 | 1 | 27 |
| 95th Queue (ft) | 16 | 6 | 46 |
| Link Distance (ft) | 277 | 208 | 172 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 5: Jensen Avenue & Project Driveway 2

| Movement | EB | WB | SB |
|---|---|---|---|
| Directions Served | L | TR | R |
| Maximum Queue (ft) | 79 | 29 | 94 |
| Average Queue (ft) | 14 | 1 | 40 |
| 95th Queue (ft) | 49 | 10 | 76 |
| Link Distance (ft) | | 260 | 340 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 100 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 6: Jensen Avenue & Project Driveway 3

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 55 |
| Average Queue (ft) | 16 |
| 95th Queue (ft) | 44 |
| Link Distance (ft) | 211 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | TR | UL | T | T | R | UL | T | TR | UL | T |
| Maximum Queue (ft) | 232 | 394 | 403 | 179 | 242 | 230 | 115 | 216 | 252 | 261 | 108 | 120 |
| Average Queue (ft) | 124 | 211 | 227 | 93 | 139 | 131 | 39 | 127 | 147 | 162 | 56 | 69 |
| 95th Queue (ft) | 215 | 365 | 390 | 172 | 208 | 213 | 107 | 189 | 216 | 224 | 100 | 108 |
| Link Distance (ft) | | 1717 | 1717 | | 2520 | 2520 | | | 2564 | 2564 | | 3861 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 140 | | | 75 | 180 | | | 240 | |
| Storage Blk Time (%) | 0 | 9 | | 12 | 9 | 32 | 0 | 1 | 3 | | | |
| Queuing Penalty (veh) | 0 | 16 | | 29 | 8 | 16 | 0 | 2 | 6 | | | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | R |
| Maximum Queue (ft) | 118 | 62 |
| Average Queue (ft) | 73 | 27 |
| 95th Queue (ft) | 114 | 52 |
| Link Distance (ft) | 3861 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 120 |
| Storage Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 0 | |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 50 | 53 |
| Average Queue (ft) | 19 | 5 |
| 95th Queue (ft) | 41 | 29 |
| Link Distance (ft) | 2234 | 1450 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | EB | WB | WB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | LTR | L | TR |
| Maximum Queue (ft) | 244 | 117 | 25 | 200 | 51 | 133 | 79 |
| Average Queue (ft) | 79 | 46 | 1 | 90 | 7 | 47 | 44 |
| 95th Queue (ft) | 153 | 101 | 8 | 159 | 31 | 94 | 74 |
| Link Distance (ft) | | 2594 | | 2571 | 753 | | 1172 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | 415 | | 250 | | | 250 | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Network Summary

Network wide Queuing Penalty: 166

# Appendix I: Cumulative Year 2035 No Project Traffic Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 28.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 40 | 3 | 28 | 44 | 3 | 16 | 60 | 43 | 1003 | 25 | 4 | 857 | 98 |
| Future Vol, veh/h | 40 | 3 | 28 | 44 | 3 | 16 | 60 | 43 | 1003 | 25 | 4 | 857 | 98 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 43 | 3 | 30 | 48 | 3 | 17 | 65 | 47 | 1090 | 27 | 4 | 932 | 107 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1765 | 2335 | 520 | 1804 | 2375 | 559 | 1038 | 1039 | 0 | 0 | 1117 | 0 | 0 |
| Stage 1 | 994 | 994 | - | 1328 | 1328 | - | - | - | - | - | - | - | - |
| Stage 2 | 771 | 1341 | - | 476 | 1047 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 53 | 36 | 498 | 49 | 34 | 470 | 311 | 659 | - | - | 615 | - | - |
| Stage 1 | 261 | 319 | - | 162 | 221 | - | - | - | - | - | - | - | - |
| Stage 2 | 357 | 218 | - | 536 | 301 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 35 | 25 | 498 | ~ 32 | 24 | 470 | 382 | 382 | - | - | 615 | - | - |
| Mov Cap-2 Maneuver | ~ 35 | 25 | - | ~ 32 | 24 | - | - | - | - | - | - | - | - |
| Stage 1 | 185 | 317 | - | 115 | 156 | - | - | - | - | - | - | - | - |
| Stage 2 | 238 | 154 | - | 495 | 299 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 396.7 | $ 541.5 | 1.7 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 382 | - | - | 54 | 41 | 615 | - | - |
| HCM Lane V/C Ratio | 0.293 | - | - | 1.429 | 1.67 | 0.007 | - | - |
| HCM Control Delay (s) | 18.3 | - | - | $ 396.7 | $ 541.5 | 10.9 | - | - |
| HCM Lane LOS | C | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 7 | 7.1 | 0 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 1.8 | | | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 63 | 43 | 443 | 19 | 17 | 566 |
| Future Vol, veh/h | 63 | 43 | 443 | 19 | 17 | 566 |
| 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 | 68 | 47 | 482 | 21 | 18 | 615 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 837 | 252 | 0 | 0 | 503 | 0 |
| Stage 1 | 493 | - | - | - | - | - |
| Stage 2 | 344 | - | - | - | - | - |
| 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 | 303 | 745 | - | - | 1051 | - |
| Stage 1 | 576 | - | - | - | - | - |
| Stage 2 | 686 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 295 | 745 | - | - | 1051 | - |
| Mov Cap-2 Maneuver | 295 | - | - | - | - | - |
| Stage 1 | 561 | - | - | - | - | - |
| Stage 2 | 686 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 391 | 1051 | - |
| HCM Lane V/C Ratio | - | - | 0.295 | 0.018 | - |
| HCM Control Delay (s) | - | - | 18 | 8.5 | 0.1 |
| HCM Lane LOS | - | - | C | A | A |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0.1 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 71 | 1174 | 210 | 11 | 94 | 1569 | 216 | 117 | 115 | 17 | 214 |
| Future Volume (vph) | 4 | 71 | 1174 | 210 | 11 | 94 | 1569 | 216 | 117 | 115 | 17 | 214 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.98 | | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3418 | | | 1752 | 3434 | | 1752 | 3433 | | 1751 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.28 | 1.00 | | 0.66 |
| Satd. Flow (perm) | | 1752 | 3418 | | | 1752 | 3434 | | 513 | 3433 | | 1219 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 4 | 77 | 1276 | 228 | 12 | 102 | 1705 | 235 | 127 | 125 | 18 | 233 |
| RTOR Reduction (vph) | 0 | 0 | 11 | 0 | 0 | 0 | 8 | 0 | 0 | 11 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 81 | 1493 | 0 | 0 | 114 | 1932 | 0 | 127 | 132 | 0 | 233 |
| Confl. Peds. (#/hr) | | 5 | | 1 | | 1 | | 5 | 1 | | 1 | 1 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 6.5 | 66.3 | | | 9.4 | 69.2 | | 29.5 | 29.5 | | 29.5 |
| Effective Green, g (s) | | 6.5 | 66.3 | | | 9.4 | 69.2 | | 29.5 | 29.5 | | 29.5 |
| Actuated g/C Ratio | | 0.05 | 0.55 | | | 0.08 | 0.58 | | 0.25 | 0.25 | | 0.25 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 94 | 1888 | | | 137 | 1980 | | 126 | 843 | | 299 |
| v/s Ratio Prot | | 0.05 | c0.44 | | | 0.07 | c0.56 | | | 0.04 | | |
| v/s Ratio Perm | | | | | | | | | c0.25 | | | 0.19 |
| v/c Ratio | | 0.86 | 0.79 | | | 0.83 | 0.98 | | 1.01 | 0.16 | | 0.78 |
| Uniform Delay, d1 | | 56.3 | 21.3 | | | 54.5 | 24.6 | | 45.2 | 35.5 | | 42.2 |
| Progression Factor | | 1.00 | 1.00 | | | 1.44 | 0.27 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 50.9 | 3.5 | | | 17.5 | 9.1 | | 82.3 | 0.1 | | 12.1 |
| Delay (s) | | 107.2 | 24.8 | | | 96.0 | 15.7 | | 127.6 | 35.6 | | 54.3 |
| Level of Service | | F | C | | | F | B | | F | D | | D |
| Approach Delay (s) | | | 29.0 | | | | 20.1 | | | 78.8 | | |
| Approach LOS | | | C | | | | C | | | E | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 30.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 92.9% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 155 | 329 |
| Future Volume (vph) | 155 | 329 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.90 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3119 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3119 | |
| Peak-hour factor, PHF | 0.92 | 0.92 |
| Adj. Flow (vph) | 168 | 358 |
| RTOR Reduction (vph) | 55 | 0 |
| Lane Group Flow (vph) | 471 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 29.5 | |
| Effective Green, g (s) | 29.5 | |
| Actuated g/C Ratio | 0.25 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 766 | |
| v/s Ratio Prot | 0.15 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.61 | |
| Uniform Delay, d1 | 40.2 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 1.5 | |
| Delay (s) | 41.7 | |
| Level of Service | D | |
| Approach Delay (s) | 45.6 | |
| Approach LOS | D | |

| Intersection Summary |
|---|

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 56 | 1010 | 285 | 15 | 189 | 1534 | 147 | 5 | 113 | 349 | 171 |
| Future Volume (vph) | 2 | 56 | 1010 | 285 | 15 | 189 | 1534 | 147 | 5 | 113 | 349 | 171 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frt | | 1.00 | 0.97 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.95 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3389 | | | 1752 | 3505 | 1568 | | 1752 | 3332 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3389 | | | 1752 | 3505 | 1568 | | 1752 | 3332 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 61 | 1098 | 310 | 16 | 205 | 1667 | 160 | 5 | 123 | 379 | 186 |
| RTOR Reduction (vph) | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | 55 | 0 |
| Lane Group Flow (vph) | 0 | 63 | 1389 | 0 | 0 | 221 | 1667 | 85 | 0 | 128 | 510 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 5.0 | 51.4 | | | 11.8 | 57.9 | 57.9 | | 11.5 | 24.5 | |
| Effective Green, g (s) | | 5.0 | 51.4 | | | 11.8 | 57.9 | 57.9 | | 11.5 | 24.5 | |
| Actuated g/C Ratio | | 0.04 | 0.43 | | | 0.10 | 0.48 | 0.48 | | 0.10 | 0.20 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 73 | 1451 | | | 172 | 1691 | 756 | | 167 | 680 | |
| v/s Ratio Prot | | 0.04 | c0.41 | | | c0.13 | c0.48 | | | 0.07 | c0.15 | |
| v/s Ratio Perm | | | | | | | | 0.05 | | | | |
| v/c Ratio | | 0.86 | 0.96 | | | 1.28 | 0.99 | 0.11 | | 0.77 | 0.75 | |
| Uniform Delay, d1 | | 57.2 | 33.2 | | | 54.1 | 30.6 | 17.0 | | 52.9 | 44.9 | |
| Progression Factor | | 0.88 | 0.84 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 44.5 | 11.1 | | | 164.9 | 18.8 | 0.3 | | 18.7 | 4.7 | |
| Delay (s) | | 95.0 | 39.1 | | | 219.0 | 49.4 | 17.3 | | 71.7 | 49.5 | |
| Level of Service | | F | D | | | F | D | B | | E | D | |
| Approach Delay (s) | | | 41.5 | | | | 65.2 | | | | 53.6 | |
| Approach LOS | | | D | | | | E | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 60.5 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.01 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 91.7% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 2 | 216 | 341 | 179 |
| Future Volume (vph) | 2 | 216 | 341 | 179 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1568 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 235 | 371 | 195 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 122 |
| Lane Group Flow (vph) | 0 | 237 | 371 | 73 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 12.9 | 25.9 | 25.9 |
| Effective Green, g (s) | | 12.9 | 25.9 | 25.9 |
| Actuated g/C Ratio | | 0.11 | 0.22 | 0.22 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 188 | 756 | 338 |
| v/s Ratio Prot | | c0.14 | 0.11 | |
| v/s Ratio Perm | | | | 0.05 |
| v/c Ratio | | 1.26 | 0.49 | 0.22 |
| Uniform Delay, d1 | | 53.5 | 41.3 | 38.7 |
| Progression Factor | | 0.99 | 0.99 | 0.97 |
| Incremental Delay, d2 | | 152.8 | 0.5 | 0.3 |
| Delay (s) | | 206.0 | 41.4 | 37.9 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 89.1 | |
| Approach LOS | | | F | |

Intersection Summary

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 2.2 | | | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 92 | 38 | 160 | 277 | 10 |
| Future Vol, veh/h | 5 | 92 | 38 | 160 | 277 | 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 | 5 | 100 | 41 | 174 | 301 | 11 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 476 | 156 | 312 | 0 | - | 0 |
| Stage 1 | 307 | - | - | - | - | - |
| Stage 2 | 169 | - | - | - | - | - |
| 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 | 515 | 859 | 1238 | - | - | - |
| Stage 1 | 717 | - | - | - | - | - |
| Stage 2 | 841 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 496 | 859 | 1238 | - | - | - |
| Mov Cap-2 Maneuver | 496 | - | - | - | - | - |
| Stage 1 | 690 | - | - | - | - | - |
| Stage 2 | 841 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10 | 1.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1238 | - | 828 | - | - |
| HCM Lane V/C Ratio | 0.033 | - | 0.127 | - | - |
| HCM Control Delay (s) | 8 | 0.1 | 10 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.4 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 58.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 96 | 630 | 0 | 1 | 467 | 96 | 1 | 0 | 1 | 105 | 1 | 185 |
| Future Vol, veh/h | 96 | 630 | 0 | 1 | 467 | 96 | 1 | 0 | 1 | 105 | 1 | 185 |
| 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| 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 | 104 | 685 | 0 | 1 | 508 | 104 | 1 | 0 | 1 | 114 | 1 | 201 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 612 | 0 | 0 | 685 | 0 | 0 | 1556 | 1507 | 685 | 1456 | 1455 | 560 |
| Stage 1 | - | - | - | - | - | - | 893 | 893 | - | 562 | 562 | - |
| Stage 2 | - | - | - | - | - | - | 663 | 614 | - | 894 | 893 | - |
| 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 | 962 | - | - | 904 | - | - | 91 | 120 | 446 | ~ 107 | 129 | 526 |
| Stage 1 | - | - | - | - | - | - | 335 | 359 | - | 510 | 508 | - |
| Stage 2 | - | - | - | - | - | - | 449 | 481 | - | 334 | 359 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 962 | - | - | 904 | - | - | 51 | 107 | 446 | ~ 98 | 115 | 526 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 51 | 107 | - | ~ 98 | 115 | - |
| Stage 1 | - | - | - | - | - | - | 299 | 320 | - | 455 | 507 | - |
| Stage 2 | - | - | - | - | - | - | 276 | 480 | - | 297 | 320 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1.2 | 0 | 45.1 | $ 316.3 |
| HCM LOS | | | E | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 92 | 962 | - | - | 904 | - | - | 203 |
| HCM Lane V/C Ratio | 0.024 | 0.108 | - | - | 0.001 | - | - | 1.558 |
| HCM Control Delay (s) | 45.1 | 9.2 | - | - | 9 | 0 | - | $ 316.3 |
| HCM Lane LOS | E | A | - | - | A | A | - | F |
| HCM 95th %tile Q(veh) | 0.1 | 0.4 | - | - | 0 | - | - | 20.1 |

Notes

~: Volume exceeds capacity  $: Delay exceeds 300s  +: Computation Not Defined  *: All major volume in platoon

| Intersection | |
|---|---|
| Int Delay, s/veh | 15.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 4 | 25 | 26 | 3 | 8 | 25 | 30 | 1050 | 32 | 11 | 1080 | 50 |
| Future Vol, veh/h | 27 | 4 | 25 | 26 | 3 | 8 | 25 | 30 | 1050 | 32 | 11 | 1080 | 50 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 29 | 4 | 27 | 28 | 3 | 9 | 27 | 33 | 1141 | 35 | 12 | 1174 | 54 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1918 | 2530 | 617 | 1904 | 2540 | 598 | 1228 | 1228 | 0 | 0 | 1185 | 0 | 0 |
| Stage 1 | 1225 | 1225 | - | 1288 | 1288 | - | - | - | - | - | - | - | - |
| Stage 2 | 693 | 1305 | - | 616 | 1252 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 40 | 27 | 430 | 41 | 26 | 443 | 235 | 558 | - | - | 579 | - | - |
| Stage 1 | 188 | 248 | - | 172 | 231 | - | - | - | - | - | - | - | - |
| Stage 2 | 397 | 226 | - | 442 | 240 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 29 | 21 | 429 | ~ 27 | 21 | 439 | 330 | 330 | - | - | 574 | - | - |
| Mov Cap-2 Maneuver | ~ 29 | 21 | - | ~ 27 | 21 | - | - | - | - | - | - | - | - |
| Stage 1 | 154 | 243 | - | 139 | 187 | - | - | - | - | - | - | - | - |
| Stage 2 | 312 | 183 | - | 397 | 235 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 369.5 | $ 412.8 | 0.9 | 0.1 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 330 | - | - | 47 | 33 | 574 | - | - |
| HCM Lane V/C Ratio | 0.181 | - | - | 1.295 | 1.219 | 0.021 | - | - |
| HCM Control Delay (s) | 18.3 | - | - | $ 369.5 | $ 412.8 | 11.4 | - | - |
| HCM Lane LOS | C | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | - | 5.7 | 4.4 | 0.1 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 1.5 | | | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 52 | 779 | 60 | 40 | 526 |
| Future Vol, veh/h | 25 | 52 | 779 | 60 | 40 | 526 |
| 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 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 26 | 55 | 820 | 63 | 42 | 554 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1213 | 442 | 0 | 0 | 883 | 0 |
| Stage 1 | 852 | - | - | - | - | - |
| Stage 2 | 361 | - | - | - | - | - |
| 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 | 173 | 560 | - | - | 756 | - |
| Stage 1 | 376 | - | - | - | - | - |
| Stage 2 | 673 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 159 | 560 | - | - | 756 | - |
| Mov Cap-2 Maneuver | 159 | - | - | - | - | - |
| Stage 1 | 346 | - | - | - | - | - |
| Stage 2 | 673 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.8 | 0 | 1 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 308 | 756 | - |
| HCM Lane V/C Ratio | - | - | 0.263 | 0.056 | - |
| HCM Control Delay (s) | - | - | 20.8 | 10 | 0.3 |
| HCM Lane LOS | - | - | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 1 | 0.2 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 265 | 1427 | 131 | 2 | 69 | 1296 | 175 | 330 | 332 | 197 | 178 |
| Future Volume (vph) | 2 | 265 | 1427 | 131 | 2 | 69 | 1296 | 175 | 330 | 332 | 197 | 178 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.99 | | | 1.00 | 0.98 | | 1.00 | 0.94 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3461 | | | 1752 | 3442 | | 1752 | 3309 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.43 | 1.00 | | 0.34 |
| Satd. Flow (perm) | | 1752 | 3461 | | | 1752 | 3442 | | 795 | 3309 | | 620 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 2 | 285 | 1534 | 141 | 2 | 74 | 1394 | 188 | 355 | 357 | 212 | 191 |
| RTOR Reduction (vph) | 0 | 0 | 6 | 0 | 0 | 0 | 9 | 0 | 0 | 66 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 287 | 1669 | 0 | 0 | 76 | 1573 | 0 | 355 | 503 | 0 | 191 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 14.8 | 56.1 | | | 5.0 | 46.3 | | 44.1 | 44.1 | | 44.1 |
| Effective Green, g (s) | | 14.8 | 56.1 | | | 5.0 | 46.3 | | 44.1 | 44.1 | | 44.1 |
| Actuated g/C Ratio | | 0.12 | 0.47 | | | 0.04 | 0.39 | | 0.37 | 0.37 | | 0.37 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 216 | 1618 | | | 73 | 1328 | | 292 | 1216 | | 227 |
| v/s Ratio Prot | | c0.16 | 0.48 | | | 0.04 | c0.46 | | | 0.15 | | |
| v/s Ratio Perm | | | | | | | | | c0.45 | | | 0.31 |
| v/c Ratio | | 1.33 | 1.03 | | | 1.04 | 1.18 | | 1.22 | 0.41 | | 0.84 |
| Uniform Delay, d1 | | 52.6 | 31.9 | | | 57.5 | 36.9 | | 37.9 | 28.3 | | 34.7 |
| Progression Factor | | 1.00 | 1.00 | | | 1.02 | 0.54 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 176.2 | 30.9 | | | 95.2 | 88.3 | | 124.2 | 0.2 | | 23.5 |
| Delay (s) | | 228.8 | 62.9 | | | 153.6 | 108.3 | | 162.2 | 28.5 | | 58.3 |
| Level of Service | | F | E | | | F | F | | F | C | | E |
| Approach Delay (s) | | | 87.1 | | | | 110.4 | | | 79.9 | | |
| Approach LOS | | | F | | | | F | | | E | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 87.1 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.22 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 103.8% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 166 | 237 |
| Future Volume (vph) | 166 | 237 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.91 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3171 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3171 | |
| Peak-hour factor, PHF | 0.93 | 0.93 |
| Adj. Flow (vph) | 178 | 255 |
| RTOR Reduction (vph) | 161 | 0 |
| Lane Group Flow (vph) | 272 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 44.1 | |
| Effective Green, g (s) | 44.1 | |
| Actuated g/C Ratio | 0.37 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 1165 | |
| v/s Ratio Prot | 0.09 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.23 | |
| Uniform Delay, d1 | 26.3 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.1 | |
| Delay (s) | 26.4 | |
| Level of Service | C | |
| Approach Delay (s) | 36.1 | |
| Approach LOS | D | |

| Intersection Summary |
|---|

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 179 | 1515 | 159 | 2 | 176 | 1053 | 125 | 9 | 232 | 540 | 160 |
| Future Volume (vph) | 6 | 179 | 1515 | 159 | 2 | 176 | 1053 | 125 | 9 | 232 | 540 | 160 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 1.00 | 0.99 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.97 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3450 | | | 1752 | 3505 | 1546 | | 1752 | 3385 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3450 | | | 1752 | 3505 | 1546 | | 1752 | 3385 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 6 | 186 | 1578 | 166 | 2 | 183 | 1097 | 130 | 9 | 242 | 562 | 167 |
| RTOR Reduction (vph) | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 79 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 0 | 192 | 1738 | 0 | 0 | 185 | 1097 | 51 | 0 | 251 | 705 | 0 |
| Confl. Peds. (#/hr) | | | | 2 | | | | 2 | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 13.6 | 52.4 | | | 8.8 | 47.3 | 47.3 | | 11.8 | 30.6 | |
| Effective Green, g (s) | | 13.6 | 52.4 | | | 8.8 | 47.3 | 47.3 | | 11.8 | 30.6 | |
| Actuated g/C Ratio | | 0.11 | 0.44 | | | 0.07 | 0.39 | 0.39 | | 0.10 | 0.26 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 198 | 1506 | | | 128 | 1381 | 609 | | 172 | 863 | |
| v/s Ratio Prot | | 0.11 | c0.50 | | | c0.11 | 0.31 | | | c0.14 | c0.21 | |
| v/s Ratio Perm | | | | | | | | 0.03 | | | | |
| v/c Ratio | | 0.97 | 1.15 | | | 1.45 | 0.79 | 0.08 | | 1.46 | 0.82 | |
| Uniform Delay, d1 | | 53.0 | 33.8 | | | 55.6 | 32.1 | 22.8 | | 54.1 | 42.1 | |
| Progression Factor | | 1.20 | 0.50 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 28.7 | 72.1 | | | 238.7 | 4.8 | 0.3 | | 235.8 | 6.1 | |
| Delay (s) | | 92.1 | 88.9 | | | 294.3 | 36.8 | 23.0 | | 289.9 | 48.1 | |
| Level of Service | | F | F | | | F | D | C | | F | D | |
| Approach Delay (s) | | | 89.2 | | | | 69.3 | | | | 110.0 | |
| Approach LOS | | | F | | | | E | | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 90.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.17 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 103.1% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 11 | 171 | 378 | 125 |
| Future Volume (vph) | 11 | 171 | 378 | 125 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1544 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1544 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 11 | 178 | 394 | 130 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 100 |
| Lane Group Flow (vph) | 0 | 189 | 394 | 30 |
| Confl. Peds. (#/hr) | | | | 3 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 8.8 | 27.6 | 27.6 |
| Effective Green, g (s) | | 8.8 | 27.6 | 27.6 |
| Actuated g/C Ratio | | 0.07 | 0.23 | 0.23 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 128 | 806 | 355 |
| v/s Ratio Prot | | c0.11 | 0.11 | |
| v/s Ratio Perm | | | | 0.02 |
| v/c Ratio | | 1.48 | 0.49 | 0.08 |
| Uniform Delay, d1 | | 55.6 | 40.1 | 36.3 |
| Progression Factor | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | | 251.6 | 0.5 | 0.1 |
| Delay (s) | | 307.2 | 40.5 | 36.4 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 110.5 | |
| Approach LOS | | | F | |

| Intersection Summary |
|---|

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 64 | 146 | 574 | 243 | 4 |
| Future Vol, veh/h | 6 | 64 | 146 | 574 | 243 | 4 |
| 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 | 7 | 70 | 159 | 624 | 264 | 4 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 896 | 134 | 268 | 0 | - | 0 |
| Stage 1 | 266 | - | - | - | - | - |
| Stage 2 | 630 | - | - | - | - | - |
| 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 | 278 | 887 | 1285 | - | - | - |
| Stage 1 | 751 | - | - | - | - | - |
| Stage 2 | 490 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 225 | 887 | 1285 | - | - | - |
| Mov Cap-2 Maneuver | 225 | - | - | - | - | - |
| Stage 1 | 609 | - | - | - | - | - |
| Stage 2 | 490 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.7 | 2.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1285 | - | 708 | - | - |
| HCM Lane V/C Ratio | 0.123 | - | 0.107 | - | - |
| HCM Control Delay (s) | 8.2 | 0.5 | 10.7 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 0.4 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 849.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 187 | 637 | 2 | 1 | 655 | 286 | 0 | 4 | 2 | 228 | 1 | 313 |
| Future Vol, veh/h | 187 | 637 | 2 | 1 | 655 | 286 | 0 | 4 | 2 | 228 | 1 | 313 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| 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 | 203 | 692 | 2 | 1 | 712 | 311 | 0 | 4 | 2 | 248 | 1 | 340 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1024 | 0 | 0 | 694 | 0 | 0 | 2139 | 2125 | 693 | 1973 | 1971 | 869 |
| Stage 1 | - | - | - | - | - | - | 1099 | 1099 | - | 871 | 871 | - |
| Stage 2 | - | - | - | - | - | - | 1040 | 1026 | - | 1102 | 1100 | - |
| 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 | 674 | - | - | 897 | - | - | 35 | 50 | 442 | ~ 46 | 62 | 350 |
| Stage 1 | - | - | - | - | - | - | 257 | 287 | - | 344 | 367 | - |
| Stage 2 | - | - | - | - | - | - | 277 | 311 | - | 256 | 287 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 673 | - | - | 897 | - | - | 1 | 35 | 442 | ~ 32 | 43 | 350 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 1 | 35 | - | ~ 32 | 43 | - |
| Stage 1 | - | - | - | - | - | - | 179 | 200 | - | ~ 240 | 366 | - |
| Stage 2 | - | - | - | - | - | - | 8 | 310 | - | ~ 174 | 200 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 2.9 | 0 | 85.7 | $ 3625.2 |
| HCM LOS | | | F | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 51 | 673 | - | - | 897 | - | - | 67 |
| HCM Lane V/C Ratio | 0.128 | 0.302 | - | - | 0.001 | - | - | 8.793 |
| HCM Control Delay (s) | 85.7 | 12.6 | - | - | 9 | 0 | | $ 3625.2 |
| HCM Lane LOS | F | B | - | - | A | A | - | F |
| HCM 95th %tile Q(veh) | 0.4 | 1.3 | - | - | 0 | - | - | 68.5 |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 49 | 0 | 0 | 39 | 60 | 43 | 1043 | 28 | 4 | 901 | 101 |
| Future Vol, veh/h | 0 | 0 | 49 | 0 | 0 | 39 | 60 | 43 | 1043 | 28 | 4 | 901 | 101 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 53 | 0 | 0 | 42 | 65 | 47 | 1134 | 30 | 4 | 979 | 110 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 545 | 1871 | 2470 | 582 | 1089 | 1089 | 0 | 0 | 1164 | 0 | 0 |
| Stage 1 | - | - | - | 1373 | 1373 | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 498 | 1097 | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | - | - | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 480 | 44 | 29 | 454 | 289 | 631 | - | - | 590 | - | - |
| Stage 1 | 0 | 0 | - | 152 | 210 | - | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 520 | 285 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 480 | 29 | 19 | 454 | 344 | 344 | - | - | 590 | - | - |
| Mov Cap-2 Maneuver | - | - | - | 29 | 19 | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | 102 | 142 | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | 459 | 283 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 13.4 | 13.7 | 1.8 | 0 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 344 | - | - | 480 | 454 | 590 | - | - |
| HCM Lane V/C Ratio | 0.325 | - | - | 0.111 | 0.093 | 0.007 | - | - |
| HCM Control Delay (s) | 20.5 | - | - | 13.4 | 13.7 | 11.1 | - | - |
| HCM Lane LOS | C | - | - | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 1.4 | - | - | 0.4 | 0.3 | 0 | - | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 71 | 1174 | 210 | 11 | 94 | 1569 | 216 | 117 | 115 | 17 | 214 |
| Future Volume (vph) | 4 | 71 | 1174 | 210 | 11 | 94 | 1569 | 216 | 117 | 115 | 17 | 214 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.91 | | | 1.00 | 0.91 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.98 | | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 4912 | | | 1752 | 4934 | | 1752 | 3433 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.29 | 1.00 | | 0.66 |
| Satd. Flow (perm) | | 1752 | 4912 | | | 1752 | 4934 | | 532 | 3433 | | 1220 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 4 | 77 | 1276 | 228 | 12 | 102 | 1705 | 235 | 127 | 125 | 18 | 233 |
| RTOR Reduction (vph) | 0 | 0 | 19 | 0 | 0 | 0 | 13 | 0 | 0 | 12 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 81 | 1485 | 0 | 0 | 114 | 1927 | 0 | 127 | 131 | 0 | 233 |
| Confl. Peds. (#/hr) | | | | 1 | | | | 5 | | | 1 | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 6.6 | 56.9 | | | 10.9 | 61.2 | | 27.4 | 27.4 | | 27.4 |
| Effective Green, g (s) | | 6.6 | 56.9 | | | 10.9 | 61.2 | | 27.4 | 27.4 | | 27.4 |
| Actuated g/C Ratio | | 0.06 | 0.52 | | | 0.10 | 0.56 | | 0.25 | 0.25 | | 0.25 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 105 | 2540 | | | 173 | 2745 | | 132 | 855 | | 303 |
| v/s Ratio Prot | | c0.05 | 0.30 | | | 0.07 | c0.39 | | | 0.04 | | |
| v/s Ratio Perm | | | | | | | | | c0.24 | | | 0.19 |
| v/c Ratio | | 0.77 | 0.58 | | | 0.66 | 0.70 | | 0.96 | 0.15 | | 0.77 |
| Uniform Delay, d1 | | 51.0 | 18.4 | | | 47.8 | 17.8 | | 40.8 | 32.2 | | 38.4 |
| Progression Factor | | 1.00 | 1.00 | | | 1.31 | 0.27 | | 0.75 | 0.72 | | 1.00 |
| Incremental Delay, d2 | | 28.8 | 1.0 | | | 6.2 | 1.1 | | 65.8 | 0.1 | | 11.1 |
| Delay (s) | | 79.8 | 19.4 | | | 68.7 | 5.9 | | 96.3 | 23.2 | | 49.5 |
| Level of Service | | E | B | | | E | A | | F | C | | D |
| Approach Delay (s) | | | 22.5 | | | | 9.4 | | | 57.6 | | |
| Approach LOS | | | C | | | | A | | | E | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 21.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.78 | | |
| Actuated Cycle Length (s) | 110.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 77.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 155 | 329 |
| Future Volume (vph) | 155 | 329 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.90 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3119 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3119 | |
| Peak-hour factor, PHF | 0.92 | 0.92 |
| Adj. Flow (vph) | 168 | 358 |
| RTOR Reduction (vph) | 103 | 0 |
| Lane Group Flow (vph) | 423 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 27.4 | |
| Effective Green, g (s) | 27.4 | |
| Actuated g/C Ratio | 0.25 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 776 | |
| v/s Ratio Prot | 0.14 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.55 | |
| Uniform Delay, d1 | 35.9 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.8 | |
| Delay (s) | 36.7 | |
| Level of Service | D | |
| Approach Delay (s) | 40.6 | |
| Approach LOS | D | |

| Intersection Summary |
|---|

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 56 | 1010 | 285 | 15 | 189 | 1534 | 147 | 5 | 113 | 349 | 171 |
| Future Volume (vph) | 2 | 56 | 1010 | 285 | 15 | 189 | 1534 | 147 | 5 | 113 | 349 | 171 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.91 | | | 1.00 | 0.91 | | | 1.00 | 0.95 | |
| Frt | | 1.00 | 0.97 | | | 1.00 | 0.99 | | | 1.00 | 0.95 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 4870 | | | 1752 | 4970 | | | 1752 | 3332 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 4870 | | | 1752 | 4970 | | | 1752 | 3332 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 61 | 1098 | 310 | 16 | 205 | 1667 | 160 | 5 | 123 | 379 | 186 |
| RTOR Reduction (vph) | 0 | 0 | 41 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 62 | 0 |
| Lane Group Flow (vph) | 0 | 63 | 1367 | 0 | 0 | 221 | 1818 | 0 | 0 | 128 | 503 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 4.2 | 40.7 | | | 13.9 | 50.1 | | | 16.3 | 23.2 | |
| Effective Green, g (s) | | 4.2 | 40.7 | | | 13.9 | 50.1 | | | 16.3 | 23.2 | |
| Actuated g/C Ratio | | 0.04 | 0.37 | | | 0.13 | 0.46 | | | 0.15 | 0.21 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 66 | 1801 | | | 221 | 2263 | | | 259 | 702 | |
| v/s Ratio Prot | | 0.04 | c0.28 | | | c0.13 | c0.37 | | | 0.07 | c0.15 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.95 | 0.76 | | | 1.00 | 0.80 | | | 0.49 | 0.72 | |
| Uniform Delay, d1 | | 52.8 | 30.4 | | | 48.0 | 25.7 | | | 43.1 | 40.3 | |
| Progression Factor | | 0.99 | 0.70 | | | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 84.6 | 2.5 | | | 60.5 | 3.1 | | | 1.5 | 3.5 | |
| Delay (s) | | 136.7 | 23.9 | | | 108.6 | 28.9 | | | 44.5 | 43.9 | |
| Level of Service | | F | C | | | F | C | | | D | D | |
| Approach Delay (s) | | | 28.7 | | | | 37.5 | | | | 44.0 | |
| Approach LOS | | | C | | | | D | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 42.4 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.87 | | |
| Actuated Cycle Length (s) | 110.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 80.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 2 | 216 | 341 | 179 |
| Future Volume (vph) | 2 | 216 | 341 | 179 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1568 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 235 | 371 | 195 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 148 |
| Lane Group Flow (vph) | 0 | 237 | 371 | 47 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 12.8 | 19.7 | 19.7 |
| Effective Green, g (s) | | 12.8 | 19.7 | 19.7 |
| Actuated g/C Ratio | | 0.12 | 0.18 | 0.18 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 203 | 627 | 280 |
| v/s Ratio Prot | | c0.14 | 0.11 | |
| v/s Ratio Perm | | | | 0.03 |
| v/c Ratio | | 1.17 | 0.59 | 0.17 |
| Uniform Delay, d1 | | 48.6 | 41.5 | 38.2 |
| Progression Factor | | 1.01 | 1.01 | 1.06 |
| Incremental Delay, d2 | | 115.6 | 1.5 | 0.3 |
| Delay (s) | | 164.9 | 43.5 | 41.0 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 78.7 | |
| Approach LOS | | | E | |

| Intersection Summary |
|---|

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 96 | 630 | 0 | 1 | 467 | 96 | 1 | 0 | 1 | 105 | 1 | 185 |
| Future Volume (veh/h) | 96 | 630 | 0 | 1 | 467 | 96 | 1 | 0 | 1 | 105 | 1 | 185 |
| 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 | 104 | 685 | 0 | 1 | 508 | 104 | 1 | 0 | 1 | 114 | 1 | 201 |
| 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 | 671 | 716 | 0 | 521 | 558 | 473 | 2 | 0 | 2 | 264 | 1 | 234 |
| Arrive On Green | 0.38 | 0.39 | 0.00 | 0.29 | 0.30 | 0.30 | 0.00 | 0.00 | 0.00 | 0.15 | 0.15 | 0.15 |
| Sat Flow, veh/h | 1767 | 1856 | 0 | 1767 | 1856 | 1572 | 832 | 0 | 832 | 1767 | 8 | 1566 |
| Grp Volume(v), veh/h | 104 | 685 | 0 | 1 | 508 | 104 | 2 | 0 | 0 | 114 | 0 | 202 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1856 | 0 | 1767 | 1856 | 1572 | 1664 | 0 | 0 | 1767 | 0 | 1574 |
| Q Serve(g_s), s | 4.3 | 39.5 | 0.0 | 0.0 | 29.0 | 5.4 | 0.1 | 0.0 | 0.0 | 6.5 | 0.0 | 13.8 |
| Cycle Q Clear(g_c), s | 4.3 | 39.5 | 0.0 | 0.0 | 29.0 | 5.4 | 0.1 | 0.0 | 0.0 | 6.5 | 0.0 | 13.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 671 | 716 | 0 | 521 | 558 | 473 | 4 | 0 | 0 | 264 | 0 | 235 |
| V/C Ratio(X) | 0.15 | 0.96 | 0.00 | 0.00 | 0.91 | 0.22 | 0.45 | 0.00 | 0.00 | 0.43 | 0.00 | 0.86 |
| Avail Cap(c_a), veh/h | 671 | 735 | 0 | 521 | 658 | 558 | 333 | 0 | 0 | 337 | 0 | 300 |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.5 | 32.9 | 0.0 | 27.4 | 37.0 | 28.8 | 54.8 | 0.0 | 0.0 | 42.5 | 0.0 | 45.6 |
| Incr Delay (d2), s/veh | 0.1 | 24.7 | 0.0 | 0.0 | 21.5 | 1.1 | 56.9 | 0.0 | 0.0 | 1.1 | 0.0 | 17.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 21.4 | 0.0 | 0.0 | 15.8 | 2.1 | 0.1 | 0.0 | 0.0 | 2.8 | 0.0 | 6.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 22.6 | 57.6 | 0.0 | 27.4 | 58.5 | 29.9 | 111.6 | 0.0 | 0.0 | 43.6 | 0.0 | 63.3 |
| LnGrp LOS | C | E | A | C | E | C | F | A | A | D | A | E |
| Approach Vol, veh/h | | 789 | | | 613 | | | 2 | | | 316 | |
| Approach Delay, s/veh | | 53.0 | | | 53.6 | | | 111.6 | | | 56.2 | |
| Approach LOS | | D | | | D | | | F | | | E | |

| Timer - Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 4.3 | 36.6 | 47.7 | | 21.3 | 46.0 | 38.4 | | | | |
| Change Period (Y+Rc), s | | 4.0 | 4.2 | * 5.3 | | 4.9 | 4.2 | * 5.3 | | | | |
| Max Green Setting (Gmax), s | | 22.0 | 5.0 | * 44 | | 21.0 | 9.6 | * 39 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.1 | 2.0 | 41.5 | | 15.8 | 6.3 | 31.0 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 0.9 | | 0.7 | 0.1 | 2.1 | | | | |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 53.9 |
| HCM 6th LOS | | D |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 41 | 0 | 0 | 22 | 25 | 30 | 1077 | 36 | 11 | 1106 | 53 |
| Future Vol, veh/h | 0 | 0 | 41 | 0 | 0 | 22 | 25 | 30 | 1077 | 36 | 11 | 1106 | 53 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 45 | 0 | 0 | 24 | 27 | 33 | 1171 | 39 | 12 | 1202 | 58 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 633 | - | - | 615 | 1260 | 1260 | 0 | 0 | 1219 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 420 | 0 | 0 | 432 | 224 | 542 | - | - | 562 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 419 | - | - | 428 | 307 | 307 | - | - | 557 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.6 | 13.9 | 0.9 | 0.1 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 307 | - | - | 419 | 428 | 557 | - | - |
| HCM Lane V/C Ratio | 0.195 | - | - | 0.106 | 0.056 | 0.021 | - | - |
| HCM Control Delay (s) | 19.5 | - | - | 14.6 | 13.9 | 11.6 | - | - |
| HCM Lane LOS | C | - | - | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | - | 0.4 | 0.2 | 0.1 | - | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 265 | 1427 | 131 | 2 | 69 | 1296 | 175 | 330 | 332 | 197 | 178 |
| Future Volume (vph) | 2 | 265 | 1427 | 131 | 2 | 69 | 1296 | 175 | 330 | 332 | 197 | 178 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.91 | | | 1.00 | 0.91 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.99 | | | 1.00 | 0.98 | | 1.00 | 0.94 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 4972 | | | 1752 | 4946 | | 1752 | 3309 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.44 | 1.00 | | 0.35 |
| Satd. Flow (perm) | | 1752 | 4972 | | | 1752 | 4946 | | 817 | 3309 | | 649 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 2 | 285 | 1534 | 141 | 2 | 74 | 1394 | 188 | 355 | 357 | 212 | 191 |
| RTOR Reduction (vph) | 0 | 0 | 9 | 0 | 0 | 0 | 15 | 0 | 0 | 73 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 287 | 1666 | 0 | 0 | 76 | 1567 | 0 | 355 | 496 | 0 | 191 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 20.3 | 50.0 | | | 7.1 | 36.8 | | 48.1 | 48.1 | | 48.1 |
| Effective Green, g (s) | | 20.3 | 50.0 | | | 7.1 | 36.8 | | 48.1 | 48.1 | | 48.1 |
| Actuated g/C Ratio | | 0.17 | 0.42 | | | 0.06 | 0.31 | | 0.40 | 0.40 | | 0.40 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 296 | 2071 | | | 103 | 1516 | | 327 | 1326 | | 260 |
| v/s Ratio Prot | | c0.16 | 0.34 | | | 0.04 | c0.32 | | | 0.15 | | |
| v/s Ratio Perm | | | | | | | | | c0.43 | | | 0.29 |
| v/c Ratio | | 0.97 | 0.80 | | | 0.74 | 1.03 | | 1.09 | 0.37 | | 0.73 |
| Uniform Delay, d1 | | 49.5 | 30.7 | | | 55.5 | 41.6 | | 36.0 | 25.3 | | 30.5 |
| Progression Factor | | 1.00 | 1.00 | | | 1.03 | 0.60 | | 0.76 | 0.74 | | 1.00 |
| Incremental Delay, d2 | | 43.5 | 3.4 | | | 18.5 | 29.3 | | 74.0 | 0.2 | | 10.3 |
| Delay (s) | | 93.0 | 34.2 | | | 75.4 | 54.3 | | 101.2 | 18.8 | | 40.8 |
| Level of Service | | F | C | | | E | D | | F | B | | D |
| Approach Delay (s) | | | 42.8 | | | | 55.3 | | | 50.5 | | |
| Approach LOS | | | D | | | | E | | | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 46.5 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 1.04 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 91.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 166 | 237 |
| Future Volume (vph) | 166 | 237 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.91 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3171 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3171 | |
| Peak-hour factor, PHF | 0.93 | 0.93 |
| Adj. Flow (vph) | 178 | 255 |
| RTOR Reduction (vph) | 153 | 0 |
| Lane Group Flow (vph) | 280 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 48.1 | |
| Effective Green, g (s) | 48.1 | |
| Actuated g/C Ratio | 0.40 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 1271 | |
| v/s Ratio Prot | 0.09 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.22 | |
| Uniform Delay, d1 | 23.6 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.1 | |
| Delay (s) | 23.7 | |
| Level of Service | C | |
| Approach Delay (s) | 28.9 | |
| Approach LOS | C | |

Intersection Summary

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 179 | 1515 | 159 | 2 | 176 | 1053 | 125 | 9 | 232 | 540 | 160 |
| Future Volume (vph) | 6 | 179 | 1515 | 159 | 2 | 176 | 1053 | 125 | 9 | 232 | 540 | 160 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.91 | | | 1.00 | 0.91 | | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Frt | | 1.00 | 0.99 | | | 1.00 | 0.98 | | | 1.00 | 0.97 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 4957 | | | 1752 | 4948 | | | 1752 | 3385 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 4957 | | | 1752 | 4948 | | | 1752 | 3385 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 6 | 186 | 1578 | 166 | 2 | 183 | 1097 | 130 | 9 | 242 | 562 | 167 |
| RTOR Reduction (vph) | 0 | 0 | 10 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 0 | 192 | 1734 | 0 | 0 | 185 | 1216 | 0 | 0 | 251 | 705 | 0 |
| Confl. Peds. (#/hr) | | | | 2 | | | | 2 | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 15.6 | 44.0 | | | 12.1 | 40.2 | | | 16.6 | 30.5 | |
| Effective Green, g (s) | | 15.6 | 44.0 | | | 12.1 | 40.2 | | | 16.6 | 30.5 | |
| Actuated g/C Ratio | | 0.13 | 0.37 | | | 0.10 | 0.34 | | | 0.14 | 0.25 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 227 | 1817 | | | 176 | 1657 | | | 242 | 860 | |
| v/s Ratio Prot | | 0.11 | c0.35 | | | c0.11 | 0.25 | | | c0.14 | c0.21 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.85 | 0.95 | | | 1.05 | 0.73 | | | 1.04 | 0.82 | |
| Uniform Delay, d1 | | 51.0 | 37.0 | | | 54.0 | 35.2 | | | 51.7 | 42.2 | |
| Progression Factor | | 1.04 | 0.43 | | | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 17.0 | 9.3 | | | 82.0 | 2.9 | | | 67.9 | 6.3 | |
| Delay (s) | | 70.1 | 25.4 | | | 136.0 | 38.1 | | | 119.6 | 48.5 | |
| Level of Service | | E | C | | | F | D | | | F | D | |
| Approach Delay (s) | | | 29.8 | | | | 50.9 | | | | 66.7 | |
| Approach LOS | | | C | | | | D | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 46.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 89.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 11 | 171 | 378 | 125 |
| Future Volume (vph) | 11 | 171 | 378 | 125 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1544 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1544 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 11 | 178 | 394 | 130 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 100 |
| Lane Group Flow (vph) | 0 | 189 | 394 | 30 |
| Confl. Peds. (#/hr) | | | | 3 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 14.0 | 27.9 | 27.9 |
| Effective Green, g (s) | | 14.0 | 27.9 | 27.9 |
| Actuated g/C Ratio | | 0.12 | 0.23 | 0.23 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 204 | 814 | 358 |
| v/s Ratio Prot | | c0.11 | 0.11 | |
| v/s Ratio Perm | | | | 0.02 |
| v/c Ratio | | 0.93 | 0.48 | 0.08 |
| Uniform Delay, d1 | | 52.5 | 39.8 | 36.1 |
| Progression Factor | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | | 42.5 | 0.5 | 0.1 |
| Delay (s) | | 95.0 | 40.3 | 36.2 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 54.0 | |
| Approach LOS | | | D | |

| Intersection Summary |
|---|

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 187 | 637 | 2 | 1 | 655 | 286 | 0 | 4 | 2 | 228 | 1 | 313 |
| Future Volume (veh/h) | 187 | 637 | 2 | 1 | 655 | 286 | 0 | 4 | 2 | 228 | 1 | 313 |
| 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 | 203 | 692 | 2 | 1 | 712 | 311 | 0 | 4 | 2 | 248 | 1 | 340 |
| 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 | 514 | 738 | 2 | 468 | 693 | 587 | 0 | 9 | 4 | 309 | 1 | 275 |
| Arrive On Green | 0.29 | 0.40 | 0.40 | 0.26 | 0.37 | 0.37 | 0.00 | 0.01 | 0.01 | 0.17 | 0.17 | 0.17 |
| Sat Flow, veh/h | 1767 | 1849 | 5 | 1767 | 1856 | 1571 | 0 | 1167 | 583 | 1767 | 5 | 1569 |
| Grp Volume(v), veh/h | 203 | 0 | 694 | 1 | 712 | 311 | 0 | 0 | 6 | 248 | 0 | 341 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 0 | 1855 | 1767 | 1856 | 1571 | 0 | 0 | 1751 | 1767 | 0 | 1573 |
| Q Serve(g_s), s | 11.0 | 0.0 | 43.1 | 0.0 | 44.8 | 18.6 | 0.0 | 0.0 | 0.4 | 16.2 | 0.0 | 21.0 |
| Cycle Q Clear(g_c), s | 11.0 | 0.0 | 43.1 | 0.0 | 44.8 | 18.6 | 0.0 | 0.0 | 0.4 | 16.2 | 0.0 | 21.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.33 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 514 | 0 | 740 | 468 | 693 | 587 | 0 | 0 | 13 | 309 | 0 | 275 |
| V/C Ratio(X) | 0.40 | 0.00 | 0.94 | 0.00 | 1.03 | 0.53 | 0.00 | 0.00 | 0.45 | 0.80 | 0.00 | 1.24 |
| Avail Cap(c_a), veh/h | 514 | 0 | 828 | 468 | 693 | 587 | 0 | 0 | 321 | 309 | 0 | 275 |
| 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 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.1 | 0.0 | 34.6 | 32.4 | 37.6 | 29.4 | 0.0 | 0.0 | 59.3 | 47.5 | 0.0 | 49.5 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 20.9 | 0.0 | 41.5 | 3.4 | 0.0 | 0.0 | 22.4 | 14.0 | 0.0 | 134.5 |
| 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 | 4.7 | 0.0 | 22.6 | 0.0 | 27.1 | 7.3 | 0.0 | 0.0 | 0.3 | 8.2 | 0.0 | 18.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 34.6 | 0.0 | 55.5 | 32.4 | 79.1 | 32.8 | 0.0 | 0.0 | 81.7 | 61.5 | 0.0 | 184.0 |
| LnGrp LOS | C | A | E | C | F | C | A | A | F | E | A | F |
| Approach Vol, veh/h | | 897 | | | 1024 | | | 6 | | | 589 | |
| Approach Delay, s/veh | | 50.8 | | | 65.0 | | | 81.7 | | | 132.4 | |
| Approach LOS | | D | | | E | | | F | | | F | |

| Timer - Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 4.9 | 36.0 | 53.2 | | 25.9 | 39.1 | 50.1 |
| Change Period (Y+Rc), s | | 4.0 | 4.2 | * 5.3 | | 4.9 | 4.2 | * 5.3 |
| Max Green Setting (Gmax), s | | 22.0 | 5.0 | * 54 | | 21.0 | 13.8 | * 45 |
| Max Q Clear Time (g_c+I1), s | | 2.4 | 2.0 | 45.1 | | 23.0 | 13.0 | 46.8 |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 2.8 | | 0.0 | 0.0 | 0.0 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | | 75.8 |
| HCM 6th LOS | | | E |

**Notes**

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | R | LTR | UL | TR |
| Maximum Queue (ft) | 72 | 56 | 92 | 20 |
| Average Queue (ft) | 22 | 22 | 33 | 1 |
| 95th Queue (ft) | 48 | 51 | 62 | 6 |
| Link Distance (ft) | 2579 | 214 | | 3870 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | 150 | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 74 | 29 |
| Average Queue (ft) | 36 | 3 |
| 95th Queue (ft) | 64 | 16 |
| Link Distance (ft) | 1388 | 1244 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | T | TR | UL | T | T | TR | L | T | TR | L |
| Maximum Queue (ft) | 167 | 231 | 256 | 300 | 278 | 468 | 549 | 566 | 189 | 94 | 152 | 247 |
| Average Queue (ft) | 64 | 159 | 156 | 167 | 69 | 161 | 188 | 210 | 82 | 38 | 46 | 141 |
| 95th Queue (ft) | 122 | 237 | 237 | 277 | 145 | 369 | 411 | 461 | 143 | 70 | 104 | 223 |
| Link Distance (ft) | | 956 | 956 | 956 | | 2608 | 2608 | 2608 | | 2454 | 2454 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 180 | | | | 180 | | | | 180 | | | 180 |
| Storage Blk Time (%) | 0 | 5 | | | | 11 | | | 0 | | | 6 |
| Queuing Penalty (veh) | 0 | 4 | | | | 12 | | | 0 | | | 5 |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | TR |
| Maximum Queue (ft) | 271 | 330 |
| Average Queue (ft) | 73 | 138 |
| 95th Queue (ft) | 161 | 252 |
| Link Distance (ft) | 1258 | 1258 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 1 | |
| Queuing Penalty (veh) | 2 | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | T | TR | UL | T | T | TR | UL | T | TR | UL |
| Maximum Queue (ft) | 135 | 242 | 255 | 383 | 260 | 557 | 509 | 451 | 137 | 206 | 233 | 339 |
| Average Queue (ft) | 70 | 125 | 141 | 180 | 241 | 344 | 321 | 262 | 72 | 115 | 138 | 214 |
| 95th Queue (ft) | 123 | 226 | 226 | 314 | 310 | 515 | 486 | 390 | 122 | 176 | 215 | 326 |
| Link Distance (ft) | | 2608 | 2608 | 2608 | | 2520 | 2520 | 2520 | | 2552 | 2552 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | | 140 | | | | 180 | | | 240 |
| Storage Blk Time (%) | | 0 | | | 80 | 27 | | | | 2 | | 14 |
| Queuing Penalty (veh) | | 0 | | | 411 | 55 | | | | 2 | | 23 |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | R |
| Maximum Queue (ft) | 348 | 182 | 139 |
| Average Queue (ft) | 126 | 111 | 52 |
| 95th Queue (ft) | 237 | 172 | 106 |
| Link Distance (ft) | 3861 | 3861 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 120 |
| Storage Blk Time (%) | 0 | 7 | 1 |
| Queuing Penalty (veh) | 0 | 13 | 1 |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 93 | 48 |
| Average Queue (ft) | 33 | 8 |
| 95th Queue (ft) | 58 | 30 |
| Link Distance (ft) | 2234 | 1450 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | EB | WB | WB | WB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | T | R | LTR | L | TR |
| Maximum Queue (ft) | 137 | 246 | 24 | 243 | 75 | 31 | 132 | 178 |
| Average Queue (ft) | 76 | 98 | 1 | 135 | 27 | 5 | 59 | 49 |
| 95th Queue (ft) | 122 | 199 | 9 | 239 | 63 | 24 | 110 | 114 |
| Link Distance (ft) | | 2594 | | 2572 | | 749 | | 1160 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | 415 | | 250 | | 250 | | 250 | |
| Storage Blk Time (%) | | | | 0 | | | | |
| Queuing Penalty (veh) | | | | 0 | | | | |

## Network Summary

Network wide Queuing Penalty: 527

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | R | R | UL | T | L | T | TR |
| Maximum Queue (ft) | 71 | 54 | 74 | 30 | 31 | 30 | 31 |
| Average Queue (ft) | 24 | 21 | 22 | 1 | 9 | 2 | 1 |
| 95th Queue (ft) | 47 | 51 | 52 | 10 | 30 | 14 | 10 |
| Link Distance (ft) | 2579 | 214 | | 3861 | | 3870 | 3870 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | | | 150 | | 150 | | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LR | TR | LT |
| Maximum Queue (ft) | 79 | 22 | 76 |
| Average Queue (ft) | 40 | 1 | 29 |
| 95th Queue (ft) | 76 | 7 | 73 |
| Link Distance (ft) | 1388 | 1258 | 1244 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | T | TR | UL | T | T | TR | L | T | TR | L |
| Maximum Queue (ft) | 280 | 680 | 646 | 464 | 279 | 304 | 347 | 365 | 280 | 341 | 229 | 280 |
| Average Queue (ft) | 236 | 343 | 337 | 277 | 78 | 170 | 189 | 206 | 192 | 150 | 158 | 160 |
| 95th Queue (ft) | 336 | 570 | 549 | 384 | 187 | 276 | 285 | 317 | 290 | 275 | 231 | 242 |
| Link Distance (ft) | | 956 | 956 | 956 | | 2608 | 2608 | 2608 | | 2454 | 2454 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 180 | | | | 180 | | | | 180 | | | 180 |
| Storage Blk Time (%) | 35 | 24 | | | | 4 | | | 15 | 1 | | 11 |
| Queuing Penalty (veh) | 164 | 65 | | | | 3 | | | 25 | 3 | | 9 |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | TR |
| Maximum Queue (ft) | 364 | 350 |
| Average Queue (ft) | 93 | 126 |
| 95th Queue (ft) | 229 | 241 |
| Link Distance (ft) | 1258 | 1258 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | T | TR | UL | T | T | TR | UL | T | TR | UL |
| Maximum Queue (ft) | 370 | 729 | 783 | 814 | 259 | 306 | 273 | 311 | 300 | 491 | 447 | 260 |
| Average Queue (ft) | 208 | 381 | 417 | 437 | 146 | 233 | 223 | 223 | 236 | 263 | 255 | 140 |
| 95th Queue (ft) | 396 | 638 | 665 | 691 | 232 | 295 | 279 | 291 | 354 | 452 | 396 | 223 |
| Link Distance (ft) | | 2608 | 2608 | 2608 | | 2520 | 2520 | 2520 | | 2552 | 2552 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | | 140 | | | | 180 | | | 240 |
| Storage Blk Time (%) | 3 | 33 | | | 13 | 31 | | | 53 | 9 | | 0 |
| Queuing Penalty (veh) | 15 | 61 | | | 45 | 56 | | | 142 | 21 | | 1 |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | R |
| Maximum Queue (ft) | 182 | 193 | 74 |
| Average Queue (ft) | 101 | 107 | 36 |
| 95th Queue (ft) | 160 | 173 | 63 |
| Link Distance (ft) | 3861 | 3861 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 120 |
| Storage Blk Time (%) | | 10 | |
| Queuing Penalty (veh) | | 12 | |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB | NB |
|---|---|---|---|
| Directions Served | LR | LT | T |
| Maximum Queue (ft) | 53 | 116 | 102 |
| Average Queue (ft) | 26 | 19 | 5 |
| 95th Queue (ft) | 47 | 63 | 37 |
| Link Distance (ft) | 2234 | 1450 | 1450 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | EB | WB | WB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | T | R | LTR | L | TR |
| Maximum Queue (ft) | 249 | 336 | 820 | 370 | 31 | 262 | 385 |
| Average Queue (ft) | 136 | 156 | 335 | 89 | 10 | 134 | 140 |
| 95th Queue (ft) | 223 | 296 | 650 | 274 | 33 | 240 | 270 |
| Link Distance (ft) | | 2594 | 2572 | | 798 | | 1160 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | 415 | | | 250 | | 250 | |
| Storage Blk Time (%) | | | 16 | | | 1 | 1 |
| Queuing Penalty (veh) | | | 45 | | | 4 | 2 |

## Network Summary

Network wide Queuing Penalty: 672

# Appendix J: Cumulative Year 2035 plus Project Traffic Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 32.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 40 | 3 | 28 | 44 | 3 | 16 | 60 | 43 | 1033 | 25 | 4 | 878 | 98 |
| Future Vol, veh/h | 40 | 3 | 28 | 44 | 3 | 16 | 60 | 43 | 1033 | 25 | 4 | 878 | 98 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 43 | 3 | 30 | 48 | 3 | 17 | 65 | 47 | 1123 | 27 | 4 | 954 | 107 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1803 | 2390 | 531 | 1848 | 2430 | 575 | 1061 | 1061 | 0 | 0 | 1150 | 0 | 0 |
| Stage 1 | 1016 | 1016 | - | 1361 | 1361 | - | - | - | - | - | - | - | - |
| Stage 2 | 787 | 1374 | - | 487 | 1069 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 49 | 33 | 490 | ~ 46 | 31 | 459 | 301 | 646 | - | - | 598 | - | - |
| Stage 1 | 253 | 311 | - | 155 | 213 | - | - | - | - | - | - | - | - |
| Stage 2 | 349 | 210 | - | 528 | 294 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 32 | 23 | 490 | ~ 30 | 21 | 459 | 371 | 371 | - | - | 598 | - | - |
| Mov Cap-2 Maneuver | ~ 32 | 23 | - | ~ 30 | 21 | - | - | - | - | - | - | - | - |
| Stage 1 | 177 | 309 | - | 108 | 149 | - | - | - | - | - | - | - | - |
| Stage 2 | 229 | 147 | - | 487 | 292 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 470.2 | $ 610.9 | 1.7 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 371 | - | - | 49 | 38 | 598 | - | - |
| HCM Lane V/C Ratio | 0.302 | - | - | 1.575 | 1.802 | 0.007 | - | - |
| HCM Control Delay (s) | 18.9 | - | - | $ 470.2 | $ 610.9 | 11.1 | - | - |
| HCM Lane LOS | C | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 7.4 | 7.3 | 0 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 63 | 43 | 502 | 19 | 17 | 636 |
| Future Vol, veh/h | 63 | 43 | 502 | 19 | 17 | 636 |
| 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 | 68 | 47 | 546 | 21 | 18 | 691 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 939 | 284 | 0 | 0 | 567 | 0 |
| Stage 1 | 557 | - | - | - | - | - |
| Stage 2 | 382 | - | - | - | - | - |
| 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 | 261 | 710 | - | - | 994 | - |
| Stage 1 | 535 | - | - | - | - | - |
| Stage 2 | 657 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 253 | 710 | - | - | 994 | - |
| Mov Cap-2 Maneuver | 253 | - | - | - | - | - |
| Stage 1 | 519 | - | - | - | - | - |
| Stage 2 | 657 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.8 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 342 | 994 | - |
| HCM Lane V/C Ratio | - | - | 0.337 | 0.019 | - |
| HCM Control Delay (s) | - | - | 20.8 | 8.7 | 0.1 |
| HCM Lane LOS | - | - | C | A | A |
| HCM 95th %tile Q(veh) | - | - | 1.4 | 0.1 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 127 | 1211 | 210 | 66 | 101 | 1598 | 222 | 117 | 116 | 19 | 277 |
| Future Volume (vph) | 4 | 127 | 1211 | 210 | 66 | 101 | 1598 | 222 | 117 | 116 | 19 | 277 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.98 | | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3421 | | | 1752 | 3433 | | 1752 | 3423 | | 1751 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.29 | 1.00 | | 0.66 |
| Satd. Flow (perm) | | 1752 | 3421 | | | 1752 | 3433 | | 531 | 3423 | | 1214 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 4 | 138 | 1316 | 228 | 72 | 110 | 1737 | 241 | 127 | 126 | 21 | 301 |
| RTOR Reduction (vph) | 0 | 0 | 11 | 0 | 0 | 0 | 9 | 0 | 0 | 12 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 142 | 1533 | 0 | 0 | 182 | 1969 | 0 | 127 | 135 | 0 | 301 |
| Confl. Peds. (#/hr) | | 5 | | 1 | | 1 | | 5 | 1 | | 1 | 1 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 8.8 | 58.5 | | | 13.4 | 63.1 | | 33.3 | 33.3 | | 33.3 |
| Effective Green, g (s) | | 8.8 | 58.5 | | | 13.4 | 63.1 | | 33.3 | 33.3 | | 33.3 |
| Actuated g/C Ratio | | 0.07 | 0.49 | | | 0.11 | 0.53 | | 0.28 | 0.28 | | 0.28 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 128 | 1667 | | | 195 | 1805 | | 147 | 949 | | 336 |
| v/s Ratio Prot | | c0.08 | 0.45 | | | 0.10 | c0.57 | | | 0.04 | | |
| v/s Ratio Perm | | | | | | | | | 0.24 | | | c0.25 |
| v/c Ratio | | 1.11 | 0.92 | | | 0.93 | 1.09 | | 0.86 | 0.14 | | 0.90 |
| Uniform Delay, d1 | | 55.6 | 28.6 | | | 52.9 | 28.4 | | 41.2 | 32.6 | | 41.7 |
| Progression Factor | | 1.00 | 1.00 | | | 1.30 | 0.29 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 111.9 | 9.7 | | | 30.0 | 46.5 | | 37.4 | 0.1 | | 24.8 |
| Delay (s) | | 167.5 | 38.3 | | | 98.8 | 54.9 | | 78.6 | 32.7 | | 66.5 |
| Level of Service | | F | D | | | F | D | | E | C | | E |
| Approach Delay (s) | | | 49.2 | | | | 58.6 | | | 54.0 | | |
| Approach LOS | | | D | | | | E | | | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 53.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 1.03 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 97.7% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 156 | 351 |
| Future Volume (vph) | 156 | 351 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.90 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3113 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3113 | |
| Peak-hour factor, PHF | 0.92 | 0.92 |
| Adj. Flow (vph) | 170 | 382 |
| RTOR Reduction (vph) | 77 | 0 |
| Lane Group Flow (vph) | 475 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 33.3 | |
| Effective Green, g (s) | 33.3 | |
| Actuated g/C Ratio | 0.28 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 863 | |
| v/s Ratio Prot | 0.15 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.55 | |
| Uniform Delay, d1 | 37.0 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.8 | |
| Delay (s) | 37.7 | |
| Level of Service | D | |
| Approach Delay (s) | 47.9 | |
| Approach LOS | D | |

Intersection Summary

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1516 | 1866 | 35 | 0 | 67 |
| Future Vol, veh/h | 0 | 1516 | 1866 | 35 | 0 | 67 |
| 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 | 1648 | 2028 | 38 | 0 | 73 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 1033 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 228 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 228 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 28 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 228 |
| HCM Lane V/C Ratio | - | - | - | 0.319 |
| HCM Control Delay (s) | - | - | - | 28 |
| HCM Lane LOS | - | - | - | D |
| HCM 95th %tile Q(veh) | - | - | - | 1.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 56 | 1460 | 1836 | 64 | 0 | 65 |
| Future Vol, veh/h | 56 | 1460 | 1836 | 64 | 0 | 65 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | - | - | - | - | 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 | 61 | 1587 | 1996 | 70 | 0 | 71 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2066 | 0 | - | 0 | - | 1033 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.16 | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.23 | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 263 | - | - | - | 0 | 228 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 263 | - | - | - | - | 228 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | | WB | | SB | |
|---|---|---|---|---|---|---|
| HCM Control Delay, s | 0.8 | | 0 | | 27.7 | |
| HCM LOS | | | | | D | |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 263 | - | - | - | 228 |
| HCM Lane V/C Ratio | 0.231 | - | - | - | 0.31 |
| HCM Control Delay (s) | 22.8 | - | - | - | 27.7 |
| HCM Lane LOS | C | - | - | - | D |
| HCM 95th %tile Q(veh) | 0.9 | - | - | - | 1.3 |

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 0 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1460 | 1897 | 12 | 0 | 3 |
| Future Vol, veh/h | 0 | 1460 | 1897 | 12 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 1587 | 2062 | 13 | 0 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 1038 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 226 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 226 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 21.2 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 226 |
| HCM Lane V/C Ratio | - | - | - | 0.014 |
| HCM Control Delay (s) | - | - | - | 21.2 |
| HCM Lane LOS | - | - | - | C |
| HCM 95th %tile Q(veh) | - | - | - | 0 |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 86 | 1069 | 298 | 15 | 189 | 1584 | 147 | 5 | 129 | 349 | 171 |
| Future Volume (vph) | 2 | 86 | 1069 | 298 | 15 | 189 | 1584 | 147 | 5 | 129 | 349 | 171 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frt | | 1.00 | 0.97 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.95 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3390 | | | 1752 | 3505 | 1568 | | 1752 | 3332 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3390 | | | 1752 | 3505 | 1568 | | 1752 | 3332 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 93 | 1162 | 324 | 16 | 205 | 1722 | 160 | 5 | 140 | 379 | 186 |
| RTOR Reduction (vph) | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | 55 | 0 |
| Lane Group Flow (vph) | 0 | 95 | 1467 | 0 | 0 | 221 | 1722 | 85 | 0 | 145 | 510 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 5.8 | 52.4 | | | 11.8 | 58.1 | 58.1 | | 15.9 | 24.6 | |
| Effective Green, g (s) | | 5.8 | 52.4 | | | 11.8 | 58.1 | 58.1 | | 15.9 | 24.6 | |
| Actuated g/C Ratio | | 0.05 | 0.44 | | | 0.10 | 0.48 | 0.48 | | 0.13 | 0.21 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 84 | 1480 | | | 172 | 1697 | 759 | | 232 | 683 | |
| v/s Ratio Prot | | 0.05 | c0.43 | | | c0.13 | c0.49 | | | 0.08 | c0.15 | |
| v/s Ratio Perm | | | | | | | | 0.05 | | | | |
| v/c Ratio | | 1.13 | 0.99 | | | 1.28 | 1.01 | 0.11 | | 0.62 | 0.75 | |
| Uniform Delay, d1 | | 57.1 | 33.6 | | | 54.1 | 30.9 | 16.9 | | 49.2 | 44.8 | |
| Progression Factor | | 0.98 | 0.79 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 103.7 | 13.3 | | | 164.9 | 25.6 | 0.3 | | 5.2 | 4.5 | |
| Delay (s) | | 159.9 | 39.7 | | | 219.0 | 56.5 | 17.2 | | 54.4 | 49.2 | |
| Level of Service | | F | D | | | F | E | B | | D | D | |
| Approach Delay (s) | | | 46.9 | | | | 70.6 | | | | 50.3 | |
| Approach LOS | | | D | | | | E | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 66.5 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.03 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 93.7% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 2 | 216 | 341 | 199 |
| Future Volume (vph) | 2 | 216 | 341 | 199 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1568 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 235 | 371 | 216 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 137 |
| Lane Group Flow (vph) | 0 | 237 | 371 | 79 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 11.8 | 20.5 | 20.5 |
| Effective Green, g (s) | | 11.8 | 20.5 | 20.5 |
| Actuated g/C Ratio | | 0.10 | 0.17 | 0.17 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 172 | 598 | 267 |
| v/s Ratio Prot | | c0.14 | 0.11 | |
| v/s Ratio Perm | | | | 0.05 |
| v/c Ratio | | 1.38 | 0.62 | 0.30 |
| Uniform Delay, d1 | | 54.1 | 46.1 | 43.5 |
| Progression Factor | | 1.02 | 1.01 | 1.02 |
| Incremental Delay, d2 | | 202.2 | 2.0 | 0.6 |
| Delay (s) | | 257.2 | 48.6 | 45.1 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 107.7 | |
| Approach LOS | | | F | |

| Intersection Summary |
|---|

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 2.2 | | | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 92 | 38 | 163 | 286 | 10 |
| Future Vol, veh/h | 5 | 92 | 38 | 163 | 286 | 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 | 5 | 100 | 41 | 177 | 311 | 11 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 488 | 161 | 322 | 0 | - | 0 |
| Stage 1 | 317 | - | - | - | - | - |
| Stage 2 | 171 | - | - | - | - | - |
| 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 | 506 | 852 | 1227 | - | - | - |
| Stage 1 | 708 | - | - | - | - | - |
| Stage 2 | 839 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 487 | 852 | 1227 | - | - | - |
| Mov Cap-2 Maneuver | 487 | - | - | - | - | - |
| Stage 1 | 682 | - | - | - | - | - |
| Stage 2 | 839 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10 | 1.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1227 | - | 820 | - | - |
| HCM Lane V/C Ratio | 0.034 | - | 0.129 | - | - |
| HCM Control Delay (s) | 8 | 0.1 | 10 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.4 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 63.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 99 | 630 | 0 | 1 | 467 | 96 | 1 | 0 | 1 | 105 | 1 | 194 |
| Future Vol, veh/h | 99 | 630 | 0 | 1 | 467 | 96 | 1 | 0 | 1 | 105 | 1 | 194 |
| 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| 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 | 108 | 685 | 0 | 1 | 508 | 104 | 1 | 0 | 1 | 114 | 1 | 211 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 612 | 0 | 0 | 685 | 0 | 0 | 1569 | 1515 | 685 | 1464 | 1463 | 560 |
| Stage 1 | - | - | - | - | - | - | 901 | 901 | - | 562 | 562 | - |
| Stage 2 | - | - | - | - | - | - | 668 | 614 | - | 902 | 901 | - |
| 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 | 962 | - | - | 904 | - | - | 89 | 119 | 446 | ~ 106 | 128 | 526 |
| Stage 1 | - | - | - | - | - | - | 331 | 356 | - | 510 | 508 | - |
| Stage 2 | - | - | - | - | - | - | 446 | 481 | - | 331 | 356 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 962 | - | - | 904 | - | - | 48 | 105 | 446 | ~ 96 | 113 | 526 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 48 | 105 | - | ~ 96 | 113 | - |
| Stage 1 | - | - | - | - | - | - | 294 | 316 | - | 453 | 507 | - |
| Stage 2 | - | - | - | - | - | - | 266 | 480 | - | 293 | 316 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 1.3 | 0 | 47.4 | $ 332.9 |
| HCM LOS | | | E | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 87 | 962 | - | - | 904 | - | - | 204 |
| HCM Lane V/C Ratio | 0.025 | 0.112 | - | - | 0.001 | - | - | 1.598 |
| HCM Control Delay (s) | 47.4 | 9.2 | - | - | 9 | 0 | - | $ 332.9 |
| HCM Lane LOS | E | A | - | - | A | A | - | F |
| HCM 95th %tile Q(veh) | 0.1 | 0.4 | - | - | 0 | - | - | 21.1 |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Intersection | |
|---|---|
| Int Delay, s/veh | 16.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 4 | 25 | 26 | 3 | 8 | 25 | 30 | 1063 | 32 | 11 | 1100 | 50 |
| Future Vol, veh/h | 27 | 4 | 25 | 26 | 3 | 8 | 25 | 30 | 1063 | 32 | 11 | 1100 | 50 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 29 | 4 | 27 | 28 | 3 | 9 | 27 | 33 | 1155 | 35 | 12 | 1196 | 54 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1947 | 2566 | 628 | 1929 | 2576 | 605 | 1250 | 1250 | 0 | 0 | 1199 | 0 | 0 |
| Stage 1 | 1247 | 1247 | - | 1302 | 1302 | - | - | - | - | - | - | - | - |
| Stage 2 | 700 | 1319 | - | 627 | 1274 | - | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.56 | 6.56 | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.56 | 5.56 | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.53 | 4.03 | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 38 | 25 | 423 | 40 | 25 | 438 | 227 | 547 | - | - | 572 | - | - |
| Stage 1 | 182 | 242 | - | 168 | 227 | - | - | - | - | - | - | - | - |
| Stage 2 | 394 | 223 | - | 436 | 234 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 28 | 20 | 422 | ~ 26 | 20 | 434 | 320 | 320 | - | - | 567 | - | - |
| Mov Cap-2 Maneuver | ~ 28 | 20 | - | ~ 26 | 20 | - | - | - | - | - | - | - | - |
| Stage 1 | 148 | 237 | - | 135 | 183 | - | - | - | - | - | - | - | - |
| Stage 2 | 308 | 180 | - | 391 | 229 | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 383.8 | $ 434.1 | 0.9 | 0.1 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 320 | - | - | 46 | 32 | 567 | - | - |
| HCM Lane V/C Ratio | 0.187 | - | - | 1.323 | 1.257 | 0.021 | - | - |
| HCM Control Delay (s) | 18.8 | - | - | $ 383.8 | $ 434.1 | 11.5 | - | - |
| HCM Lane LOS | C | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | - | 5.8 | 4.4 | 0.1 | - | - |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 52 | 825 | 60 | 40 | 595 |
| Future Vol, veh/h | 25 | 52 | 825 | 60 | 40 | 595 |
| 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 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 26 | 55 | 868 | 63 | 42 | 626 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1297 | 466 | 0 | 0 | 931 | 0 |
| Stage 1 | 900 | - | - | - | - | - |
| Stage 2 | 397 | - | - | - | - | - |
| 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 | 152 | 541 | - | - | 724 | - |
| Stage 1 | 355 | - | - | - | - | - |
| Stage 2 | 645 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 138 | 541 | - | - | 724 | - |
| Mov Cap-2 Maneuver | 138 | - | - | - | - | - |
| Stage 1 | 323 | - | - | - | - | - |
| Stage 2 | 645 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 23.2 | 0 | 1 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 278 | 724 | - |
| HCM Lane V/C Ratio | - | - | 0.292 | 0.058 | - |
| HCM Control Delay (s) | - | - | 23.2 | 10.3 | 0.4 |
| HCM Lane LOS | - | - | C | B | A |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0.2 | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 296 | 1451 | 131 | 60 | 72 | 1337 | 188 | 330 | 334 | 200 | 232 |
| Future Volume (vph) | 2 | 296 | 1451 | 131 | 60 | 72 | 1337 | 188 | 330 | 334 | 200 | 232 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.99 | | | 1.00 | 0.98 | | 1.00 | 0.94 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 3461 | | | 1752 | 3440 | | 1752 | 3308 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.41 | 1.00 | | 0.34 |
| Satd. Flow (perm) | | 1752 | 3461 | | | 1752 | 3440 | | 759 | 3308 | | 622 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 2 | 318 | 1560 | 141 | 65 | 77 | 1438 | 202 | 355 | 359 | 215 | 249 |
| RTOR Reduction (vph) | 0 | 0 | 6 | 0 | 0 | 0 | 9 | 0 | 0 | 31 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 320 | 1695 | 0 | 0 | 142 | 1631 | 0 | 355 | 543 | 0 | 249 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Perm | NA | | Perm |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | | 2 | | |
| Permitted Phases | | | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | | 14.8 | 52.3 | | | 7.8 | 45.3 | | 45.1 | 45.1 | | 45.1 |
| Effective Green, g (s) | | 14.8 | 52.3 | | | 7.8 | 45.3 | | 45.1 | 45.1 | | 45.1 |
| Actuated g/C Ratio | | 0.12 | 0.44 | | | 0.06 | 0.38 | | 0.38 | 0.38 | | 0.38 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.9 | 4.9 | | 4.9 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 216 | 1508 | | | 113 | 1298 | | 285 | 1243 | | 233 |
| v/s Ratio Prot | | c0.18 | 0.49 | | | 0.08 | c0.47 | | | 0.16 | | |
| v/s Ratio Perm | | | | | | | | | c0.47 | | | 0.40 |
| v/c Ratio | | 1.48 | 1.12 | | | 1.26 | 1.26 | | 1.25 | 0.44 | | 1.07 |
| Uniform Delay, d1 | | 52.6 | 33.9 | | | 56.1 | 37.4 | | 37.5 | 28.0 | | 37.5 |
| Progression Factor | | 1.00 | 1.00 | | | 0.97 | 0.58 | | 1.00 | 1.00 | | 1.00 |
| Incremental Delay, d2 | | 239.8 | 65.2 | | | 154.1 | 119.7 | | 136.5 | 0.2 | | 78.3 |
| Delay (s) | | 292.4 | 99.0 | | | 208.7 | 141.5 | | 173.9 | 28.2 | | 115.8 |
| Level of Service | | F | F | | | F | F | | F | C | | F |
| Approach Delay (s) | | | 129.6 | | | | 146.8 | | | 83.9 | | |
| Approach LOS | | | F | | | | F | | | F | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 118.0 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.28 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 14.8 |
| Intersection Capacity Utilization | 107.9% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | ↑↱ | |
| Traffic Volume (vph) | 166 | 266 |
| Future Volume (vph) | 166 | 266 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.91 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3155 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3155 | |
| Peak-hour factor, PHF | 0.93 | 0.93 |
| Adj. Flow (vph) | 178 | 286 |
| RTOR Reduction (vph) | 166 | 0 |
| Lane Group Flow (vph) | 298 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 45.1 | |
| Effective Green, g (s) | 45.1 | |
| Actuated g/C Ratio | 0.38 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 1185 | |
| v/s Ratio Prot | 0.09 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.25 | |
| Uniform Delay, d1 | 25.8 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.1 | |
| Delay (s) | 25.9 | |
| Level of Service | C | |
| Approach Delay (s) | 57.3 | |
| Approach LOS | E | |

Intersection Summary

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 0.2 | | | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1905 | 1547 | 26 | 0 | 42 |
| Future Vol, veh/h | 0 | 1905 | 1547 | 26 | 0 | 42 |
| 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 | 2071 | 1682 | 28 | 0 | 46 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 855 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 300 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 300 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 19.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 300 |
| HCM Lane V/C Ratio | - | - | - | 0.152 |
| HCM Control Delay (s) | - | - | - | 19.1 |
| HCM Lane LOS | - | - | - | C |
| HCM 95th %tile Q(veh) | - | - | - | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 38 | 1867 | 1501 | 50 | 0 | 72 |
| Future Vol, veh/h | 38 | 1867 | 1501 | 50 | 0 | 72 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | - | - | - | - | 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 | 41 | 2029 | 1632 | 54 | 0 | 78 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1686 | 0 | - | 0 | - | 843 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.16 | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.23 | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 371 | - | - | - | 0 | 305 |
| Stage 1 | - | - | - | - | 0 | - |
| Stage 2 | - | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 371 | - | - | - | - | 305 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0 | 20.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 371 | - | - | - | 305 |
| HCM Lane V/C Ratio | 0.111 | - | - | - | 0.257 |
| HCM Control Delay (s) | 15.9 | - | - | - | 20.8 |
| HCM Lane LOS | C | - | - | - | C |
| HCM 95th %tile Q(veh) | 0.4 | - | - | - | 1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1867 | 1526 | 8 | 0 | 25 |
| Future Vol, veh/h | 0 | 1867 | 1526 | 8 | 0 | 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 | 0 | 2029 | 1659 | 9 | 0 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 834 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.96 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.33 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 309 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 309 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 17.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 309 |
| HCM Lane V/C Ratio | - | - | - | 0.088 |
| HCM Control Delay (s) | - | - | - | 17.8 |
| HCM Lane LOS | - | - | - | C |
| HCM 95th %tile Q(veh) | - | - | - | 0.3 |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 193 | 1580 | 181 | 2 | 176 | 1094 | 125 | 9 | 241 | 540 | 160 |
| Future Volume (vph) | 6 | 193 | 1580 | 181 | 2 | 176 | 1094 | 125 | 9 | 241 | 540 | 160 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.95 | | | 1.00 | 0.95 | 1.00 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 1.00 | 0.98 | | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.97 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 3446 | | | 1752 | 3505 | 1546 | | 1752 | 3385 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 3446 | | | 1752 | 3505 | 1546 | | 1752 | 3385 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 6 | 201 | 1646 | 189 | 2 | 183 | 1140 | 130 | 9 | 251 | 562 | 167 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 80 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 0 | 207 | 1828 | 0 | 0 | 185 | 1140 | 50 | 0 | 260 | 705 | 0 |
| Confl. Peds. (#/hr) | | | | 2 | | | | 2 | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | Perm | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | 8 | | | | |
| Actuated Green, G (s) | | 14.6 | 52.4 | | | 8.8 | 46.3 | 46.3 | | 11.8 | 30.6 | |
| Effective Green, g (s) | | 14.6 | 52.4 | | | 8.8 | 46.3 | 46.3 | | 11.8 | 30.6 | |
| Actuated g/C Ratio | | 0.12 | 0.44 | | | 0.07 | 0.39 | 0.39 | | 0.10 | 0.26 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | 6.0 | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 213 | 1504 | | | 128 | 1352 | 596 | | 172 | 863 | |
| v/s Ratio Prot | | 0.12 | c0.53 | | | c0.11 | 0.33 | | | c0.15 | c0.21 | |
| v/s Ratio Perm | | | | | | | | 0.03 | | | | |
| v/c Ratio | | 0.97 | 1.22 | | | 1.45 | 0.84 | 0.08 | | 1.51 | 0.82 | |
| Uniform Delay, d1 | | 52.5 | 33.8 | | | 55.6 | 33.5 | 23.4 | | 54.1 | 42.1 | |
| Progression Factor | | 1.19 | 0.51 | | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 12.6 | 97.6 | | | 238.7 | 6.6 | 0.3 | | 257.8 | 6.1 | |
| Delay (s) | | 75.2 | 114.7 | | | 294.3 | 40.1 | 23.7 | | 311.9 | 48.1 | |
| Level of Service | | E | F | | | F | D | C | | F | D | |
| Approach Delay (s) | | | 110.7 | | | | 71.0 | | | | 117.4 | |
| Approach LOS | | | F | | | | E | | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 100.6 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.21 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 105.6% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 11 | 171 | 378 | 144 |
| Future Volume (vph) | 11 | 171 | 378 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1544 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1544 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 11 | 178 | 394 | 150 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 116 |
| Lane Group Flow (vph) | 0 | 189 | 394 | 35 |
| Confl. Peds. (#/hr) | | | | 3 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 8.8 | 27.6 | 27.6 |
| Effective Green, g (s) | | 8.8 | 27.6 | 27.6 |
| Actuated g/C Ratio | | 0.07 | 0.23 | 0.23 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 128 | 806 | 355 |
| v/s Ratio Prot | | c0.11 | 0.11 | |
| v/s Ratio Perm | | | | 0.02 |
| v/c Ratio | | 1.48 | 0.49 | 0.10 |
| Uniform Delay, d1 | | 55.6 | 40.1 | 36.4 |
| Progression Factor | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | | 251.6 | 0.5 | 0.1 |
| Delay (s) | | 307.2 | 40.5 | 36.5 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 108.5 | |
| Approach LOS | | | F | |

| Intersection Summary |
|---|

| Intersection | | | | | | |
|---|---|---|---|---|---|---|
| Int Delay, s/veh | 2.2 | | | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 64 | 146 | 579 | 245 | 4 |
| Future Vol, veh/h | 6 | 64 | 146 | 579 | 245 | 4 |
| 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 | 7 | 70 | 159 | 629 | 266 | 4 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 901 | 135 | 270 | 0 | - | 0 |
| Stage 1 | 268 | - | - | - | - | - |
| Stage 2 | 633 | - | - | - | - | - |
| 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 | 276 | 886 | 1283 | - | - | - |
| Stage 1 | 750 | - | - | - | - | - |
| Stage 2 | 489 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 223 | 886 | 1283 | - | - | - |
| Mov Cap-2 Maneuver | 223 | - | - | - | - | - |
| Stage 1 | 607 | - | - | - | - | - |
| Stage 2 | 489 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.7 | 2.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1283 | - | 706 | - | - |
| HCM Lane V/C Ratio | 0.124 | - | 0.108 | - | - |
| HCM Control Delay (s) | 8.2 | 0.5 | 10.7 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 0.4 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 868.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 192 | 637 | 2 | 1 | 655 | 286 | 0 | 4 | 2 | 228 | 1 | 315 |
| Future Vol, veh/h | 192 | 637 | 2 | 1 | 655 | 286 | 0 | 4 | 2 | 228 | 1 | 315 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 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 | 415 | - | - | - | - | - | - | - | - | - | - | - |
| 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 | 209 | 692 | 2 | 1 | 712 | 311 | 0 | 4 | 2 | 248 | 1 | 342 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1024 | 0 | 0 | 694 | 0 | 0 | 2152 | 2137 | 693 | 1985 | 1983 | 869 |
| Stage 1 | - | - | - | - | - | - | 1111 | 1111 | - | 871 | 871 | - |
| Stage 2 | - | - | - | - | - | - | 1041 | 1026 | - | 1114 | 1112 | - |
| 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 | 674 | - | - | 897 | - | - | 35 | 49 | 442 | ~ 45 | 61 | 350 |
| Stage 1 | - | - | - | - | - | - | 253 | 283 | - | 344 | 367 | - |
| Stage 2 | - | - | - | - | - | - | 277 | 311 | - | 252 | 283 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 673 | - | - | 897 | - | - | 1 | 34 | 442 | ~ 31 | 42 | 350 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 1 | 34 | - | ~ 31 | 42 | - |
| Stage 1 | - | - | - | - | - | - | 174 | 195 | - | ~ 237 | 366 | - |
| Stage 2 | - | - | - | - | - | - | 6 | 310 | - | ~ 169 | 195 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 2.9 | 0 | 89.4 | $ 3701.5 |
| HCM LOS | | | F | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 49 | 673 | - | - | 897 | - | - | 66 |
| HCM Lane V/C Ratio | 0.133 | 0.31 | - | - | 0.001 | - | - | 8.959 |
| HCM Control Delay (s) | 89.4 | 12.7 | - | - | 9 | 0 | | $ 3701.5 |
| HCM Lane LOS | F | B | - | - | A | A | - | F |
| HCM 95th %tile Q(veh) | 0.4 | 1.3 | - | - | 0 | - | - | 68.9 |

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 49 | 0 | 0 | 39 | 60 | 43 | 1073 | 28 | 4 | 922 | 101 |
| Future Vol, veh/h | 0 | 0 | 49 | 0 | 0 | 39 | 60 | 43 | 1073 | 28 | 4 | 922 | 101 |
| Conflicting Peds, #/hr | 0 | 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 | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 53 | 0 | 0 | 42 | 65 | 47 | 1166 | 30 | 4 | 1002 | 110 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 556 | - | - | 598 | 1112 | 1112 | 0 | 0 | 1196 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 472 | 0 | 0 | 443 | 279 | 618 | - | - | 574 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 472 | - | - | 443 | 333 | 333 | - | - | 574 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 13.6 | 14 | 1.8 | 0 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 333 | - | - | 472 | 443 | 574 | - | - |
| HCM Lane V/C Ratio | 0.336 | - | - | 0.113 | 0.096 | 0.008 | - | - |
| HCM Control Delay (s) | 21.2 | - | - | 13.6 | 14 | 11.3 | - | - |
| HCM Lane LOS | C | - | - | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 1.4 | - | - | 0.4 | 0.3 | 0 | - | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 127 | 1211 | 210 | 66 | 101 | 1598 | 222 | 117 | 116 | 19 | 277 |
| Future Volume (vph) | 4 | 127 | 1211 | 210 | 66 | 101 | 1598 | 222 | 117 | 116 | 19 | 277 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.2 | 4.9 | | 4.2 |
| Lane Util. Factor | | 1.00 | 0.91 | | | 1.00 | 0.91 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.98 | | | 1.00 | 0.98 | | 1.00 | 0.98 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 4915 | | | 1752 | 4933 | | 1752 | 3423 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (perm) | | 1752 | 4915 | | | 1752 | 4933 | | 1752 | 3423 | | 1752 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 4 | 138 | 1316 | 228 | 72 | 110 | 1737 | 241 | 127 | 126 | 21 | 301 |
| RTOR Reduction (vph) | 0 | 0 | 16 | 0 | 0 | 0 | 12 | 0 | 0 | 13 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 142 | 1528 | 0 | 0 | 182 | 1966 | 0 | 127 | 134 | 0 | 301 |
| Confl. Peds. (#/hr) | | | | 1 | | | | 5 | | | 1 | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Prot | NA | | Prot |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 2 | | 1 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 7.8 | 51.8 | | | 12.3 | 56.3 | | 13.6 | 21.1 | | 15.8 |
| Effective Green, g (s) | | 7.8 | 51.8 | | | 12.3 | 56.3 | | 13.6 | 21.1 | | 15.8 |
| Actuated g/C Ratio | | 0.06 | 0.43 | | | 0.10 | 0.47 | | 0.11 | 0.18 | | 0.13 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.2 | 4.9 | | 4.2 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 113 | 2121 | | | 179 | 2314 | | 198 | 601 | | 230 |
| v/s Ratio Prot | | c0.08 | 0.31 | | | c0.10 | c0.40 | | c0.07 | 0.04 | | c0.17 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 1.26 | 0.72 | | | 1.02 | 0.85 | | 0.64 | 0.22 | | 1.31 |
| Uniform Delay, d1 | | 56.1 | 28.1 | | | 53.9 | 28.1 | | 50.9 | 42.4 | | 52.1 |
| Progression Factor | | 1.00 | 1.00 | | | 1.33 | 0.29 | | 0.82 | 0.74 | | 1.00 |
| Incremental Delay, d2 | | 168.8 | 2.1 | | | 59.7 | 2.9 | | 6.8 | 0.2 | | 166.6 |
| Delay (s) | | 224.9 | 30.3 | | | 131.5 | 10.9 | | 48.7 | 31.6 | | 218.7 |
| Level of Service | | F | C | | | F | B | | D | C | | F |
| Approach Delay (s) | | | 46.7 | | | | 21.1 | | | 39.5 | | |
| Approach LOS | | | D | | | | C | | | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 45.8 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.91 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 81.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 156 | 351 |
| Future Volume (vph) | 156 | 351 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.90 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3113 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3113 | |
| Peak-hour factor, PHF | 0.92 | 0.92 |
| Adj. Flow (vph) | 170 | 382 |
| RTOR Reduction (vph) | 131 | 0 |
| Lane Group Flow (vph) | 421 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 23.3 | |
| Effective Green, g (s) | 23.3 | |
| Actuated g/C Ratio | 0.19 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 604 | |
| v/s Ratio Prot | c0.14 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.88dr | |
| Uniform Delay, d1 | 45.1 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 3.5 | |
| Delay (s) | 48.6 | |
| Level of Service | D | |
| Approach Delay (s) | 108.6 | |
| Approach LOS | F | |

| Intersection Summary |
|---|

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 86 | 1069 | 298 | 15 | 189 | 1584 | 147 | 5 | 129 | 349 | 171 |
| Future Volume (vph) | 2 | 86 | 1069 | 298 | 15 | 189 | 1584 | 147 | 5 | 129 | 349 | 171 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.91 | | | 1.00 | 0.91 | | | 1.00 | 0.95 | |
| Frt | | 1.00 | 0.97 | | | 1.00 | 0.99 | | | 1.00 | 0.95 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 4871 | | | 1752 | 4972 | | | 1752 | 3332 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 4871 | | | 1752 | 4972 | | | 1752 | 3332 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 93 | 1162 | 324 | 16 | 205 | 1722 | 160 | 5 | 140 | 379 | 186 |
| RTOR Reduction (vph) | 0 | 0 | 37 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 55 | 0 |
| Lane Group Flow (vph) | 0 | 95 | 1449 | 0 | 0 | 221 | 1874 | 0 | 0 | 145 | 510 | 0 |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 7.6 | 43.9 | | | 15.5 | 51.5 | | | 20.7 | 24.5 | |
| Effective Green, g (s) | | 7.6 | 43.9 | | | 15.5 | 51.5 | | | 20.7 | 24.5 | |
| Actuated g/C Ratio | | 0.06 | 0.37 | | | 0.13 | 0.43 | | | 0.17 | 0.20 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 110 | 1781 | | | 226 | 2133 | | | 302 | 680 | |
| v/s Ratio Prot | | 0.05 | c0.30 | | | c0.13 | c0.38 | | | c0.08 | c0.15 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.86 | 0.81 | | | 0.98 | 0.88 | | | 0.48 | 0.75 | |
| Uniform Delay, d1 | | 55.7 | 34.4 | | | 52.1 | 31.4 | | | 44.8 | 44.9 | |
| Progression Factor | | 0.81 | 0.65 | | | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 29.0 | 2.3 | | | 53.0 | 5.5 | | | 1.2 | 4.7 | |
| Delay (s) | | 73.9 | 24.5 | | | 105.1 | 36.9 | | | 46.0 | 49.5 | |
| Level of Service | | E | C | | | F | D | | | D | D | |
| Approach Delay (s) | | | 27.4 | | | | 44.1 | | | | 48.8 | |
| Approach LOS | | | C | | | | D | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 42.4 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 82.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 2 | 216 | 341 | 199 |
| Future Volume (vph) | 2 | 216 | 341 | 199 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1568 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1568 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 2 | 235 | 371 | 216 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 158 |
| Lane Group Flow (vph) | 0 | 237 | 371 | 58 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 16.7 | 20.5 | 20.5 |
| Effective Green, g (s) | | 16.7 | 20.5 | 20.5 |
| Actuated g/C Ratio | | 0.14 | 0.17 | 0.17 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 243 | 598 | 267 |
| v/s Ratio Prot | | c0.14 | 0.11 | |
| v/s Ratio Perm | | | | 0.04 |
| v/c Ratio | | 0.98 | 0.62 | 0.22 |
| Uniform Delay, d1 | | 51.4 | 46.1 | 42.9 |
| Progression Factor | | 1.00 | 0.99 | 0.95 |
| Incremental Delay, d2 | | 50.4 | 2.0 | 0.4 |
| Delay (s) | | 101.6 | 47.6 | 41.1 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 61.4 | |
| Approach LOS | | | E | |

Intersection Summary

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 99 | 630 | 0 | 1 | 467 | 96 | 1 | 0 | 1 | 105 | 1 | 194 |
| Future Volume (veh/h) | 99 | 630 | 0 | 1 | 467 | 96 | 1 | 0 | 1 | 105 | 1 | 194 |
| 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 | 108 | 685 | 0 | 1 | 508 | 104 | 1 | 0 | 1 | 114 | 1 | 211 |
| 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 | 688 | 732 | 0 | 524 | 561 | 475 | 2 | 0 | 2 | 270 | 1 | 239 |
| Arrive On Green | 0.39 | 0.39 | 0.00 | 0.30 | 0.30 | 0.30 | 0.00 | 0.00 | 0.00 | 0.15 | 0.15 | 0.15 |
| Sat Flow, veh/h | 1767 | 1856 | 0 | 1767 | 1856 | 1572 | 832 | 0 | 832 | 1767 | 7 | 1566 |
| Grp Volume(v), veh/h | 108 | 685 | 0 | 1 | 508 | 104 | 2 | 0 | 0 | 114 | 0 | 212 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 1856 | 0 | 1767 | 1856 | 1572 | 1664 | 0 | 0 | 1767 | 0 | 1574 |
| Q Serve(g_s), s | 4.8 | 42.5 | 0.0 | 0.0 | 31.6 | 5.9 | 0.1 | 0.0 | 0.0 | 7.0 | 0.0 | 15.8 |
| Cycle Q Clear(g_c), s | 4.8 | 42.5 | 0.0 | 0.0 | 31.6 | 5.9 | 0.1 | 0.0 | 0.0 | 7.0 | 0.0 | 15.8 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.50 | | 0.50 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 688 | 732 | 0 | 524 | 561 | 475 | 4 | 0 | 0 | 270 | 0 | 240 |
| V/C Ratio(X) | 0.16 | 0.94 | 0.00 | 0.00 | 0.91 | 0.22 | 0.45 | 0.00 | 0.00 | 0.42 | 0.00 | 0.88 |
| Avail Cap(c_a), veh/h | 688 | 829 | 0 | 524 | 724 | 613 | 305 | 0 | 0 | 309 | 0 | 275 |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.8 | 34.8 | 0.0 | 29.7 | 40.2 | 31.3 | 59.7 | 0.0 | 0.0 | 46.1 | 0.0 | 49.8 |
| Incr Delay (d2), s/veh | 0.1 | 20.7 | 0.0 | 0.0 | 20.7 | 1.1 | 57.2 | 0.0 | 0.0 | 1.1 | 0.0 | 24.7 |
| 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 | 2.0 | 22.3 | 0.0 | 0.0 | 17.0 | 2.3 | 0.1 | 0.0 | 0.0 | 3.1 | 0.0 | 7.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 24.0 | 55.6 | 0.0 | 29.7 | 60.9 | 32.3 | 117.0 | 0.0 | 0.0 | 47.1 | 0.0 | 74.5 |
| LnGrp LOS | C | E | A | C | E | C | F | A | A | D | A | E |
| Approach Vol, veh/h | | 793 | | | 613 | | | 2 | | | 326 | |
| Approach Delay, s/veh | | 51.3 | | | 56.0 | | | 117.0 | | | 64.9 | |
| Approach LOS | | D | | | E | | | F | | | E | |

| Timer - Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 4.3 | 39.8 | 52.7 | | 23.2 | 50.9 | 41.6 |
| Change Period (Y+Rc), s | | 4.0 | 4.2 | * 5.3 | | 4.9 | 4.2 | * 5.3 |
| Max Green Setting (Gmax), s | | 22.0 | 5.0 | * 54 | | 21.0 | 11.8 | * 47 |
| Max Q Clear Time (g_c+I1), s | | 2.1 | 2.0 | 44.5 | | 17.8 | 6.8 | 33.6 |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 2.9 | | 0.5 | 0.1 | 2.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 55.6 |
| HCM 6th LOS | E |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 40 | 0 | 0 | 22 | 25 | 30 | 1090 | 36 | 11 | 1126 | 53 |
| Future Vol, veh/h | 0 | 0 | 40 | 0 | 0 | 22 | 25 | 30 | 1090 | 36 | 11 | 1126 | 53 |
| Conflicting Peds, #/hr | 1 | 0 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | - | None | - | - | None |
| Storage Length | - | - | 0 | - | - | 0 | - | 150 | - | - | 150 | - | - |
| 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 | 92 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 0 | 43 | 0 | 0 | 24 | 27 | 33 | 1185 | 39 | 12 | 1224 | 58 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | 644 | - | - | 622 | 1282 | 1282 | 0 | 0 | 1233 | 0 | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | 6.96 | - | - | 6.96 | 6.46 | 4.16 | - | - | 4.16 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | 3.33 | - | - | 3.33 | 2.53 | 2.23 | - | - | 2.23 | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 413 | 0 | 0 | 427 | 216 | 532 | - | - | 555 | - | - |
| Stage 1 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Stage 2 | 0 | 0 | - | 0 | 0 | - | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | - | 412 | - | - | 423 | 298 | 298 | - | - | 550 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.8 | 14 | 0.9 | 0.1 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 298 | - | - | 412 | 423 | 550 | - | - |
| HCM Lane V/C Ratio | 0.201 | - | - | 0.106 | 0.057 | 0.022 | - | - |
| HCM Control Delay (s) | 20.1 | - | - | 14.8 | 14 | 11.7 | - | - |
| HCM Lane LOS | C | - | - | B | B | B | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | - | 0.4 | 0.2 | 0.1 | - | - |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBL | NBT | NBR | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 296 | 1451 | 131 | 60 | 72 | 1337 | 188 | 330 | 334 | 200 | 232 |
| Future Volume (vph) | 2 | 296 | 1451 | 131 | 60 | 72 | 1337 | 188 | 330 | 334 | 200 | 232 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.2 | 4.9 | | 4.2 |
| Lane Util. Factor | | 1.00 | 0.91 | | | 1.00 | 0.91 | | 1.00 | 0.95 | | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Frt | | 1.00 | 0.99 | | | 1.00 | 0.98 | | 1.00 | 0.94 | | 1.00 |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (prot) | | 1752 | 4973 | | | 1752 | 4943 | | 1752 | 3308 | | 1752 |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 |
| Satd. Flow (perm) | | 1752 | 4973 | | | 1752 | 4943 | | 1752 | 3308 | | 1752 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 2 | 318 | 1560 | 141 | 65 | 77 | 1438 | 202 | 355 | 359 | 215 | 249 |
| RTOR Reduction (vph) | 0 | 0 | 7 | 0 | 0 | 0 | 13 | 0 | 0 | 39 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 320 | 1694 | 0 | 0 | 142 | 1627 | 0 | 355 | 535 | 0 | 249 |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Prot | NA | | Prot |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 2 | | 1 |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 14.8 | 54.5 | | | 7.8 | 47.5 | | 15.8 | 26.9 | | 11.8 |
| Effective Green, g (s) | | 14.8 | 54.5 | | | 7.8 | 47.5 | | 15.8 | 26.9 | | 11.8 |
| Actuated g/C Ratio | | 0.12 | 0.45 | | | 0.06 | 0.40 | | 0.13 | 0.22 | | 0.10 |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 5.7 | | 4.2 | 4.9 | | 4.2 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 |
| Lane Grp Cap (vph) | | 216 | 2258 | | | 113 | 1956 | | 230 | 741 | | 172 |
| v/s Ratio Prot | | c0.18 | 0.34 | | | c0.08 | c0.33 | | c0.20 | c0.16 | | 0.14 |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 1.48 | 0.75 | | | 1.26 | 0.83 | | 1.54 | 0.72 | | 1.45 |
| Uniform Delay, d1 | | 52.6 | 27.1 | | | 56.1 | 32.7 | | 52.1 | 43.1 | | 54.1 |
| Progression Factor | | 1.00 | 1.00 | | | 1.36 | 0.42 | | 0.87 | 0.97 | | 1.00 |
| Incremental Delay, d2 | | 239.8 | 2.3 | | | 161.4 | 3.6 | | 264.6 | 3.4 | | 231.0 |
| Delay (s) | | 292.4 | 29.5 | | | 237.7 | 17.4 | | 310.2 | 45.4 | | 285.1 |
| Level of Service | | F | C | | | F | B | | F | D | | F |
| Approach Delay (s) | | | 71.1 | | | | 35.0 | | | 146.6 | | |
| Approach LOS | | | E | | | | C | | | F | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 79.6 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.02 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 94.4% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBT | SBR |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | 166 | 266 |
| Future Volume (vph) | 166 | 266 |
| Ideal Flow (vphpl) | 1900 | 1900 |
| Total Lost time (s) | 4.9 | |
| Lane Util. Factor | 0.95 | |
| Frpb, ped/bikes | 0.99 | |
| Flpb, ped/bikes | 1.00 | |
| Frt | 0.91 | |
| Flt Protected | 1.00 | |
| Satd. Flow (prot) | 3155 | |
| Flt Permitted | 1.00 | |
| Satd. Flow (perm) | 3155 | |
| Peak-hour factor, PHF | 0.93 | 0.93 |
| Adj. Flow (vph) | 178 | 286 |
| RTOR Reduction (vph) | 214 | 0 |
| Lane Group Flow (vph) | 250 | 0 |
| Confl. Peds. (#/hr) | | 1 |
| Turn Type | NA | |
| Protected Phases | 6 | |
| Permitted Phases | | |
| Actuated Green, G (s) | 22.9 | |
| Effective Green, g (s) | 22.9 | |
| Actuated g/C Ratio | 0.19 | |
| Clearance Time (s) | 4.9 | |
| Vehicle Extension (s) | 3.0 | |
| Lane Grp Cap (vph) | 602 | |
| v/s Ratio Prot | 0.08 | |
| v/s Ratio Perm | | |
| v/c Ratio | 0.42 | |
| Uniform Delay, d1 | 42.7 | |
| Progression Factor | 1.00 | |
| Incremental Delay, d2 | 0.5 | |
| Delay (s) | 43.1 | |
| Level of Service | D | |
| Approach Delay (s) | 127.6 | |
| Approach LOS | F | |

| Intersection Summary |
|---|

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 193 | 1580 | 181 | 2 | 176 | 1094 | 125 | 9 | 241 | 540 | 160 |
| Future Volume (vph) | 6 | 193 | 1580 | 181 | 2 | 176 | 1094 | 125 | 9 | 241 | 540 | 160 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | | | 4.2 | 5.3 | |
| Lane Util. Factor | | 1.00 | 0.91 | | | 1.00 | 0.91 | | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Flpb, ped/bikes | | 1.00 | 1.00 | | | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Frt | | 1.00 | 0.98 | | | 1.00 | 0.98 | | | 1.00 | 0.97 | |
| Flt Protected | | 0.95 | 1.00 | | | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1752 | 4951 | | | 1752 | 4951 | | | 1752 | 3385 | |
| Flt Permitted | | 0.95 | 1.00 | | | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1752 | 4951 | | | 1752 | 4951 | | | 1752 | 3385 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 6 | 201 | 1646 | 189 | 2 | 183 | 1140 | 130 | 9 | 251 | 562 | 167 |
| RTOR Reduction (vph) | 0 | 0 | 11 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 0 | 207 | 1824 | 0 | 0 | 185 | 1259 | 0 | 0 | 260 | 705 | 0 |
| Confl. Peds. (#/hr) | | | | 2 | | | | 2 | | | | |
| Turn Type | Prot | Prot | NA | | Prot | Prot | NA | | Prot | Prot | NA | |
| Protected Phases | 7 | 7 | 4 | | 3 | 3 | 8 | | 5 | 5 | 2 | |
| Permitted Phases | | | | | | | | | | | | |
| Actuated Green, G (s) | | 15.2 | 45.5 | | | 10.8 | 40.8 | | | 23.4 | 30.3 | |
| Effective Green, g (s) | | 15.2 | 45.5 | | | 10.8 | 40.8 | | | 23.4 | 30.3 | |
| Actuated g/C Ratio | | 0.13 | 0.38 | | | 0.09 | 0.34 | | | 0.19 | 0.25 | |
| Clearance Time (s) | | 4.2 | 5.7 | | | 4.2 | 6.0 | | | 4.2 | 5.3 | |
| Vehicle Extension (s) | | 3.0 | 3.0 | | | 3.0 | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 221 | 1877 | | | 157 | 1683 | | | 341 | 854 | |
| v/s Ratio Prot | | 0.12 | c0.37 | | | c0.11 | 0.25 | | | 0.15 | c0.21 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | | 0.94 | 0.97 | | | 1.18 | 0.75 | | | 0.76 | 0.83 | |
| Uniform Delay, d1 | | 51.9 | 36.6 | | | 54.6 | 35.0 | | | 45.7 | 42.4 | |
| Progression Factor | | 0.76 | 0.77 | | | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 28.9 | 10.0 | | | 127.8 | 3.1 | | | 9.7 | 6.6 | |
| Delay (s) | | 68.6 | 38.1 | | | 182.4 | 38.1 | | | 55.4 | 48.9 | |
| Level of Service | | E | D | | | F | D | | | E | D | |
| Approach Delay (s) | | | 41.2 | | | | 56.5 | | | | 50.6 | |
| Approach LOS | | | D | | | | E | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 49.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 19.7 |
| Intersection Capacity Utilization | 90.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Lane Configurations | | | | |
| Traffic Volume (vph) | 11 | 171 | 378 | 144 |
| Future Volume (vph) | 11 | 171 | 378 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.2 | 5.3 | 5.3 |
| Lane Util. Factor | | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1752 | 3505 | 1544 |
| Flt Permitted | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1752 | 3505 | 1544 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 11 | 178 | 394 | 150 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 124 |
| Lane Group Flow (vph) | 0 | 189 | 394 | 26 |
| Confl. Peds. (#/hr) | | | | 3 |
| Turn Type | Prot | Prot | NA | Perm |
| Protected Phases | 1 | 1 | 6 | |
| Permitted Phases | | | | 6 |
| Actuated Green, G (s) | | 14.0 | 20.9 | 20.9 |
| Effective Green, g (s) | | 14.0 | 20.9 | 20.9 |
| Actuated g/C Ratio | | 0.12 | 0.17 | 0.17 |
| Clearance Time (s) | | 4.2 | 5.3 | 5.3 |
| Vehicle Extension (s) | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 204 | 610 | 268 |
| v/s Ratio Prot | | c0.11 | 0.11 | |
| v/s Ratio Perm | | | | 0.02 |
| v/c Ratio | | 0.93 | 0.65 | 0.10 |
| Uniform Delay, d1 | | 52.5 | 46.1 | 41.6 |
| Progression Factor | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | | 42.5 | 2.4 | 0.2 |
| Delay (s) | | 95.0 | 48.5 | 41.8 |
| Level of Service | | F | D | D |
| Approach Delay (s) | | | 59.1 | |
| Approach LOS | | | E | |

| Intersection Summary |
|---|

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 192 | 637 | 2 | 1 | 655 | 286 | 0 | 4 | 2 | 228 | 1 | 315 |
| Future Volume (veh/h) | 192 | 637 | 2 | 1 | 655 | 286 | 0 | 4 | 2 | 228 | 1 | 315 |
| 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 | 209 | 692 | 2 | 1 | 712 | 311 | 0 | 4 | 2 | 248 | 1 | 342 |
| 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 | 515 | 738 | 2 | 468 | 691 | 585 | 0 | 9 | 4 | 309 | 1 | 275 |
| Arrive On Green | 0.29 | 0.40 | 0.40 | 0.26 | 0.37 | 0.37 | 0.00 | 0.01 | 0.01 | 0.17 | 0.17 | 0.17 |
| Sat Flow, veh/h | 1767 | 1849 | 5 | 1767 | 1856 | 1571 | 0 | 1167 | 583 | 1767 | 5 | 1569 |
| Grp Volume(v), veh/h | 209 | 0 | 694 | 1 | 712 | 311 | 0 | 0 | 6 | 248 | 0 | 343 |
| Grp Sat Flow(s),veh/h/ln | 1767 | 0 | 1855 | 1767 | 1856 | 1571 | 0 | 0 | 1751 | 1767 | 0 | 1573 |
| Q Serve(g_s), s | 11.4 | 0.0 | 43.1 | 0.0 | 44.7 | 18.6 | 0.0 | 0.0 | 0.4 | 16.2 | 0.0 | 21.0 |
| Cycle Q Clear(g_c), s | 11.4 | 0.0 | 43.1 | 0.0 | 44.7 | 18.6 | 0.0 | 0.0 | 0.4 | 16.2 | 0.0 | 21.0 |
| Prop In Lane | 1.00 | | 0.00 | 1.00 | | 1.00 | 0.00 | | 0.33 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 515 | 0 | 740 | 468 | 691 | 585 | 0 | 0 | 13 | 309 | 0 | 275 |
| V/C Ratio(X) | 0.41 | 0.00 | 0.94 | 0.00 | 1.03 | 0.53 | 0.00 | 0.00 | 0.45 | 0.80 | 0.00 | 1.25 |
| Avail Cap(c_a), veh/h | 515 | 0 | 828 | 468 | 691 | 585 | 0 | 0 | 321 | 309 | 0 | 275 |
| 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 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.1 | 0.0 | 34.6 | 32.4 | 37.7 | 29.5 | 0.0 | 0.0 | 59.3 | 47.5 | 0.0 | 49.5 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 20.9 | 0.0 | 42.2 | 3.4 | 0.0 | 0.0 | 22.4 | 14.0 | 0.0 | 137.3 |
| 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 | 4.8 | 0.0 | 22.6 | 0.0 | 27.2 | 7.3 | 0.0 | 0.0 | 0.3 | 8.2 | 0.0 | 18.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 34.7 | 0.0 | 55.5 | 32.4 | 79.8 | 32.9 | 0.0 | 0.0 | 81.7 | 61.5 | 0.0 | 186.8 |
| LnGrp LOS | C | A | E | C | F | C | A | A | F | E | A | F |
| Approach Vol, veh/h | | 903 | | | 1024 | | | 6 | | | 591 | |
| Approach Delay, s/veh | | 50.7 | | | 65.5 | | | 81.7 | | | 134.3 | |
| Approach LOS | | D | | | E | | | F | | | F | |

| Timer - Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 4.9 | 36.0 | 53.2 | | 25.9 | 39.2 | 50.0 | | | | |
| Change Period (Y+Rc), s | | 4.0 | 4.2 | * 5.3 | | 4.9 | 4.2 | * 5.3 | | | | |
| Max Green Setting (Gmax), s | | 22.0 | 5.0 | * 54 | | 21.0 | 13.9 | * 45 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.4 | 2.0 | 45.1 | | 23.0 | 13.4 | 46.7 | | | | |
| Green Ext Time (p_c), s | | 0.0 | 0.0 | 2.8 | | 0.0 | 0.0 | 0.0 | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | | 76.4 |
| HCM 6th LOS | | | E |

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB |
|---|---|---|---|
| Directions Served | R | R | UL |
| Maximum Queue (ft) | 53 | 73 | 87 |
| Average Queue (ft) | 25 | 22 | 30 |
| 95th Queue (ft) | 45 | 54 | 63 |
| Link Distance (ft) | 2579 | 214 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 150 |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 94 | 29 |
| Average Queue (ft) | 41 | 6 |
| 95th Queue (ft) | 64 | 26 |
| Link Distance (ft) | 1388 | 1244 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | T | TR | UL | T | T | TR | L | T | TR | L |
| Maximum Queue (ft) | 280 | 540 | 526 | 392 | 278 | 366 | 361 | 348 | 187 | 116 | 119 | 280 |
| Average Queue (ft) | 234 | 340 | 326 | 306 | 159 | 264 | 290 | 304 | 83 | 46 | 49 | 277 |
| 95th Queue (ft) | 328 | 516 | 476 | 409 | 287 | 387 | 403 | 411 | 142 | 81 | 98 | 294 |
| Link Distance (ft) | | 956 | 956 | 956 | | 278 | 278 | 278 | | 2455 | 2455 | |
| Upstream Blk Time (%) | | | | | 0 | 10 | 22 | 35 | | | | |
| Queuing Penalty (veh) | | | | | 0 | 66 | 141 | 227 | | | | |
| Storage Bay Dist (ft) | 180 | | | | 275 | | | | 180 | | | 180 |
| Storage Blk Time (%) | 55 | 23 | | | 0 | 11 | | | 0 | | | 87 |
| Queuing Penalty (veh) | 223 | 30 | | | 1 | 18 | | | 0 | | | 68 |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | TR |
| Maximum Queue (ft) | 1007 | 954 |
| Average Queue (ft) | 600 | 496 |
| 95th Queue (ft) | 966 | 940 |
| Link Distance (ft) | 1258 | 1258 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 4: Jensen Avenue & Project Driveway 1

| Movement | WB | WB | WB | SB |
|---|---|---|---|---|
| Directions Served | T | T | TR | R |
| Maximum Queue (ft) | 245 | 262 | 263 | 210 |
| Average Queue (ft) | 33 | 53 | 66 | 114 |
| 95th Queue (ft) | 138 | 172 | 197 | 208 |
| Link Distance (ft) | 208 | 208 | 208 | 176 |
| Upstream Blk Time (%) | 1 | 1 | 2 | 23 |
| Queuing Penalty (veh) | 6 | 3 | 15 | 0 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 5: Jensen Avenue & Project Driveway 2

| Movement | EB | EB | WB | SB |
|---|---|---|---|---|
| Directions Served | L | T | TR | R |
| Maximum Queue (ft) | 98 | 115 | 20 | 138 |
| Average Queue (ft) | 39 | 4 | 1 | 41 |
| 95th Queue (ft) | 77 | 38 | 7 | 84 |
| Link Distance (ft) | | 208 | 259 | 324 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 100 | | | |
| Storage Blk Time (%) | 0 | 0 | | |
| Queuing Penalty (veh) | 0 | 0 | | |

## Intersection: 6: Jensen Avenue & Project Driveway 3

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 53 |
| Average Queue (ft) | 11 |
| 95th Queue (ft) | 36 |
| Link Distance (ft) | 213 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | T | TR | UL | T | T | TR | UL | T | TR | UL |
| Maximum Queue (ft) | 158 | 286 | 336 | 438 | 260 | 506 | 451 | 461 | 237 | 222 | 301 | 222 |
| Average Queue (ft) | 74 | 110 | 143 | 179 | 194 | 300 | 292 | 290 | 103 | 122 | 155 | 155 |
| 95th Queue (ft) | 134 | 213 | 270 | 327 | 297 | 442 | 430 | 415 | 175 | 193 | 249 | 221 |
| Link Distance (ft) | | 1718 | 1718 | 1718 | | 2520 | 2520 | 2520 | | 2551 | 2551 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | | 140 | | | | 180 | | | 240 |
| Storage Blk Time (%) | | 0 | | | 47 | 33 | | | 1 | 2 | | 0 |
| Queuing Penalty (veh) | | 0 | | | 247 | 68 | | | 2 | 2 | | 0 |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | R |
| Maximum Queue (ft) | 193 | 250 | 160 |
| Average Queue (ft) | 117 | 127 | 69 |
| 95th Queue (ft) | 184 | 204 | 133 |
| Link Distance (ft) | 3861 | 3861 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 120 |
| Storage Blk Time (%) | | 10 | 3 |
| Queuing Penalty (veh) | | 20 | 5 |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 74 | 29 |
| Average Queue (ft) | 35 | 7 |
| 95th Queue (ft) | 56 | 27 |
| Link Distance (ft) | 2234 | 1450 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | EB | WB | WB | WB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | T | R | L | TR |
| Maximum Queue (ft) | 160 | 225 | 16 | 326 | 51 | 186 | 171 |
| Average Queue (ft) | 79 | 96 | 1 | 128 | 19 | 74 | 59 |
| 95th Queue (ft) | 123 | 204 | 5 | 264 | 46 | 148 | 112 |
| Link Distance (ft) | | 2594 | | 2572 | | | 1160 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | 415 | | 250 | | 250 | 250 | |
| Storage Blk Time (%) | | | | 2 | | | |
| Queuing Penalty (veh) | | | | 2 | | | |

## Intersection: 10: Bend

| Movement | WB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 956 |
| Average Queue (ft) | 32 |
| 95th Queue (ft) | 315 |
| Link Distance (ft) | 956 |
| Upstream Blk Time (%) | 0 |
| Queuing Penalty (veh) | 1 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Zone Summary

Zone wide Queuing Penalty: 1145

## Intersection: 1: Chestnut Avenue & Florence Avenue

| Movement | EB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | R | R | UL | T | TR | L | T | TR |
| Maximum Queue (ft) | 53 | 54 | 71 | 30 | 54 | 28 | 55 | 75 |
| Average Queue (ft) | 19 | 21 | 25 | 1 | 3 | 7 | 3 | 5 |
| 95th Queue (ft) | 43 | 46 | 54 | 10 | 20 | 25 | 21 | 32 |
| Link Distance (ft) | 2579 | 214 | | 3861 | 3861 | | 3870 | 3870 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | | 150 | | | 150 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 2: Maple Avenue & Grove Avenue

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 99 | 113 |
| Average Queue (ft) | 44 | 25 |
| 95th Queue (ft) | 75 | 68 |
| Link Distance (ft) | 1388 | 1244 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | EB | EB | EB | EB | B10 | B10 | B10 | WB | WB | WB | WB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | T | TR | T | T | T | UL | T | T | TR | L |
| Maximum Queue (ft) | 280 | 1055 | 971 | 956 | 1073 | 1064 | 951 | 277 | 359 | 365 | 369 | 280 |
| Average Queue (ft) | 275 | 692 | 553 | 395 | 229 | 207 | 89 | 228 | 284 | 291 | 306 | 278 |
| 95th Queue (ft) | 302 | 1208 | 985 | 755 | 764 | 714 | 475 | 339 | 389 | 385 | 391 | 288 |
| Link Distance (ft) | | 956 | 956 | 956 | 1613 | 1613 | 1613 | | 277 | 277 | 277 | |
| Upstream Blk Time (%) | | 37 | 1 | 0 | | | | 16 | 34 | 26 | 34 | |
| Queuing Penalty (veh) | | 0 | 0 | 0 | | | | 0 | 178 | 137 | 182 | |
| Storage Bay Dist (ft) | 180 | | | | | | | 275 | | | | 180 |
| Storage Blk Time (%) | 80 | 23 | | | | | | 17 | 32 | | | 87 |
| Queuing Penalty (veh) | 388 | 68 | | | | | | 74 | 42 | | | 145 |

## Intersection: 3: Maple Avenue & Jensen Avenue

| Movement | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | T | TR | L | T | TR |
| Maximum Queue (ft) | 1480 | 1444 | 280 | 1265 | 1251 |
| Average Queue (ft) | 1011 | 675 | 274 | 827 | 691 |
| 95th Queue (ft) | 1728 | 1491 | 301 | 1430 | 1324 |
| Link Distance (ft) | 2455 | 2455 | | 1258 | 1258 |
| Upstream Blk Time (%) | | | | 0 | 0 |
| Queuing Penalty (veh) | | | | 1 | 0 |
| Storage Bay Dist (ft) | | | 180 | | |
| Storage Blk Time (%) | 1 | | 88 | 0 | |
| Queuing Penalty (veh) | 2 | | 73 | 1 | |

## Intersection: 4: Jensen Avenue & Project Driveway 1

| Movement | WB | WB | WB | SB |
|---|---|---|---|---|
| Directions Served | T | T | TR | R |
| Maximum Queue (ft) | 187 | 189 | 199 | 175 |
| Average Queue (ft) | 45 | 50 | 53 | 102 |
| 95th Queue (ft) | 136 | 157 | 162 | 206 |
| Link Distance (ft) | 208 | 208 | 208 | 160 |
| Upstream Blk Time (%) | | 0 | 0 | 45 |
| Queuing Penalty (veh) | | 0 | 0 | 0 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 5: Jensen Avenue & Project Driveway 2

| Movement | EB | SB |
|---|---|---|
| Directions Served | L | R |
| Maximum Queue (ft) | 49 | 90 |
| Average Queue (ft) | 16 | 48 |
| 95th Queue (ft) | 43 | 77 |
| Link Distance (ft) | | 328 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | 100 | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 6: Jensen Avenue & Project Driveway 3

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 68 |
| Average Queue (ft) | 23 |
| 95th Queue (ft) | 52 |
| Link Distance (ft) | 199 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | UL | T | T | TR | UL | T | T | TR | UL | T | TR | UL |
| Maximum Queue (ft) | 238 | 406 | 504 | 543 | 260 | 471 | 432 | 322 | 300 | 371 | 297 | 263 |
| Average Queue (ft) | 124 | 196 | 232 | 263 | 206 | 261 | 250 | 221 | 185 | 200 | 218 | 140 |
| 95th Queue (ft) | 208 | 328 | 378 | 426 | 276 | 397 | 370 | 301 | 281 | 284 | 294 | 211 |
| Link Distance (ft) | | 1718 | 1718 | 1718 | | 2520 | 2520 | 2520 | | 2552 | 2552 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | | 140 | | | | 180 | | | 240 |
| Storage Blk Time (%) | 0 | 2 | | | 55 | 28 | | | 15 | 14 | | 1 |
| Queuing Penalty (veh) | 0 | 5 | | | 201 | 50 | | | 40 | 34 | | 2 |

## Intersection: 7: Chestnut Avenue & Jensen Avenue

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | R |
| Maximum Queue (ft) | 173 | 159 | 91 |
| Average Queue (ft) | 104 | 114 | 44 |
| 95th Queue (ft) | 149 | 158 | 72 |
| Link Distance (ft) | 3861 | 3861 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 120 |
| Storage Blk Time (%) | | 8 | |
| Queuing Penalty (veh) | | 12 | |

## Intersection: 8: Maple Avenue & Annadale Avenue

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 62 | 71 |
| Average Queue (ft) | 27 | 24 |
| 95th Queue (ft) | 48 | 58 |
| Link Distance (ft) | 2234 | 1450 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 9: Private Driveway/Maple Avenue & North Avenue

| Movement | EB | EB | WB | WB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | T | R | LTR | L | TR |
| Maximum Queue (ft) | 312 | 374 | 374 | 370 | 31 | 256 | 254 |
| Average Queue (ft) | 150 | 148 | 232 | 63 | 6 | 149 | 128 |
| 95th Queue (ft) | 272 | 303 | 356 | 167 | 25 | 244 | 238 |
| Link Distance (ft) | | 2594 | 2572 | | 753 | | 1160 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | 415 | | | 250 | | 250 | |
| Storage Blk Time (%) | | | 8 | | | 1 | 1 |
| Queuing Penalty (veh) | | | 24 | | | 3 | 1 |

## Network Summary

Network wide Queuing Penalty: 1664

# Appendix K: Signal Warrants

## Signal Warrant Analysis

### *Figure 4C-101 (CA). Traffic Signal Warrants Worksheet*

| DIST | CO | RTE | KPM |
|---|---|---|---|
| 006 | FRESNO | n/a | n/a |

COUNT DATE 1/14/2020
CALC JG DATE 1/17/2020
CHK CS DATE 1/17/2020

Major St: **Chestnut Avenue** Critical Approach Speed 45 MPH
Minor St: **Florence Avenue** Critical Approach Speed 55 MPH

Critical speed of major street traffic > 64 km/h (40 mph)................ ☑
or } RURAL (R)
In built up area of isolated community of < 10,000 population .......... ☐

☐ URBAN (U)

### WARRANT 1 - Eight Hour Vehicular Volume

**(Condition A or Condition B or combination of A and B must be satisfied)**

**Condition A - Minimum Vehicle Volume**

**100% SATISFIED** YES ☐ NO ☑
**80 % SATISFIED** YES ☐ NO ☑

| APPROACH LANES | MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS) 1 U | 1 R | 2 or More U | 2 or More R | 7:00 a.m. | 12:00 p.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. | 6:00 p.m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Both Approaches Major Street | 500 | 350 | 600 | 420 | 1039 | 882 | 976 | 1192 | 1192 | 1380 | 1407 | 974 |
| | (400) | (280) | (480) | (336) | 1039 | 882 | 976 | 1192 | 1192 | 1380 | 1407 | 974 |
| Highest Approach Minor Street | 150 | 105 | 200 | 140 | 56 | 23 | 36 | 61 | 37 | 40 | 56 | 42 |
| | (120) | (84) | (160) | (112) | 56 | 23 | 36 | 61 | 37 | 40 | 56 | 42 |

**Condition B - Interruption of Continuous Traffic**

**100% SATISFIED** YES ☐ NO ☑
**80 % SATISFIED** YES ☐ NO ☑

| APPROACH LANES | MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS) 1 U | 1 R | 2 or More U | 2 or More R | 7:00 a.m. | 12:00 p.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. | 6:00 p.m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Both Approaches Major Street | 750 | 525 | 900 | 630 | 1039 | 882 | 976 | 1192 | 1192 | 1380 | 1407 | 974 |
| | (600) | (420) | (720) | (504) | 1039 | 882 | 976 | 1192 | 1192 | 1380 | 1407 | 974 |
| Highest Approach Minor Street | 75 | 53 | 100 | 70 | 56 | 23 | 36 | 61 | 37 | 40 | 56 | 42 |
| | (60) | (42) | (80) | (56) | 56 | 23 | 36 | 61 | 37 | 40 | 56 | 42 |

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

**Combination of Conditions A & B** **SATISFIED** **YES** ☐ **NO** ☑

| REQUIREMENT | WARRANT | FULFILLED |
|---|---|---|
| TWO WARRANTS SATISFIED 80% | 1. MINIMUM VEHICULAR VOLUME | Yes ☐ No ☑ |
| | 2. INTERRUPTION OF CONTINUOUS TRAFFIC | |

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**Signal Warrant Analysis**

*Figure 4C-101 (CA). Traffic Signal Warrants Worksheet*

| | | | |
|---|---|---|---|
| 006 | FRESNO | n/a | n/a |
| DIST | CO | RTE | KPM |

COUNT DATE 1/14/2020
CALC JG DATE 1/17/2020
CHK CS DATE 1/17/2020

Major St: **Maple Avenue** — Critical Approach Speed 40 MPH
Minor St: **Grove Avenue** — Critical Approach Speed 25 MPH

Critical speed of major street traffic > 64 km/h (40 mph)................. ☐
or } RURAL (R)
In built up area of isolated community of < 10,000 population .......... ☐
☑ URBAN (U)

## WARRANT 1 - Eight Hour Vehicular Volume

**(Condition A or Condition B or combination of A and B must be satisfied)**

**Condition A - Minimum Vehicle Volume**

**100% SATISFIED** YES ☐ NO ☑
**80 % SATISFIED** YES ☐ NO ☑

| APPROACH LANES | 1 U | 1 R | 2 or More U | 2 or More R | 6:00 a.m. | 7:00 a.m. | 11:00 a.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Both Approaches Major Street | 500 | 350 | 600 | 420 | 419 | 596 | 428 | 467 | 552 | 640 | 720 | 612 |
| | (400) | (280) | (480) | (336) | 419 | 596 | 428 | 467 | 552 | 640 | 720 | 612 |
| Highest Approach Minor Street | 150 | 105 | 200 | 140 | 48 | 88 | 38 | 43 | 49 | 54 | 74 | 73 |
| | (120) | (84) | (160) | (112) | 48 | 88 | 38 | 43 | 49 | 54 | 74 | 73 |

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS); Hour

**Condition B - Interruption of Continuous Traffic**

**100% SATISFIED** YES ☐ NO ☑
**80 % SATISFIED** YES ☐ NO ☑

| APPROACH LANES | 1 U | 1 R | 2 or More U | 2 or More R | 6:00 a.m. | 7:00 a.m. | 11:00 a.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Both Approaches Major Street | 750 | 525 | 900 | 630 | 419 | 596 | 428 | 467 | 552 | 640 | 720 | 612 |
| | (600) | (420) | (720) | (504) | 419 | 596 | 428 | 467 | 552 | 640 | 720 | 612 |
| Highest Approach Minor Street | 75 | 53 | 100 | 70 | 48 | 88 | 38 | 43 | 49 | 54 | 74 | 73 |
| | (60) | (42) | (80) | (56) | 48 | 88 | 38 | 43 | 49 | 54 | 74 | 73 |

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS); Hour

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

**Combination of Conditions A & B** **SATISFIED** YES ☐ NO ☑

| REQUIREMENT | WARRANT | | FULFILLED |
|---|---|---|---|
| TWO WARRANTS SATISFIED 80% | 1. MINIMUM VEHICULAR VOLUME | | Yes ☐ No ☑ |
| | 2. INTERRUPTION OF CONTINUOUS TRAFFIC | | |

## Signal Warrant Analysis

*Figure 4C-101 (CA). Traffic Signal Warrants Worksheet*

| 006 | FRESNO | n/a | n/a |
|---|---|---|---|
| DIST | CO | RTE | KPM |

COUNT DATE 1/14/2020
CALC JG DATE 1/17/2020
CHK CS DATE 1/17/2020

Major St: **Maple Avenue** — Critical Approach Speed 40 MPH
Minor St: **Annadale Avenue** — Critical Approach Speed 40 MPH

Critical speed of major street traffic > 64 km/h (40 mph)................. ☐
or } RURAL (R)
In built up area of isolated community of < 10,000 population .......... ☐
☑ URBAN (U)

### WARRANT 1 - Eight Hour Vehicular Volume

**(Condition A or Condition B or combination of A and B must be satisfied)**

**Condition A - Minimum Vehicle Volume**

**100% SATISFIED** YES ☐ NO ☑
**80 % SATISFIED** YES ☐ NO ☑

| APPROACH LANES | MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS) 1 U | 1 R | 2 or More U | 2 or More R | 7:00 a.m. | 8:00 a.m. | 11:00 a.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. | Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Both Approaches Major Street | 500 | 350 | 600 | 420 | 309 | 268 | 313 | 282 | 361 | 361 | 367 | 289 | |
| | (400) | (280) | (480) | (336) | 309 | 268 | 313 | 282 | 361 | 361 | 367 | 289 | |
| Highest Approach Minor Street | 150 | 105 | 200 | 140 | 83 | 63 | 58 | 51 | 64 | 54 | 27 | 29 | |
| | (120) | (84) | (160) | (112) | 83 | 63 | 58 | 51 | 64 | 54 | 27 | 29 | |

**Condition B - Interruption of Continuous Traffic**

**100% SATISFIED** YES ☐ NO ☑
**80 % SATISFIED** YES ☐ NO ☑

| APPROACH LANES | MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS) 1 U | 1 R | 2 or More U | 2 or More R | 7:00 a.m. | 8:00 a.m. | 11:00 a.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. | Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Both Approaches Major Street | 750 | 525 | 900 | 630 | 309 | 268 | 313 | 282 | 361 | 361 | 367 | 289 | |
| | (600) | (420) | (720) | (504) | 309 | 268 | 313 | 282 | 361 | 361 | 367 | 289 | |
| Highest Approach Minor Street | 75 | 53 | 100 | 70 | 83 | 63 | 58 | 51 | 64 | 54 | 27 | 29 | |
| | (60) | (42) | (80) | (56) | 83 | 63 | 58 | 51 | 64 | 54 | 27 | 29 | |

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

**Combination of Conditions A & B** **SATISFIED** YES ☐ NO ☑

| REQUIREMENT | WARRANT | | FULFILLED |
|---|---|---|---|
| TWO WARRANTS SATISFIED 80% | 1. MINIMUM VEHICULAR VOLUME | | Yes ☐ No ☑ |
| | 2. INTERRUPTION OF CONTINUOUS TRAFFIC | | |

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## Signal Warrant Analysis

### *Figure 4C-101 (CA). Traffic Signal Warrants Worksheet*

| | | | | |
|---|---|---|---|---|
| 006 | FRESNO | n/a | n/a | |
| DIST | CO | RTE | KPM | |

| | | | |
|---|---|---|---|
| COUNT DATE | | | 1/14/2020 |
| CALC | JG | DATE | 1/20/2020 |
| CHK | CS | DATE | 1/20/2020 |

Major St: **North Avenue** — Critical Approach Speed 45 MPH

Minor St: **Maple Avenue** — Critical Approach Speed 40 MPH

Critical speed of major street traffic > 64 km/h (40 mph)................. ☑ or RURAL (R)

In built up area of isolated community of < 10,000 population .......... ☐

☐ URBAN (U)

### WARRANT 1 - Eight Hour Vehicular Volume

**(Condition A or Condition B or combination of A and B must be satisfied)**

**Condition A - Minimum Vehicle Volume**

**100% SATISFIED** YES ☑ NO ☐

**80 % SATISFIED** YES ☑ NO ☐

| APPROACH LANES | 1 U | 1 R | 2 or More U | 2 or More R | 7:00 a.m. | 10:00 a.m. | 12:00 p.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Both Approaches Major Street | 500 | 350 | 600 | 420 | 591 | 603 | 558 | 546 | 692 | 682 | 743 | 633 |
| | (400) | (280) | (480) | (336) | 591 | 603 | 558 | 546 | 692 | 682 | 743 | 633 |
| Highest Approach Minor Street | 150 | 105 | 200 | 140 | 174 | 122 | 153 | 153 | 178 | 201 | 188 | 105 |
| | (120) | (84) | (160) | (112) | 174 | 122 | 153 | 153 | 178 | 201 | 188 | 105 |

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS); Hour

**Condition B - Interruption of Continuous Traffic**

**100% SATISFIED** YES ☑ NO ☐

**80 % SATISFIED** YES ☑ NO ☐

| APPROACH LANES | 1 U | 1 R | 2 or More U | 2 or More R | 7:00 a.m. | 10:00 a.m. | 12:00 p.m. | 1:00 p.m. | 2:00 p.m. | 3:00 p.m. | 4:00 p.m. | 5:00 p.m. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Both Approaches Major Street | 750 | 525 | 900 | 630 | 591 | 603 | 558 | 546 | 692 | 682 | 743 | 633 |
| | (600) | (420) | (720) | (504) | 591 | 603 | 558 | 546 | 692 | 682 | 743 | 633 |
| Highest Approach Minor Street | 75 | 53 | 100 | 70 | 174 | 122 | 153 | 153 | 178 | 201 | 188 | 105 |
| | (60) | (42) | (80) | (56) | 174 | 122 | 153 | 153 | 178 | 201 | 188 | 105 |

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS); Hour

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

**Combination of Conditions A & B** **SATISFIED** YES ☑ NO ☐

| REQUIREMENT | WARRANT | | FULFILLED |
|---|---|---|---|
| TWO WARRANTS SATISFIED 80% | 1. MINIMUM VEHICULAR VOLUME | | Yes ☑ No ☐ |
| | 2. INTERRUPTION OF CONTINUOUS TRAFFIC | | |

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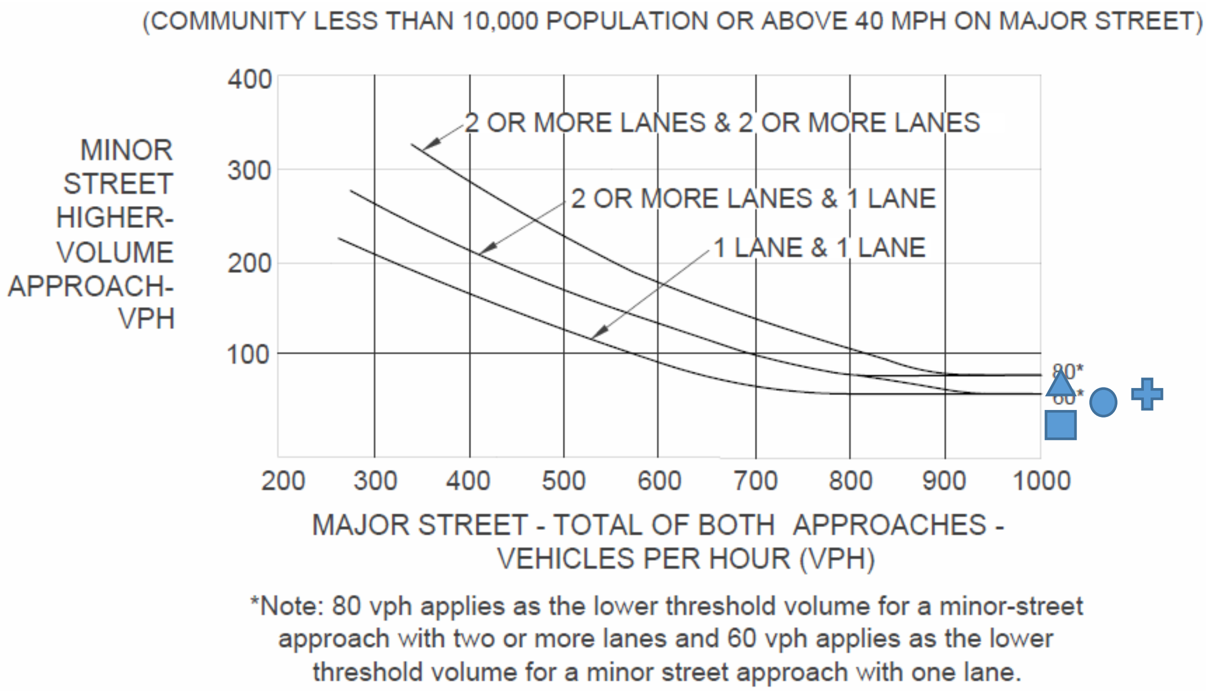
# Warrant 2: Four-Hour Vehicular Volume (Rural)

**Existing Traffic Conditions**
**1. Chestnut Avenue / Florence Avenue**




| | *1 Lane & 1 Lane* | *2 or More Lanes & 1 Lane* | *2 or More Lanes & 2 or More Lanes* | ▲ *2:00 PM Volume* | ■ *3:00 PM Volume* | ● *4:00 PM Volume* | ✚ *5:00 PM Volume* |
|---|---|---|---|---|---|---|---|
| *Major Street (Total of Both Approaches)* | ☐ | ☒ | ☐ | 1192 | 1192 | 1380 | 1407 |
| *Minor Street (Higher Volume Approach)* | | | | 61 | 37 | 40 | 56 |

**Satisfied:** ☐ **Yes** ☒ **No**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014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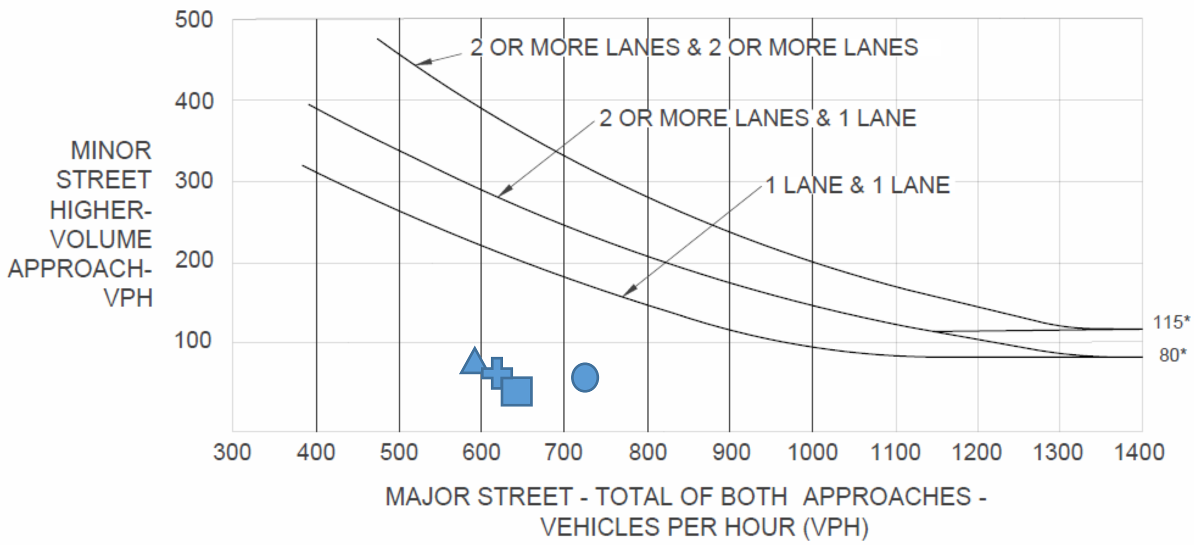
# Warrant 2: Four-Hour Vehicular Volume (Urban)

**Existing Traffic Conditions**
**2. Maple Avenue / Grove Avenue**




*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

| | *1 Lane & 1 Lane* | *2 or More Lanes & 1 Lane* | *2 or More Lanes & 2 or More Lanes* | ▲ *7:00 AM Volume* | ■ *3:00 PM Volume* | ● *4:00 PM Volume* | ✚ *5:00 PM Volume* |
|---|---|---|---|---|---|---|---|
| ***Major Street (Total of Both Approaches)*** | ☐ | ☒ | ☐ | 596 | 640 | 720 | 612 |
| ***Minor Street (Higher Volume Approach)*** | | | | 88 | 54 | 74 | 73 |

**Satisfied:** ☐ **Yes** ☒ **No**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

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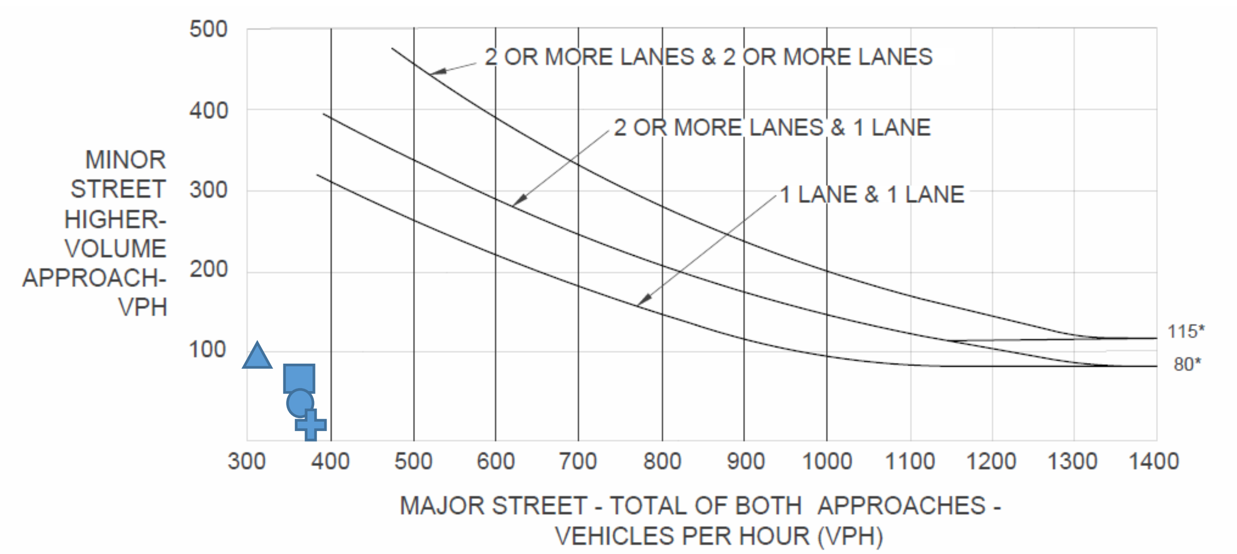
*Fresno, CA 93704*
*(559) 570-8991*

# Warrant 2: Four-Hour Vehicular Volume (Urban)

**Existing Traffic Conditions**
**8. Maple Avenue / Annadale Avenue**




*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

| | *1 Lane & 1 Lane* | *2 or More Lanes & 1 Lane* | *2 or More Lanes & 2 or More Lanes* | *7:00 AM Volume* | *2:00 PM Volume* | *3:00 PM Volume* | *4:00 PM Volume* |
|---|---|---|---|---|---|---|---|
| ***Major Street (Total of Both Approaches)*** | ☐ | ☒ | ☐ | 309 | 361 | 361 | 367 |
| ***Minor Street (Higher Volume Approach)*** | | | | 83 | 64 | 54 | 27 |

**Satisfied:** ☐ **Yes** ☒ **No**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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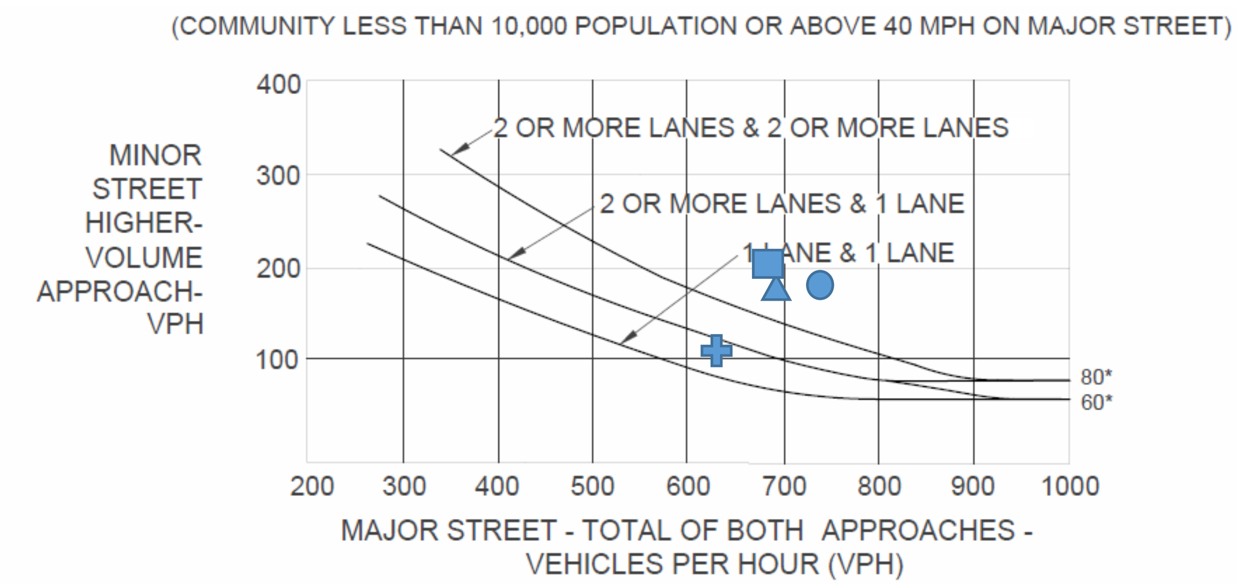
# Warrant 2: Four-Hour Vehicular Volume (Rural)

**Existing Traffic Conditions**
**9. Maple Avenue / North Avenue**




*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

| | *1 Lane & 1 Lane* | *2 or More Lanes & 1 Lane* | *2 or More Lanes & 2 or More Lanes* | ▲ *2:00 PM Volume* | ■ *3:00 PM Volume* | ● *4:00 PM Volume* | ✚ *5:00 PM Volume* |
|---|---|---|---|---|---|---|---|
| *Major Street (Total of Both Approaches)* | ☒ | ☐ | ☐ | 692 | 682 | 743 | 633 |
| *Minor Street (Higher Volume Approach)* | | | | 178 | 201 | 188 | 105 |

**Satisfied:** ☒ **Yes** ☐ **No**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

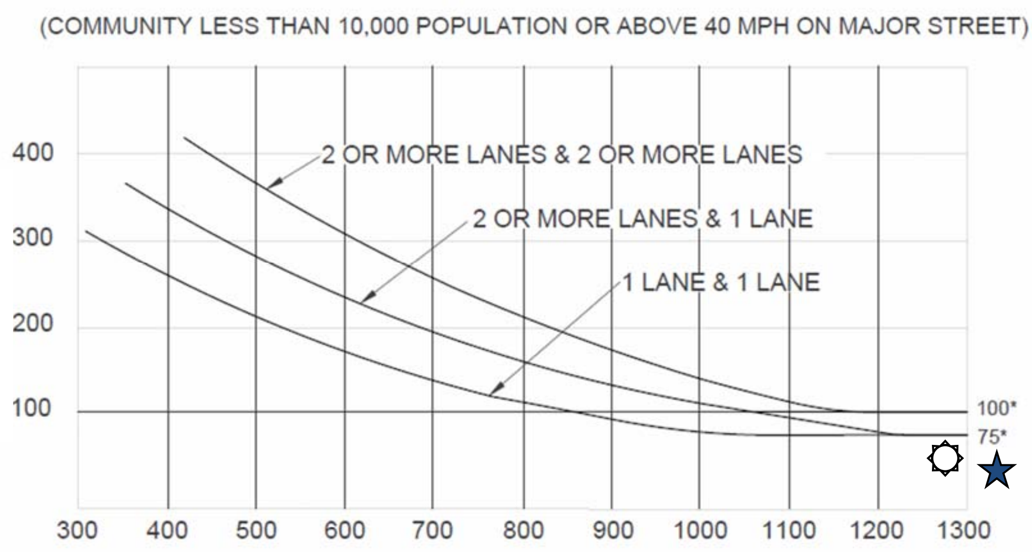
# Warrant 3: Peak Hour (Rural)

**Existing plus Project Traffic Conditions**
**1. Chestnut Avenue / Florence Avenue**
**AM (PM) Peak Hour**

**Florence Avenue**

**Highest Approach Volume =**

**55 (43) VPH**




**Chestnut Avenue Total of Both Approaches =**

**1273 (1537) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

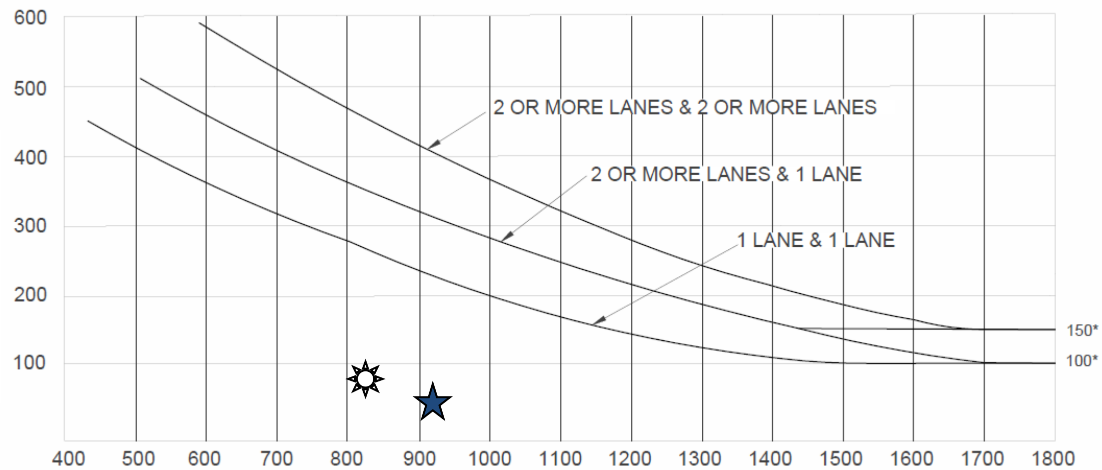
★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

# Warrant 3: Peak Hour (Urban)

**Existing plus Project Traffic Conditions**
**2. Maple Avenue / Grove Avenue**
**AM (PM) Peak Hour**

**Grove Avenue**
**Highest Approach Volume =**
**79 (49) VPH**




**Maple Avenue Total of Both Approaches =**

**823 (913) VPH**

*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.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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Part 4: Highway Traffic Signals
November 7, 2014

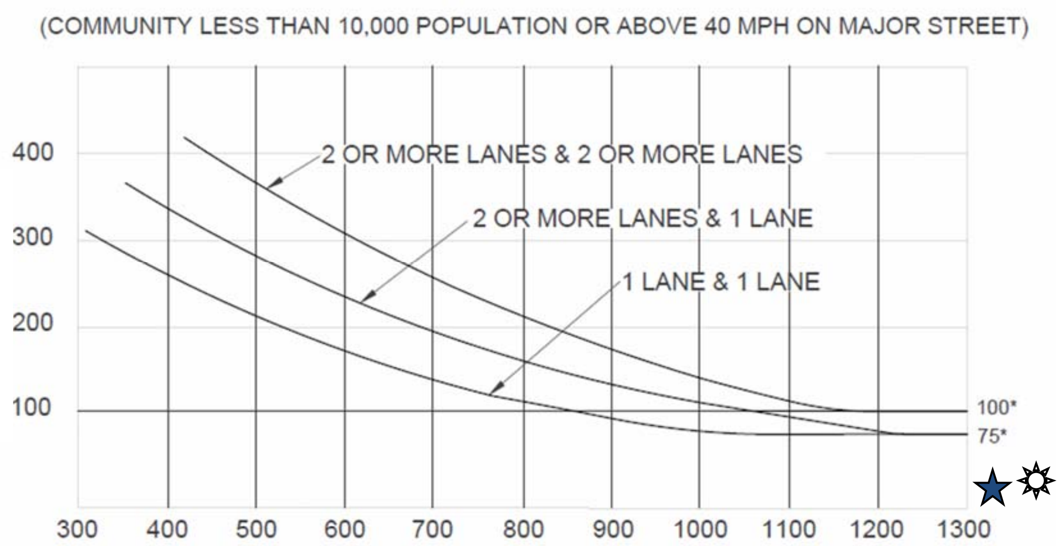
# Warrant 3: Peak Hour (Rural)

**Existing plus Project Traffic Conditions**
**4. Project Driveway 1 / Jensen Avenue**
**AM (PM) Peak Hour**

**Project Driveway 1**

**Highest Approach Volume =**

**34 (21) VPH**




**Jensen Avenue Total of Both Approaches =**

**1949 (1924) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

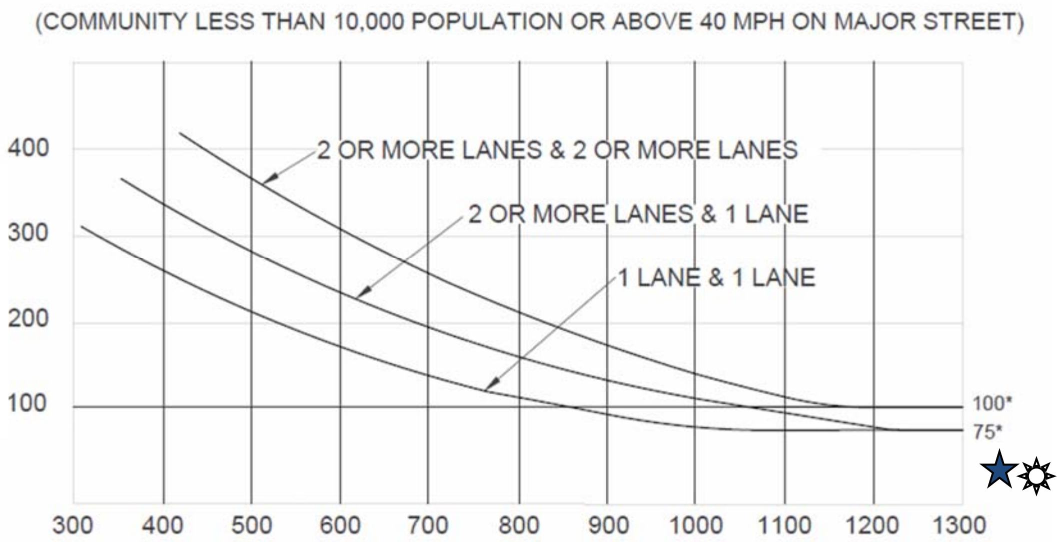
## Warrant 3: Peak Hour (Rural)

**Existing plus Project Traffic Conditions**
**5. Project Driveway 2 / Jensen Avenue**
**AM (PM) Peak Hour**

**Project Driveway 2**

**Highest Approach Volume =**

**33 (36) VPH**




**Jensen Avenue Total of Both Approaches =**

**1967 (1909) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

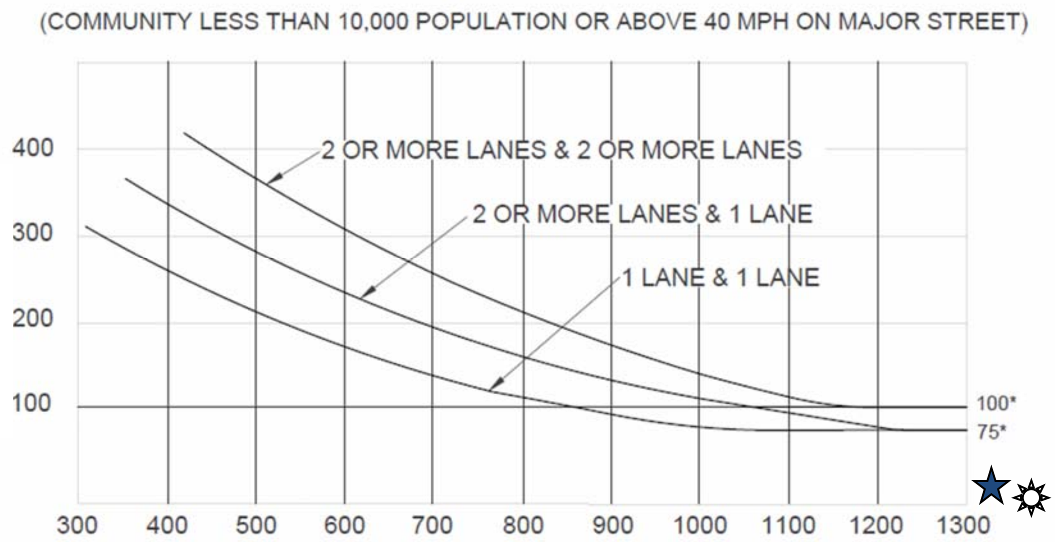
## Warrant 3: Peak Hour (Rural)

**Existing plus Project Traffic Conditions**
**6. Project Driveway 3 / Jensen Avenue**
**AM (PM) Peak Hour**

**Project Driveway 3**

**Highest Approach Volume =**

**2 (13) VPH**




**Jensen Avenue Total of Both Approaches =**

**1920 (1854) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
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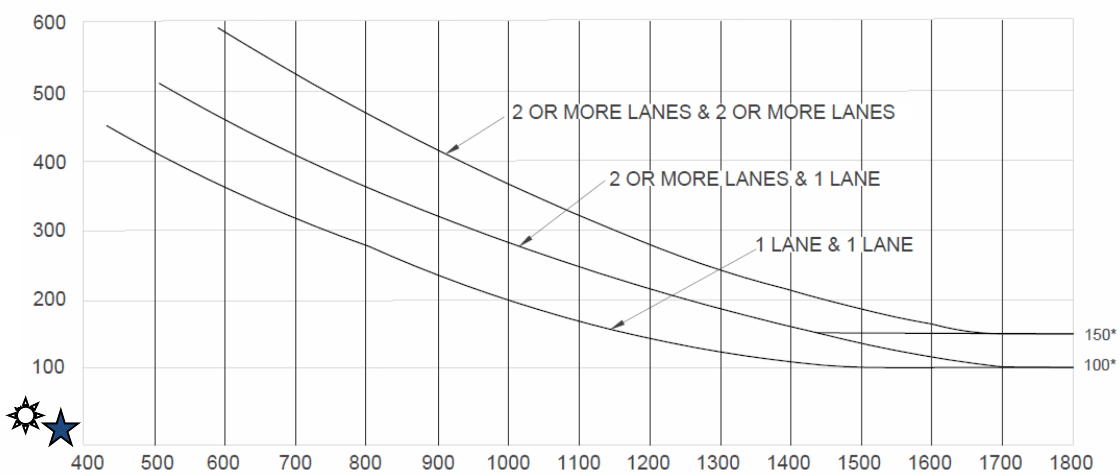
# Warrant 3: Peak Hour (Urban)

**Existing plus Project Traffic Conditions**
**8. Maple Avenue / Annadale Avenue**
**AM (PM) Peak Hour**

**Annadale Avenue**
**Highest Approach Volume =**
**33 (18) VPH**




**Maple Avenue Total of Both Approaches =**
**289 (325) VPH**

*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.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

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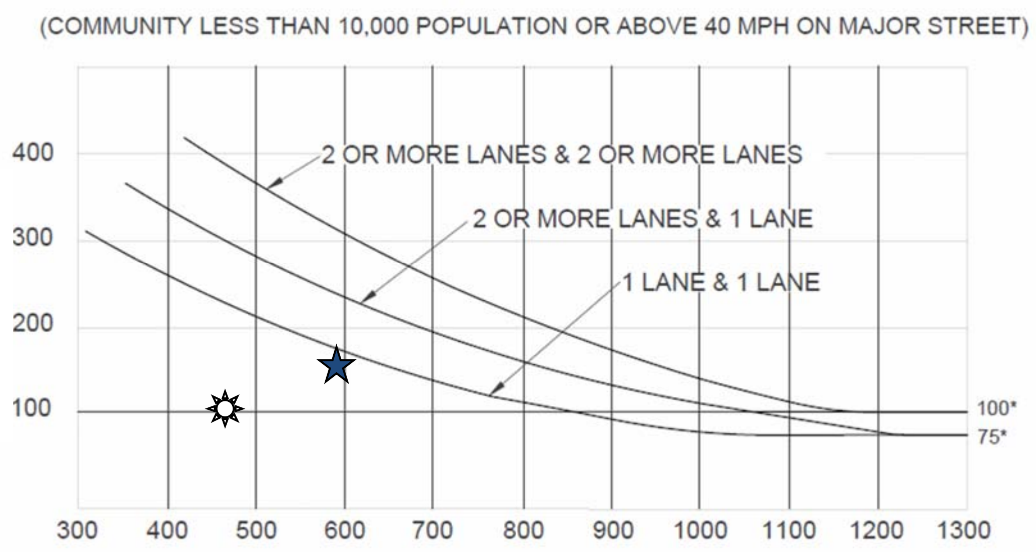
## Warrant 3: Peak Hour (Rural)

**Existing plus Project Traffic Conditions**
**9. Maple Avenue / North Avenue**
**AM (PM) Peak Hour**

**Maple Avenue Highest Approach Volume = 101 (152) VPH**




**North Avenue Total of Both Approaches = 460 (594) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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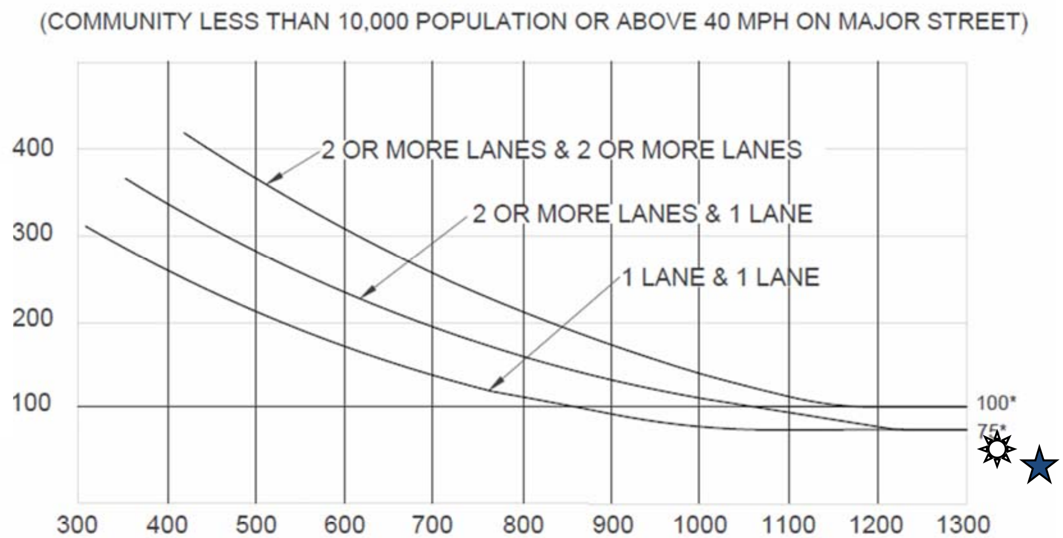
# Warrant 3: Peak Hour (Rural)

**Near Term plus Project Traffic Conditions**
**1. Chestnut Avenue / Florence Avenue**
**AM (PM) Peak Hour**

**Florence Avenue**
**Highest Approach Volume =**
**57 (44) VPH**




**Chestnut Avenue Total of Both Approaches =**
**1366 (1607) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**
★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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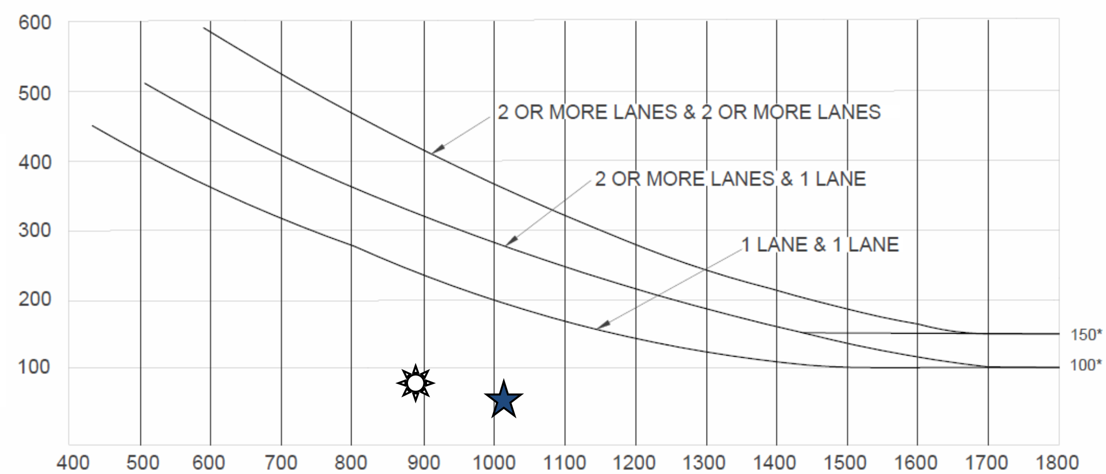
# Warrant 3: Peak Hour (Urban)

**Near Term plus Project Traffic Conditions**
**2. Maple Avenue / Grove Avenue**
**AM (PM) Peak Hour**

**Grove Avenue**
**Highest Approach Volume =**
**85 (51) VPH**




**Maple Avenue Total of Both Approaches =**
**889 (1016) VPH**

*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.

☼ **AM Peak Hour – Signal Warrant is Not Met**
★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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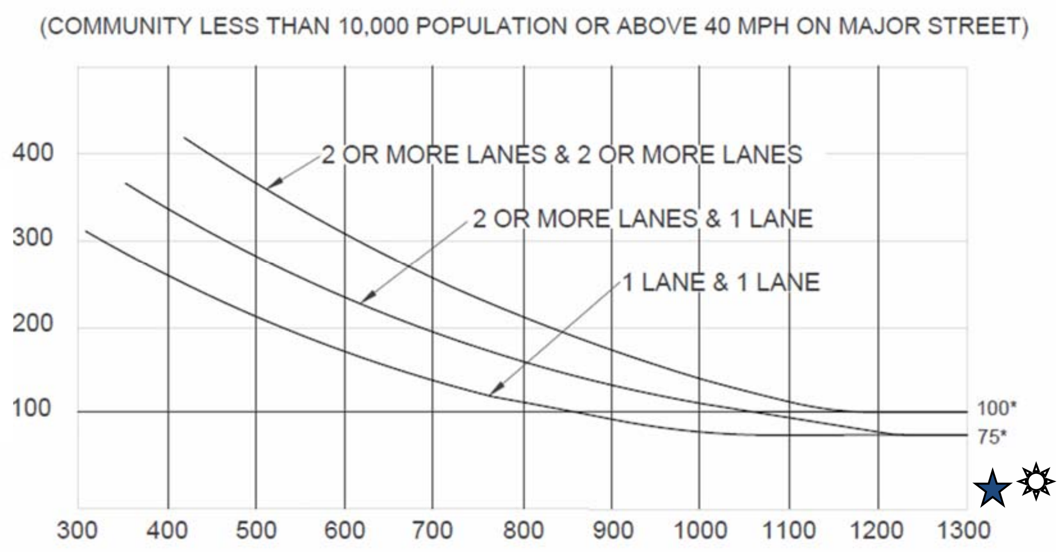
## Warrant 3: Peak Hour (Rural)

**Near Term plus Project Traffic Conditions**
**4. Project Driveway 1 / Jensen Avenue**
**AM (PM) Peak Hour**

**Project Driveway 1**

**Highest Approach Volume =**

**34 (21) VPH**




**Jensen Avenue Total of Both Approaches =**

**2167 (2107) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

**AM Peak Hour – Signal Warrant is Not Met**

**PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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## Warrant 3: Peak Hour (Rural)

**Near Term plus Project Traffic Conditions**
**5. Project Driveway 2 / Jensen Avenue**
**AM (PM) Peak Hour**


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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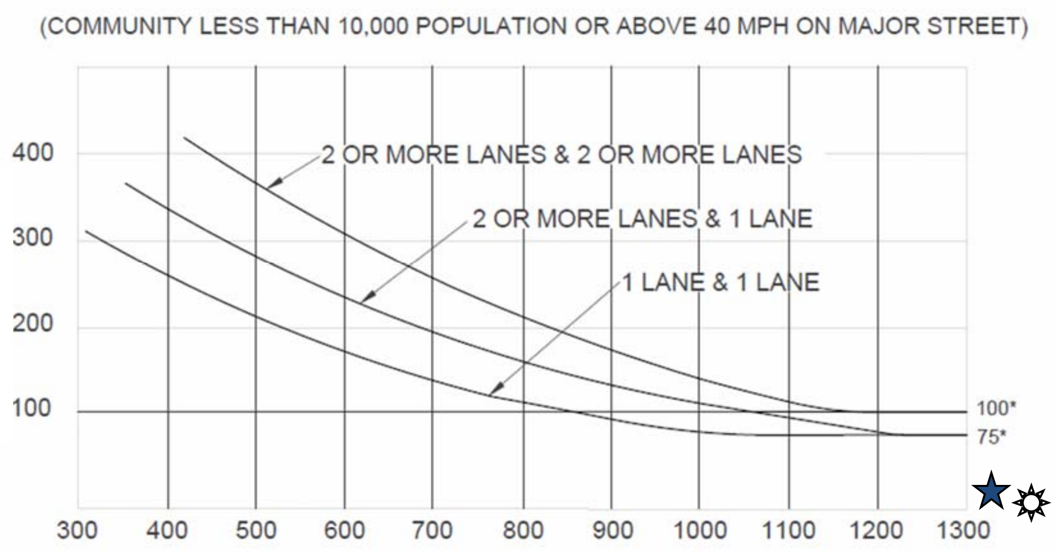
## Warrant 3: Peak Hour (Rural)

**Near Term plus Project Traffic Conditions**
**6. Project Driveway 3 / Jensen Avenue**
**AM (PM) Peak Hour**

**Project Driveway 3**

**Highest Approach Volume =**

**2 (13) VPH**




**Jensen Avenue Total of Both Approaches =**

**2138 (2037) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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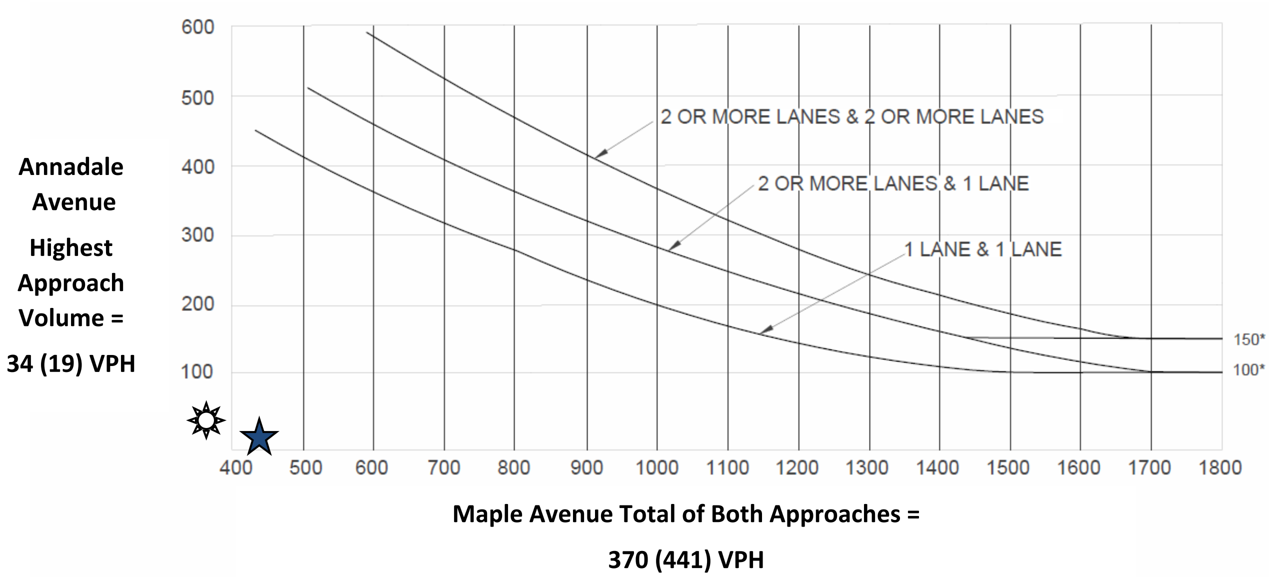
## Warrant 3: Peak Hour (Urban)

**Near Term plus Project Traffic Conditions**
**8. Maple Avenue / Annadale Avenue**
**AM (PM) 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.

**AM Peak Hour – Signal Warrant is Not Met**

**PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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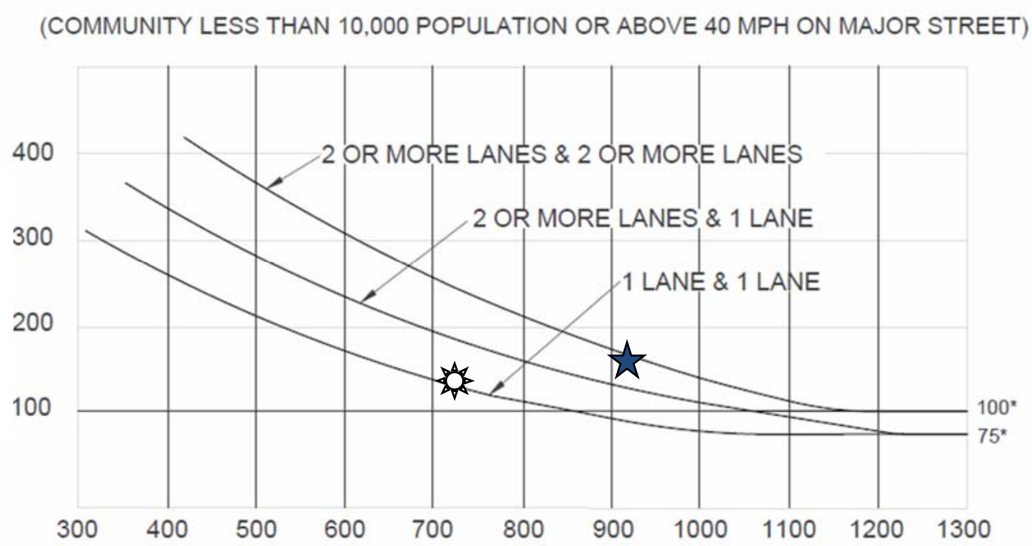
## Warrant 3: Peak Hour (Rural)

**Near Term plus Project Traffic Conditions**
**9. Maple Avenue / North Avenue**
**AM (PM) Peak Hour**

**Maple Avenue**

**Highest Approach Volume =**

**132 (162) VPH**




**North Avenue Total of Both Approaches =**

**722 (915) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

**AM Peak Hour – Signal Warrant is Met**

**PM Peak Hour – Signal Warrant is Met**

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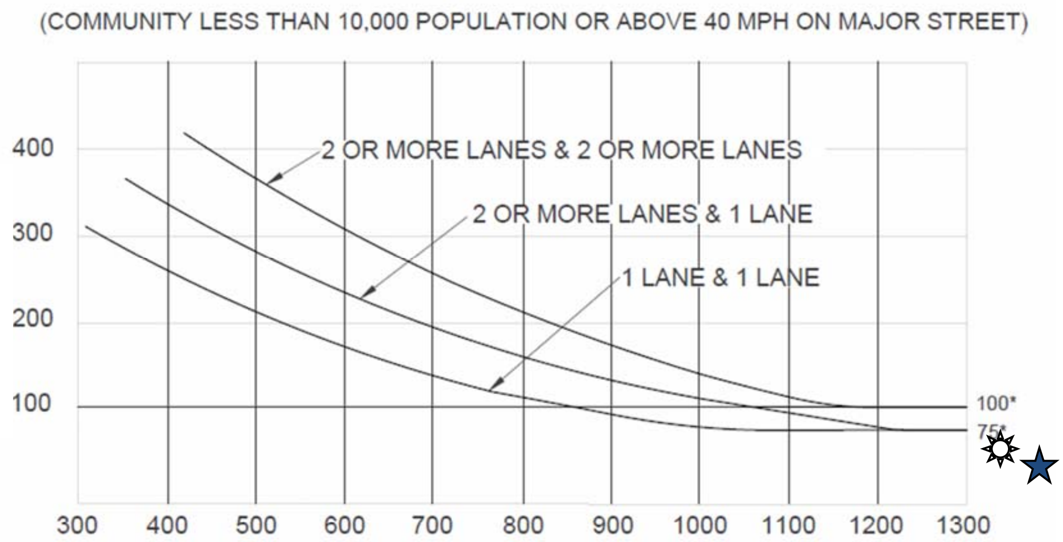
# Warrant 3: Peak Hour (Rural)

**Cumulative Year 2035 No Project Traffic Conditions**
**1. Chestnut Avenue / Florence Avenue**
**AM (PM) Peak Hour**

**Florence Avenue**
**Highest Approach Volume =**
**57 (44) VPH**




**Chestnut Avenue Total of Both Approaches =**
**2090 (2278) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**
★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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Part 4: Highway Traffic Signals
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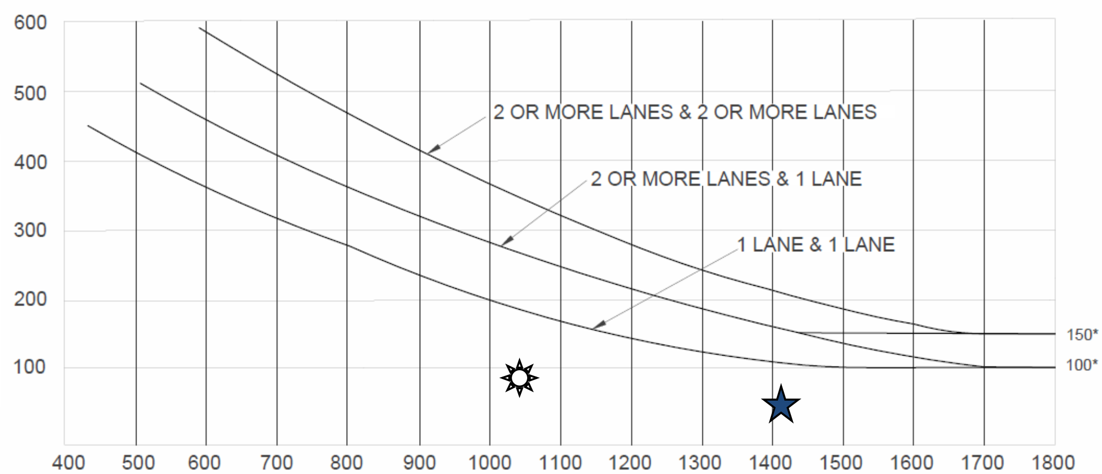
# Warrant 3: Peak Hour (Urban)

**Cumulative Year 2035 No Project Traffic Conditions**
**2. Maple Avenue / Grove Avenue**
**AM (PM) Peak Hour**

**Grove Avenue**
**Highest Approach Volume =**
**85 (51) VPH**




**Maple Avenue Total of Both Approaches =**

**1045 (1405) VPH**

*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.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

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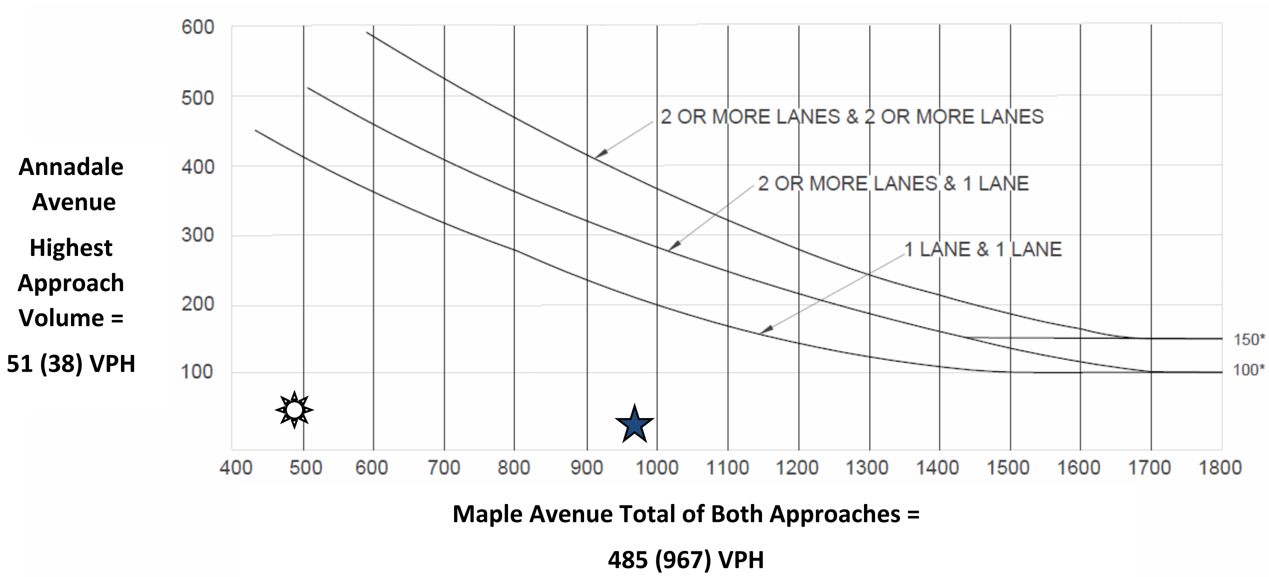
## Warrant 3: Peak Hour (Urban)

**Cumulative Year 2035 No Project Traffic Conditions**
**8. Maple Avenue / Annadale Avenue**
**AM (PM) 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.

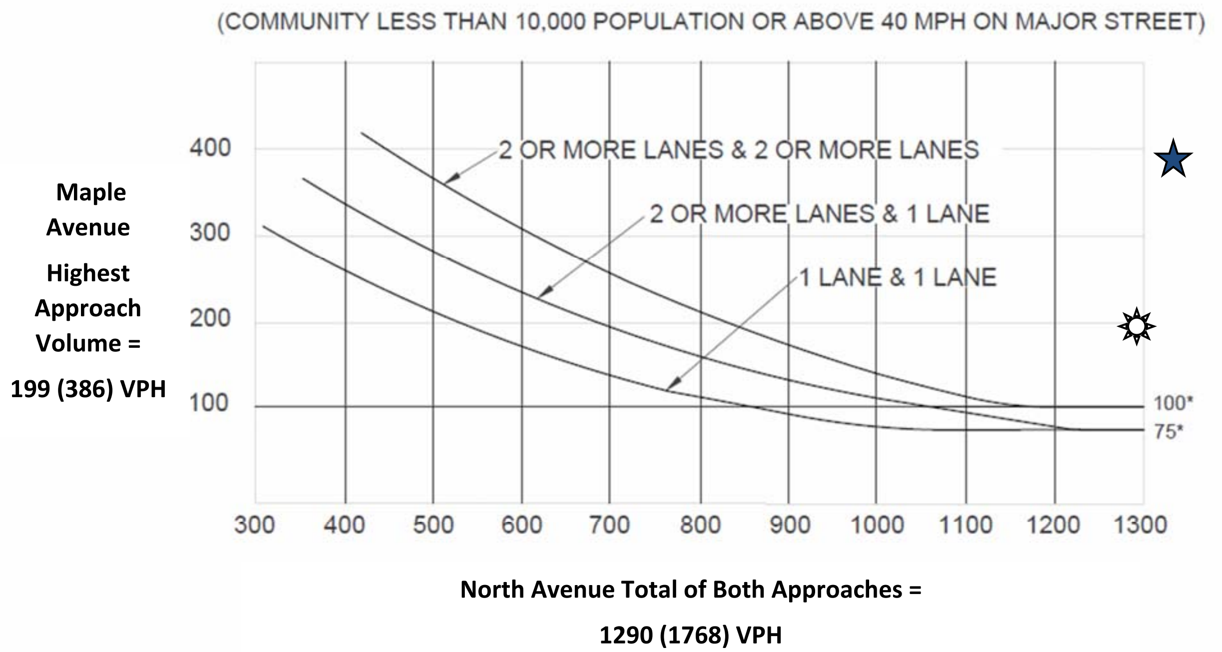
☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

# Warrant 3: Peak Hour (Rural)

**Cumulative Year 2035 No Project Traffic Conditions**
**9. Maple Avenue / North Avenue**
**AM (PM) Peak Hour**




*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Met**

★ **PM Peak Hour – Signal Warrant is Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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Part 4: Highway Traffic Signals
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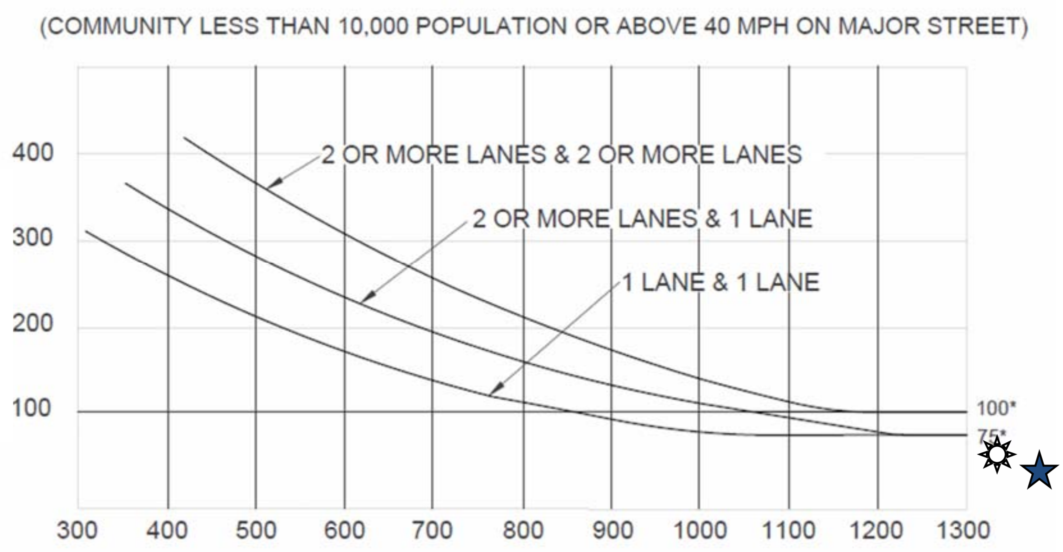
# Warrant 3: Peak Hour (Rural)

**Cumulative Year 2035 plus Project Traffic Conditions**
**1. Chestnut Avenue / Florence Avenue**
**AM (PM) Peak Hour**

**Florence Avenue Highest Approach Volume = 57 (44) VPH**




**Chestnut Avenue Total of Both Approaches =**

**2141 (2311) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

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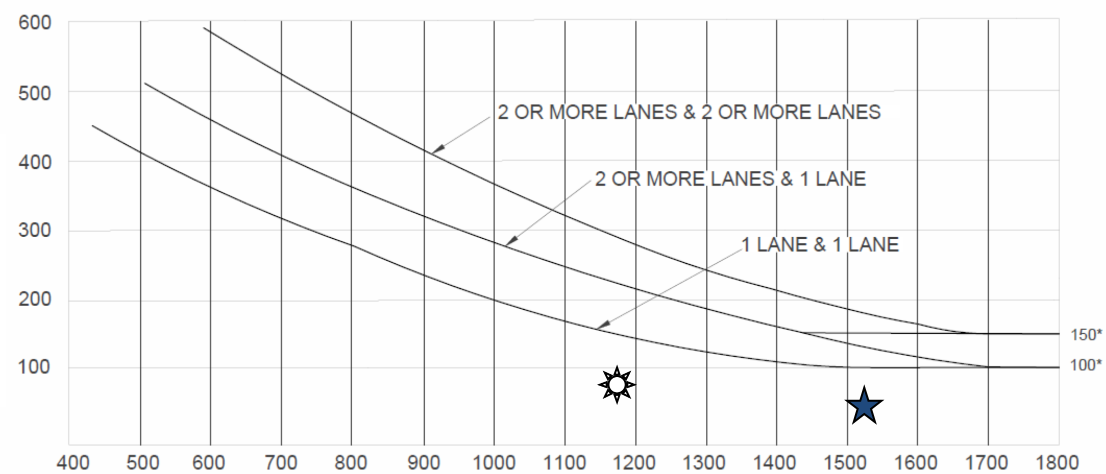
# Warrant 3: Peak Hour (Urban)

**Cumulative Year 2035 plus Project Traffic Conditions**
**2. Maple Avenue / Grove Avenue**
**AM (PM) Peak Hour**

**Grove Avenue Highest Approach Volume = 85 (51) VPH**




**Maple Avenue Total of Both Approaches = 1174 (1520) VPH**

*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.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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Part 4: Highway Traffic Signals
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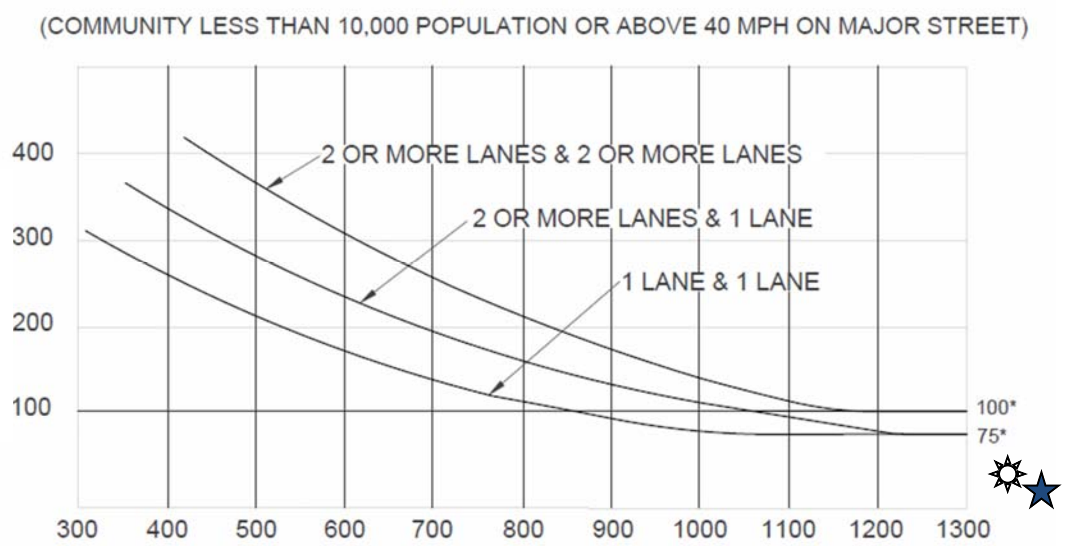
# Warrant 3: Peak Hour (Rural)

**Cumulative Year 2035 plus Project Traffic Conditions**
**4. Project Driveway 1 / Jensen Avenue**
**AM (PM) Peak Hour**

**Project Driveway 1**

**Highest Approach Volume =**

**34 (21) VPH**




**Jensen Avenue Total of Both Approaches =**

**3417 (3478) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
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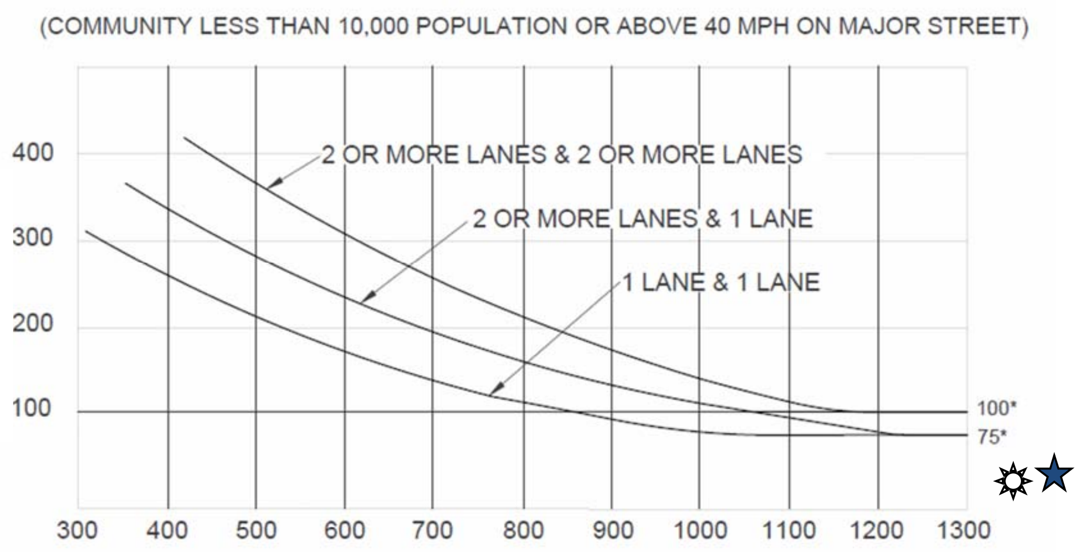
## Warrant 3: Peak Hour (Rural)

**Cumulative Year 2035 plus Project Traffic Conditions**
**5. Project Driveway 2 / Jensen Avenue**
**AM (PM) Peak Hour**

**Project Driveway 2**

**Highest Approach Volume =**

**33 (36) VPH**




**Jensen Avenue Total of Both Approaches =**

**3416 (3456) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

**AM Peak Hour – Signal Warrant is Not Met**

**PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

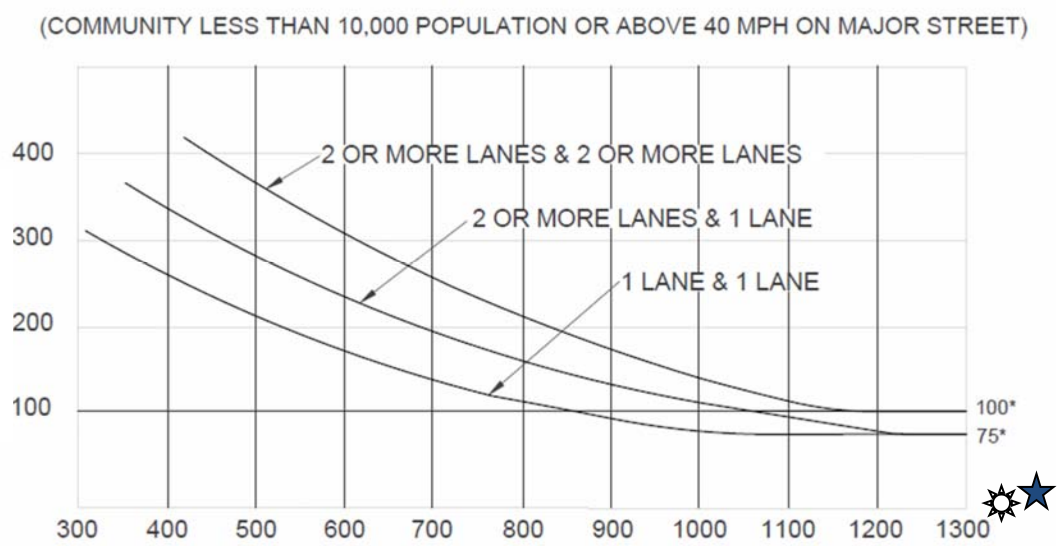
## Warrant 3: Peak Hour (Rural)

**Cumulative Year 2035 plus Project Traffic Conditions**
**6. Project Driveway 3 / Jensen Avenue**
**AM (PM) Peak Hour**

**Project Driveway 3**

**Highest Approach Volume =**

**2 (13) VPH**




**Jensen Avenue Total of Both Approaches =**

**3369 (3401) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

☼ **AM Peak Hour – Signal Warrant is Not Met**

★ **PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

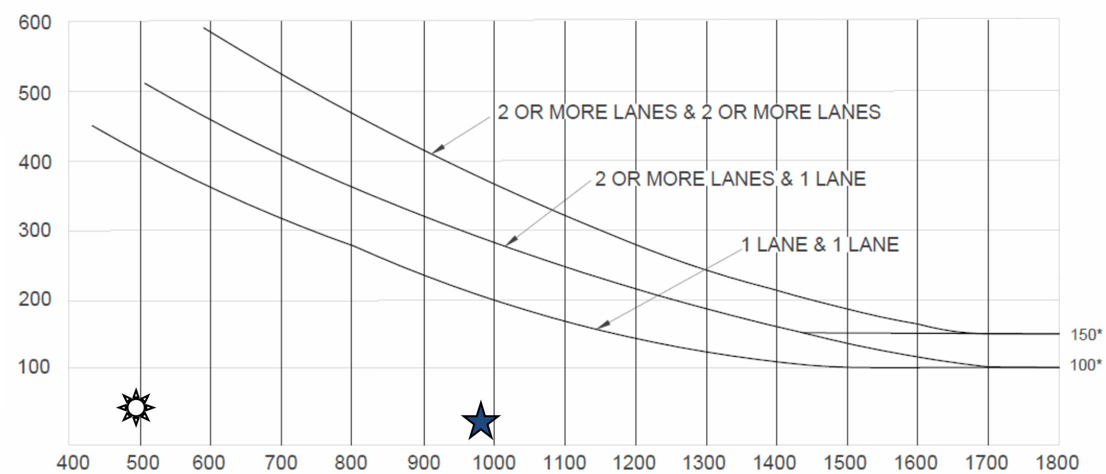
# Warrant 3: Peak Hour (Urban)

**Cumulative Year 2035 plus Project Traffic Conditions**
**8. Maple Avenue / Annadale Avenue**
**AM (PM) Peak Hour**

**Annadale Avenue**

**Highest Approach Volume =**

**51 (38) VPH**




**Maple Avenue Total of Both Approaches =**

**497 (974) VPH**

*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.

**AM Peak Hour – Signal Warrant is Not Met**

**PM Peak Hour – Signal Warrant is Not Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

## Warrant 3: Peak Hour (Rural)

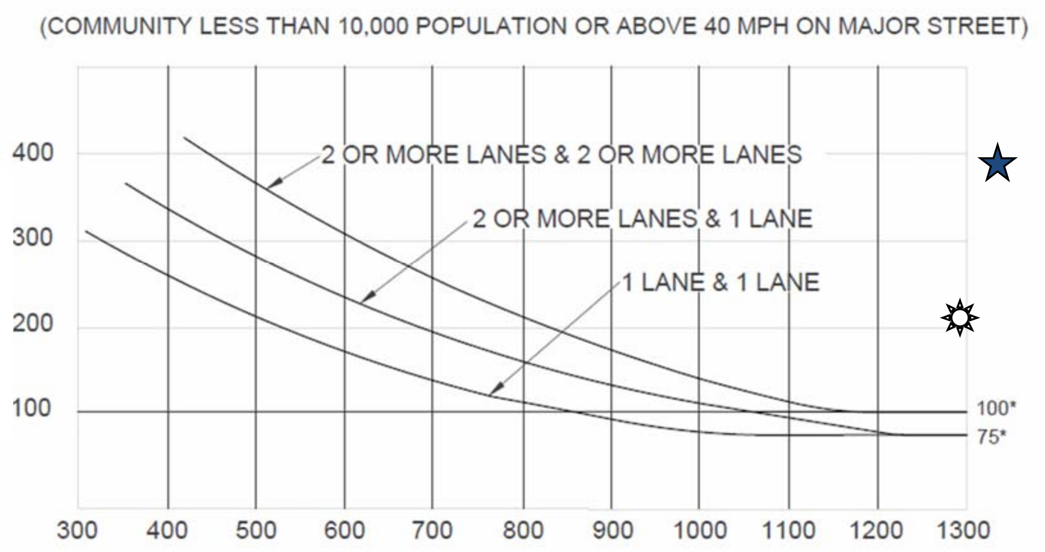
**Cumulative Year 2035 plus Project Traffic Conditions**

**9. Maple Avenue / North Avenue**

**AM (PM) Peak Hour**

**Maple Avenue Highest Approach Volume =**

**203 (387) VPH**




**North Avenue Total of Both Approaches =**

**1293 (1773) VPH**

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

**AM Peak Hour – Signal Warrant is Met**

**PM Peak Hour – Signal Warrant is Met**

Source: California Manual of Uniform Traffic Control Devices (CA MUTCD 2014 Edition)
Chapter 4C: Traffic Control Signal Needs Studies
Part 4: Highway Traffic Signals
November 7, 2014

January 28, 2021

Mrs. Jill Gormley
Traffic Engineer
City of Fresno
2600 Fresno Street
Fresno, CA 93721-3616

Via Email Only: Jill.Gormley@fresno.gov

***Subject: Revised Traffic Impact Analysis Addendum No. 2.***

Dear Mrs. Gormley,

JLB Traffic Engineering, Inc. (JLB) has prepared a letter in support of the Traffic Impact Analysis (TIA) Report prepared by JLB hereby referred to as the TIA Report for the proposed BDM Builders Mixed-Use Development (Project) located on the northeast corner of Maple Avenue and Jensen Avenue in the City of Fresno. Since the preparation of the TIA Report, BDM Builders has been working to secure users for the Project site. As a result, the Project is now slightly different than what was analyzed in the TIA Report. The purpose of the letter is to evaluate the potential changes in traffic generation and determine whether these would justify a revision to the TIA Report. The Latest Project Site Plan is presented in Exhibit A. Additionally, the City of Fresno has requested that an updated Vehicle Miles Traveled (VMT) output be reran by Fresno COG. This Revised Traffic Impact Analysis Addendum No. 2 also includes the VMT output for each of the three primary types of land uses (residential, non-retail commercial, and commercial retail). As a result, this Addendum No. 2 serves as a replacement of the Project Trip Generation section and the complete VMT Analysis section of the TIA report.

### *Project Description*

The Project proposes an integrated mixed-use development of a 12.18-acre site. The mixed-use development will include a gasoline/service station with convenience market (16 fueling positions), a 2,866 square-foot fast-food restaurant with drive-through window, a 5,225 high-turnover (sit-down) restaurant, 32,900 square feet of shopping center, a 1,600 square-foot coffee/donut shop with drive-through window, a 11,700 square-foot medical-dental office building, a 6,000 square-foot walk-in bank, a 9,400 square-foot small office building, 151 units of multifamily housing (4-story), and a 4,000 square-foot day care. As noted in the TIA Report the Project will undergo a General Plan Amendment with the City of Fresno to modify 5.90 acres of Light Industrial, 2.15 acres of Community Commercial and 3.53 acres of Residential (RM-2) to 3.50 acres of Light Industrial, 5.36 acres of Community Commercial and 3.38 acres of Residential (RM-3).

### *Trip Generation*

Trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE).

Table I presents the total trip generation of the latest Project Site Plan with trip generation rates for Gasoline/Service Station with Convenience Market, Fast-Food Restaurant with Drive-Through Window, High-Turnover (Sit-Down) Restaurant, Shopping Center, Coffee/Donut Shop with Drive-Through Window, Medical-Dental Office Building, Walk-in Bank, Small Office Building, Multifamily Housing (Mid-Rise), and Day Care Center. While the ITE Trip Generation Manual does not provide a weekday daily rate for a Walk-in Bank, JLB utilized the weekday daily rate for a Drive-in Bank as a conservative measure. At buildout, the latest Project Site Plan is estimated to generate a maximum of 9,947 daily trips, 689AM peak hour trips and 809 PM peak hour total trips (before internal capture and pass-by trip reductions are taken into account).

***Table I: Trip Generation - Latest Project Site Plan***

| *Land Use (ITE Code)* | *Size* | *Unit* | *Daily* | | *AM (7-9) Peak Hour* | | | | | | *PM (4-6) Peak Hour* | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | *Rate* | *Total* | *Trip Rate* | *In %* | *Out %* | *In* | *Out* | *Total* | *Trip Rate* | *In %* | *Out %* | *In* | *Out* | *Total* |
| Gasoline/Service Station with Convenience Market (945) | 16 | f.p. | 205.36 | 3,286 | 12.47 | 51 | 49 | 102 | 98 | 200 | 13.99 | 51 | 49 | 114 | 110 | 224 |
| Fast-Food Restaurant with Drive-Through Window (934) | 2.866 | k.s.f. | 470.95 | 1,350 | 40.19 | 51 | 49 | 59 | 56 | 115 | 32.67 | 52 | 48 | 49 | 45 | 94 |
| High-Turnover (Sit-Down) Restaurant (932) | 5.225 | k.s.f. | 112.18 | 586 | 9.94 | 55 | 45 | 29 | 23 | 52 | 9.77 | 62 | 38 | 32 | 19 | 51 |
| Shopping Center (820) | 32.900 | k.s.f. | 37.75 | 1,242 | 0.94 | 62 | 38 | 19 | 12 | 31 | 3.81 | 48 | 52 | 60 | 65 | 125 |
| Coffee/Donut Shop with Drive-Through Window (937) | 1.600 | k.s.f. | 820.38 | 1,313 | 88.99 | 51 | 49 | 72 | 70 | 142 | 43.38 | 50 | 50 | 34 | 35 | 69 |
| Medical-Dental Office Building (720) | 11.700 | k.s.f. | 34.80 | 407 | 2.78 | 78 | 22 | 26 | 7 | 33 | 3.46 | 28 | 72 | 11 | 29 | 40 |
| Walk-in Bank (911) | 6.000 | k.s.f. | 100.03 | 600 | 0.00 | 0 | 0 | 0 | 0 | 0 | 12.13 | 44 | 56 | 32 | 41 | 73 |
| Small Office Building (712) | 9.400 | k.s.f. | 16.19 | 152 | 1.92 | 83 | 18 | 15 | 3 | 18 | 2.45 | 32 | 68 | 7 | 16 | 23 |
| Multifamily Housing (Mid-Rise) (221) | 150 | d.u. | 5.44 | 816 | 0.36 | 26 | 74 | 14 | 40 | 54 | 0.44 | 61 | 39 | 40 | 26 | 66 |
| Day Care Center (565) | 4.000 | k.s.f. | 47.62 | 190 | 11.00 | 53 | 47 | 23 | 21 | 44 | 11.12 | 47 | 53 | 21 | 23 | 44 |
| ***Total Project Trips*** | | | | **9,947** | | | | **359** | **330** | **689** | | | | **400** | **409** | **809** |

Note: f.p. = Fueling Positions
k.s.f = Thousand Square Feet
d.u. = Dwelling Units

Table II presents the total trip generation for the TIA Report Project Site Plan with trip generation rates for Gasoline/Service Station with Convenience Market, Fast-Food Restaurant with Drive-Through Window, Fast-Food Restaurant without Drive-Through Window, Shopping Center, Coffee/Donut Shop with Drive-Through Window, Medical-Dental Office Building, Walk-in Bank, Small Office Building, Multifamily Housing (Mid-Rise), and Day Care Center. Per the TIA Report, the Project was estimated to generate a maximum of 10,432 daily trips, 727 AM peak hour trips and 833 PM peak hour total trips (before internal capture and pass-by trip reductions are taken into account). Compared to the Project trip generation analyzed in the TIA Report, the latest Project Site Plan will yield 485 less daily, 38 less AM peak hour and 24 less PM peak hour trips. The difference in trip generation is summarized in Table III.

***Table II: Trip Generation - TIA Report Project Site Plan***

| ***Land Use (ITE Code)*** | ***Size*** | ***Unit*** | ***Daily*** | | ***AM (7-9) Peak Hour*** | | | | | | ***PM (4-6) Peak Hour*** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ***Rate*** | ***Total*** | ***Trip Rate*** | ***In %*** | ***Out %*** | ***In*** | ***Out*** | ***Total*** | ***Trip Rate*** | ***In %*** | ***Out %*** | ***In*** | ***Out*** | ***Total*** |
| Gasoline/Service Station with Convenience Market (945) | 16 | f.p. | 205.36 | 3,286 | 12.47 | 51 | 49 | 102 | 98 | 200 | 13.99 | 51 | 49 | 114 | 110 | 224 |
| Fast-Food Restaurant with Drive-Through Window (934) | 3.000 | k.s.f. | 470.95 | 1,413 | 40.19 | 51 | 49 | 62 | 59 | 121 | 32.67 | 52 | 48 | 51 | 47 | 98 |
| Fast-Food Restaurant without Drive-Through Window (933) | 2.000 | k.s.f. | 346.23 | 692 | 25.10 | 60 | 40 | 30 | 20 | 50 | 28.34 | 50 | 50 | 28 | 29 | 57 |
| Shopping Center (820) | 32.000 | k.s.f. | 37.75 | 1,208 | 0.94 | 62 | 38 | 19 | 11 | 30 | 3.81 | 48 | 52 | 59 | 63 | 122 |
| Coffee/Donut Shop with Drive-Through Window (937) | 2.000 | k.s.f. | 820.38 | 1,641 | 88.99 | 51 | 49 | 91 | 87 | 178 | 43.38 | 50 | 50 | 43 | 44 | 87 |
| Medical-Dental Office Building (720) | 14.500 | k.s.f. | 34.80 | 505 | 2.78 | 78 | 22 | 31 | 9 | 40 | 3.46 | 28 | 72 | 14 | 36 | 50 |
| Walk-in Bank (911) | 6.000 | k.s.f. | 100.03 | 600 | 0.00 | 0 | 0 | 0 | 0 | 0 | 12.13 | 44 | 56 | 32 | 41 | 73 |
| Small Office Building (712) | 5.000 | k.s.f. | 16.19 | 81 | 1.92 | 83 | 18 | 8 | 2 | 10 | 2.45 | 32 | 68 | 4 | 8 | 12 |
| Multifamily Housing (Mid-Rise) (221) | 150 | d.u. | 5.44 | 816 | 0.36 | 26 | 74 | 14 | 40 | 54 | 0.44 | 61 | 39 | 40 | 26 | 66 |
| Day Care Center (565) | 4.000 | k.s.f. | 47.62 | 190 | 11.00 | 53 | 47 | 23 | 21 | 44 | 11.12 | 47 | 53 | 21 | 23 | 44 |
| ***Total Project Trips*** | | | | **10,432** | | | | **380** | **347** | **727** | | | | **406** | **427** | **833** |

Note: f.p. = Fueling Positions
k.s.f = Thousand Square Feet
d.u. = Dwelling Units

***Table III: Difference in Trip Generation***

| ***Land Use*** | ***Daily*** | ***AM (7-9) Peak Hour*** | | | ***PM (4-6) Peak Hour*** | | |
|---|---|---|---|---|---|---|---|
| | ***Total*** | ***In*** | ***Out*** | ***Total*** | ***In*** | ***Out*** | ***Total*** |
| Latest Project Site Plan | 9,947 | 359 | 330 | 689 | 400 | 409 | 809 |
| TIA Report Project Site Plan | 10,432 | 380 | 347 | 727 | 406 | 427 | 833 |
| ***Difference in Trip Generation*** | **-485** | **-21** | **-17** | **-38** | **-6** | **-18** | **-24** |

# Vehicle Miles Traveled Evaluation

Senate Bill (SB) 743 (Steinberg 2013) was approved by then Governor Brown on September 27, 2013. SB 743 created a path to revise the definition of transportation impacts according to California Environmental Quality Act (CEQA). The revised CEQA Guidelines requiring VMT analysis became effective December 28, 2018; however, agencies had until July 1, 2020 to finalize their local guidelines on VMT analysis. On June 25, 2020, the City of Fresno adopted its VMT Guidelines. The intent of SB 743 is to align CEQA transportation study methodology with and promote the statewide goals and policies of reducing VMT and greenhouse gases (GHG). Three objectives of SB 743 related to development are to reduce GHG, diversify land uses, and focus on creating a multimodal environment. It is hoped that this will spur infill development.

On June 25, 2020, the City of Fresno adopted CEQA Guidelines for Vehicle Miles Traveled Thresholds pursuant to Senate Bill 743 to be effective of July 1, 2020. The thresholds described therein are referred to herein as the City of Fresno VMT Thresholds. The City of Fresno VMT Thresholds document was prepared and adopted consistent with the requirements of CEQA Guidelines Sections 15064.3 and 15064.7. The December 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) published by the Governor's Office of Planning and Research (OPR), was utilized as a reference and guidance document in the preparation of the Fresno VMT Thresholds.

The City of Fresno VMT Thresholds adopted a screening standard and criteria that can be used to screen out qualified projects that meet the adopted criteria for low VMT areas, that can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis.

This screening tool is consistent with the OPR December 2018 Guidance referenced above. The screening tool includes an analysis of those portions of the City that satisfy the standard of reducing VMT by 13% from existing per capita and per employee VMT averages within the relevant region. The relevant region adopted by the City of Fresno VMT Thresholds is Fresno County.

However, the City of Fresno VMT Thresholds Section 3.1 regarding Development Projects states that if a project constitutes a General Plan Amendment or a Rezone, none of the screening criteria may apply, and that the City must evaluate such projects on a case-by-case basis. Here the Project includes both a General Plan Amendment and a Rezone and does not meet the screening criteria. As such, a quantitative VMT analysis is required.

VMT is simply the product of a number of trips and those trips' lengths. The first step in a VMT analysis is to establish the baseline average VMT, which requires the definition of a region. The established region for the project, consistent with the adopted City of Fresno VMT Thresholds, is Fresno County.

The Project will be used to serve an expanding population of southern Fresno. At present, the nearest gas/service station is located on the northwest corner of Maple Avenue and Jensen Avenue approximately 100 feet to the west of the Project site. At present, the nearest shopping center is located on the northeast corner of Chestnut Avenue and Butler Avenue approximately 1.5 miles to the northeast of the Project site. There are no shopping centers located south of Jensen Avenue. Once operational, the Project will contain the nearest neighborhood shopping center for travelers south of Jensen Avenue. For VMT purposes the Project includes 151 multifamily residential units, 31,100 square feet of commercial uses, and 49,991 square feet of local-serving retail.

Because the project is not eligible to be screened out, JLB requested from Fresno COG to run its ABM model to determine the Project's VMT for these land uses. Based on the Fresno COG VMT output the residential, non-retail commercial, and retail commercial are projected to yield less than significant impacts to VMT. Based on the ABM model output, the Project's VMT for the residential component was calculated to be 10.31 VMT per capita which is less than the City of Fresno maximum threshold of 14.01 VMT per capita. Similarly, the Fresno COG VMT output for the non-retail commercial component was calculated to be 21.06 VMT per employee which is less than the City of Fresno maximum threshold of 22.27 VMT per employee. On the other hand, the VMT threshold for retail commercial is no net increase in regional VMT by the Project when compared to the No Project. At present the Fresno County

No Project Regional VMT is an average of 23,544,527, while the Fresno County with Project Regional VMT is 23,406,520. Therefore, the retail commercial component of the Project results in a Fresno County Regional VMT which is less than the Fresno County No Project Regional VMT. As a result, the residential, non-retail commercial, and retail commercial components will not have a significant impact to VMT.

### *Conclusions*

Conclusions and recommendations regarding the changes to the BDM Builders Mixed-Use Development Project, the latest Fresno COG Activity Based Model (ABM) Vehicle Miles Traveled (VMT) output are based on a review of the Trip Generation Comparison presented in this letter and the TIA Report.

- At buildout, the latest Project Site Plan is estimated to generate a maximum of 9,947 daily trips, 689 AM peak hour trips and 809 PM peak hour total trips (before internal capture and pass-by trip reductions are taken into account).
- Compared to the Project trip generation analyzed in the TIA Report, the latest Project Site Plan will yield 485 less daily, 38 less AM peak hour and 24 less PM peak hour trips.
- Considering that the changes to the Project Site Plan result in reductions to the estimated maximum trip generation, findings and recommendations relocated traffic operations and LOS are expected to remain as presented in the TIA Report.
- Based on the Trip Generation Comparison, the changes to the Project Site Plan do not give justification for a Revised TIA Report.
- Per the Fresno COG ABM model, the Project's retail commercial results in a Fresno County with Project Regional VMT that is lower than the Fresno County No Project Regional VMT.
- Per the Fresno COG ABM model, the Project's VMT for the residential component was calculated to be 10.31 VMT per capita which is less than the City of Fresno maximum threshold of 14.01 VMT per capita.
- Per the Fresno COG ABM model, the Project's VMT for the non-retail commercial component was calculated to be 21.06 VMT per employee which is less than the City of Fresno maximum threshold of 22.27 VMT per employee.
- As a result, the residential, non-retail commercial, and neighborhood retail components will not have a significant impact to VMT.

Please feel welcome to contact me with any questions, comments or concerns regarding the findings and recommendations of this letter. I can be reached by phone at 559.570.8991 and by email at jbenavides@jlbtraffic.com.

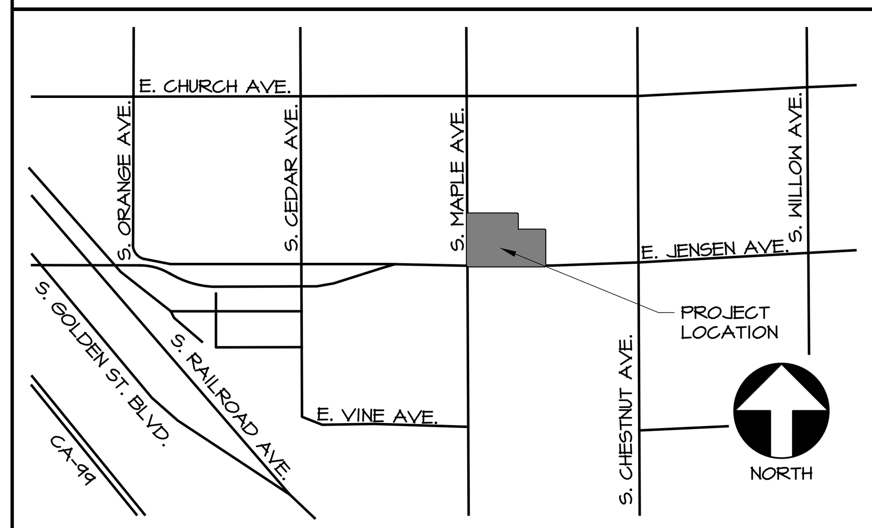
Sincerely,

Jose Luis Benavides, PE, TE
President

*Z:\01 Projects\004 Fresno\004-109 BDM Builders TIA\Letter\L01282020 BDM Builders Revised TGC Letter Addendum 2 .docx*

# Exhibit A - Latest Project Site Plan

## VICINITY MAP




## DEMOLITION KEYNOTES

D1. INDICATES (E) TREE TO BE REMOVED, TYP.
D2. REMOVE (E) FENCE AT PERIMETER OF PONDING BASIN
D3. (E) PONDING BASIN TO BE FILLED AND COMPACTED; SEE CIVIL
D4. (E) STORM DRAIN LINE TO BE REMOVED OR ABANDONED; SEE CIVIL
D5. (E) OVERHEAD POWER LINE AND POLES TO BE REMOVED
D6. (E) OVERHEAD TELEPHONE LINE AND POLES TO BE REMOVED OR UNDERGROUNDED
D7. REMOVE (E) MEDIAN AND CURB AS REQUIRED TO CONSTRUCT (N) LEFT TURN LANE; SEE CIVIL
D8. REMOVED (E) MEDIAN LANDSCAPING AND IRRIGATION AT AREA OF REMOVED MEDIAN; SEE CIVIL AND LANDSCAPING
D9. RELOCATE (E) 'SIGNAL AHEAD' SIGN; VERIFY LOCATION W/ CITY OF FRESNO
D10. REMOVE (E) CURB, GUTTER, SIDEWALK AND CURB RAMP
D11. REMOVE AND SALVAGE (E) FIRE HYDRANT, STREET LIGHT AND OTHER EQUIPMENT AT STREET CORNER
D12. REMOVE (E) ASPHALT DIKE BUS BAY AND BUS STOP SIGN

## PROJECT DIRECTORY

**OWNER**
HAMEL INVESTMENT PROPERTIES, LLC
10768 S NAVARRO WAY
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(801) 897-1578
CONTACT: SHISHU BEDI
E-MAIL: shishu@designtrends.re

**CIVIL ENGINEER**
GATEWAY ENGINEERING
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**LANDSCAPE ARCHITECT**
WOOD ARCHITECTURE
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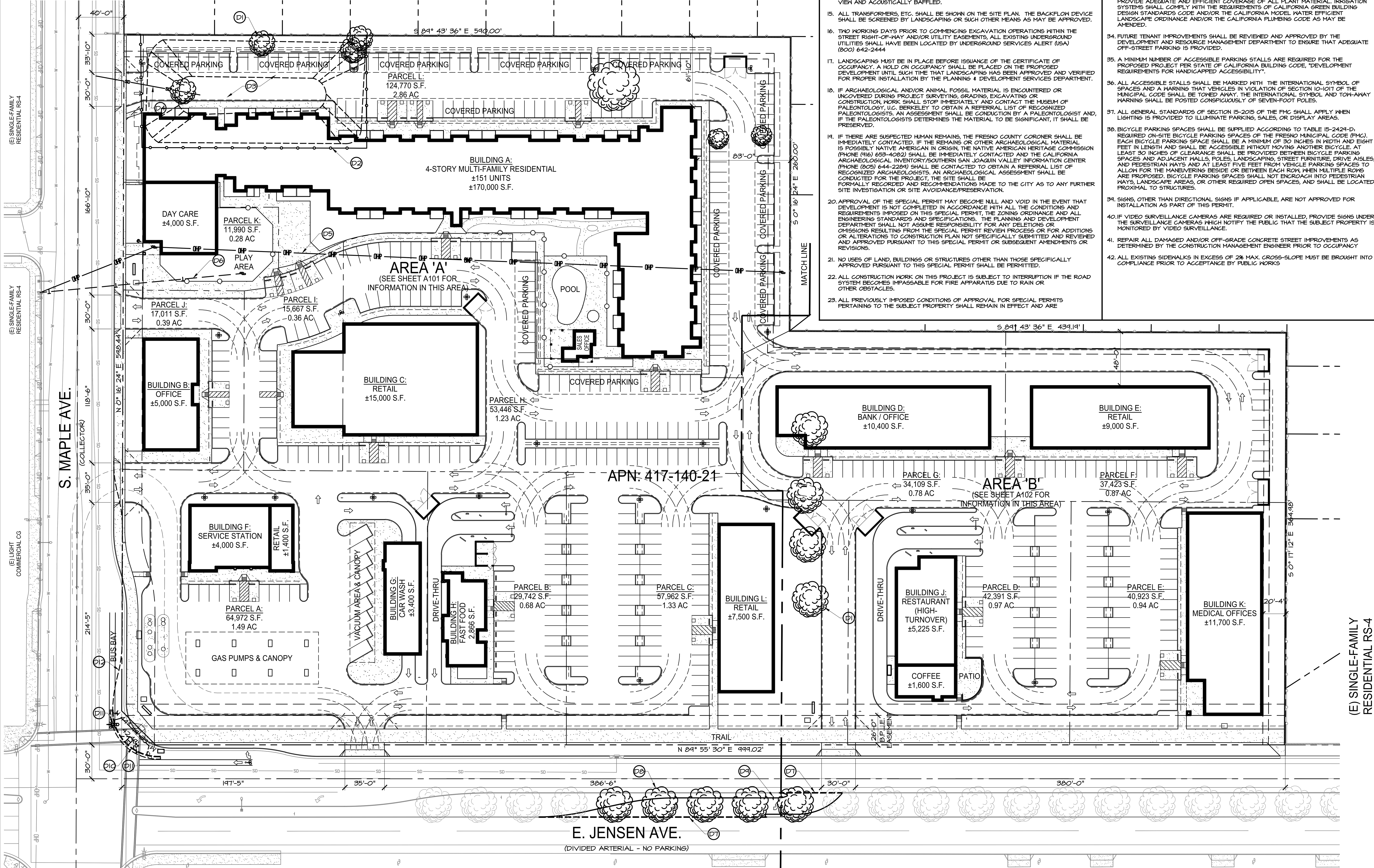
**PLANNING CONSULTANT**
NICK YOVINO SR. / QUAD KNOPF
1879 S HOMSY AVE.
FRESNO, CA 93727
(559) 255-1355
CONTACT: NICK YOVINO SR.
E-MAIL: npyovino@gmail.com

## SITE GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND DEPTHS AS INDICATED HEREON AND SHALL BE RESPONSIBLE FOR REPORTING ANY DISCREPANCY BETWEEN THESE PLANS AND EXISTING CONDITIONS PRIOR TO SUBMITTAL OF BID.
2. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DIMENSIONS OF SITE, AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE SUBMITTING BIDS.
3. PROVIDE MINIMUM OF 2% SLOPE AWAY FROM BUILDING FOR A DISTANCE OF 5'-0" AT LANDSCAPE AREAS; 1% MINIMUM AT PAVING AREAS.
4. NO DRAINAGE TO BE TAKEN TO ADJACENT PROPERTY
5. PROVIDE 1/2" MAX. STEP FROM EXTERIOR DOOR THRESHOLDS TO EXTERIOR SURFACE. CHANGES IN ELEVATIONS MORE THAN 6" ALONG EXIT WAYS SHALL BE BY MEANS OF AN APPROVED RAMP.
6. LAY OUT FORMS FOR WALKWAYS AND EXTERIOR SLABS IN FIELD FOR ARCHITECT'S APPROVAL BEFORE POURING.
7. CONTRACTOR TO PROVIDE THE BUILDING DEPARTMENT WITH SOIL COMPACTION REPORTS PREPARED BY AN APPROVED TESTING AGENCY.
8. ANY SURVEY MONUMENTS WITHIN THE AREA OF CONSTRUCTION SHALL BE PRESERVED OR RESET BY A PERSON LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF CALIFORNIA.
9. THE APPLICANT SHALL INSTALL AN APPROVED BACKFLOW PREVENTION ASSEMBLY ADJACENT TO THE WATER METER AND SHALL BE TESTED BY AN APPROVED AWWA CERTIFIED TESTER WITHIN 5 DAYS OF INSTALLATION WITH THE RESULTS SENT TO THE CITY UTILITIES DIVISION.
10. CONTRACTOR SHALL BE REQUIRED TO BRING ALL UTILITY LINES (WATER, SEWER, GAS AND ELECTRICAL) INTO THE BUILDING FROM TERMINATION POINTS AS INDICATED ON THE PLANS, READY FOR SERVICE.
11. THE SOILS REPORT SHALL BE A PART OF THESE PLANS. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY BETWEEN THIS REPORT AND THE PLANS PRIOR TO BEGINNING WORK.
12. PROVIDE ILLUMINATED ADDRESS SIGN, VISIBLE FROM THE STREET PRIOR TO FINAL INSPECTION, PER FIRE DEPT. STANDARD.
13. THE SANITARY SEWER SERVICES, WATER, GAS AND OTHER UNDERGROUND SERVICE CONNECTIONS SHALL BE COMPLETED IN ALL AREAS TO BE PAVED PRIOR TO PLACEMENT OF PAVING ON SITE.
14. ROOF MOUNTED AND DETACHED MECHANICAL EQUIPMENT SHALL BE SCREENED FROM VIEW AND ACOUSTICALLY BAFFLED.
15. ALL TRANSFORMERS, ETC. SHALL BE SHOWN ON THE SITE PLAN. THE BACKFLOW DEVICE SHALL BE SCREENED BY LANDSCAPING OR SUCH OTHER MEANS AS MAY BE APPROVED.
16. TWO WORKING DAYS PRIOR TO COMMENCING EXCAVATION OPERATIONS WITHIN THE STREET RIGHT-OF-WAY AND/OR UTILITY EASEMENTS, ALL EXISTING UNDERGROUND UTILITIES SHALL HAVE BEEN LOCATED BY UNDERGROUND SERVICES ALERT (USA) (800) 642-2444
17. LANDSCAPING MUST BE IN PLACE BEFORE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. A HOLD ON OCCUPANCY SHALL BE PLACED ON THE PROPOSED DEVELOPMENT UNTIL SUCH TIME THAT LANDSCAPING HAS BEEN APPROVED AND VERIFIED FOR PROPER INSTALLATION BY THE PLANNING & DEVELOPMENT SERVICES DEPARTMENT.
18. IF ARCHAEOLOGICAL AND/OR ANIMAL FOSSIL MATERIAL IS ENCOUNTERED OR UNCOVERED DURING PROJECT SURVEYING, GRADING, EXCAVATING OR CONSTRUCTION, WORK SHALL STOP IMMEDIATELY AND CONTACT THE MUSEUM OF PALEONTOLOGY, U.C. BERKELEY TO OBTAIN A REFERRAL LIST OF RECOGNIZED PALEONTOLOGISTS. AN ASSESSMENT SHALL BE CONDUCTION BY A PALEONTOLOGIST AND, IF THE PALEONTOLOGISTS DETERMINES THE MATERIAL TO BE SIGNIFICANT, IT SHALL BE PRESERVED.
19. IF THERE ARE SUSPECTED HUMAN REMAINS, THE FRESNO COUNTY CORONER SHALL BE IMMEDIATELY CONTACTED. IF THE REMAINS OR OTHER ARCHAEOLOGICAL MATERIAL IS POSSIBLY NATIVE AMERICAN IN ORIGIN, THE NATIVE AMERICAN HERITAGE COMMISSION (PHONE (916) 653-4082) SHALL BE IMMEDIATELY CONTACTED AND THE CALIFORNIA ARCHAEOLOGICAL INVENTORY/SOUTHERN SAN JOAQUIN VALLEY INFORMATION CENTER (PHONE (805) 644-2289) SHALL BE CONTACTED TO OBTAIN A REFERRAL LIST OF RECOGNIZED ARCHAEOLOGISTS. AN ARCHAEOLOGICAL ASSESSMENT SHALL BE CONDUCTED FOR THE PROJECT, THE SITE SHALL BE FORMALLY RECORDED AND RECOMMENDATIONS MADE TO THE CITY AS TO ANY FURTHER SITE INVESTIGATION OR SITE AVOIDANCE/PRESERVATION.
20. APPROVAL OF THE SPECIAL PERMIT MAY BECOME NULL AND VOID IN THE EVENT THAT DEVELOPMENT IS NOT COMPLETED IN ACCORDANCE WITH ALL THE CONDITIONS AND REQUIREMENTS IMPOSED ON THIS SPECIAL PERMIT, THE ZONING ORDINANCE AND ALL ENGINEERING STANDARDS AND SPECIFICATIONS. THE PLANNING AND DEVELOPMENT DEPARTMENT SHALL NOT ASSUME RESPONSIBILITY FOR ANY DELETIONS OR OMISSIONS RESULTING FROM THE SPECIAL PERMIT REVIEW PROCESS OR FOR ADDITIONS OR ALTERATIONS TO CONSTRUCTION PLAN NOT SPECIFICALLY SUBMITTED AND REVIEWED AND APPROVED PURSUANT TO THIS SPECIAL PERMIT OR SUBSEQUENT AMENDMENTS OR REVISIONS.
21. NO USES OF LAND, BUILDINGS OR STRUCTURES OTHER THAN THOSE SPECIFICALLY APPROVED PURSUANT TO THIS SPECIAL PERMIT SHALL BE PERMITTED.
22. ALL CONSTRUCTION WORK ON THIS PROJECT IS SUBJECT TO INTERRUPTION IF THE ROAD SYSTEM BECOMES IMPASSABLE FOR FIRE APPARATUS DUE TO RAIN OR OTHER OBSTACLES.
23. ALL PREVIOUSLY IMPOSED CONDITIONS OF APPROVAL FOR SPECIAL PERMITS PERTAINING TO THE SUBJECT PROPERTY SHALL REMAIN IN EFFECT AND ARE INCORPORATED HEREIN BY REFERENCE; EXCEPT AS MAYBE SPECIFICALLY MODIFIED BY THIS SPECIAL PERMIT.
24. ALL ACCESSIBLE PARKING STALLS SHALL BE LOCATED ADJACENT TO FACILITY ACCESS RAMPS OR IN STRATEGIC AREAS WHERE THE DISABLED SHALL NOT HAVE TO WHEEL OR WALK BEHIND PARKED VEHICLES WHILE TRAVELING TO OR FROM THE ACCESSIBLE PARKING STALL.
25. ALL OUTDOOR LIGHTING SHALL BE HOODED AND DIRECTED DOWNWARD SO AS TO NOT SHINE TOWARD ADJACENT PROPERTIES AND PUBLIC STREETS.
26. NO LAND SHALL BE USED, AND NO STRUCTURE SHALL BE CONSTRUCTED, OCCUPIED, ENLARGED, ALTERED, DEMOLISHED, OR MOVED IN ANY ZONING DISTRICT, EXCEPT IN ACCORDANCE WITH THE PROVISIONS OF THIS CODE. SPECIFIC USES OF LAND, BUILDINGS, AND STRUCTURES LISTED AS PROHIBITED IN ANY ZONING DISTRICT ARE HEREBY DECLARED TO BE DETRIMENTAL TO THE PUBLIC HEALTH, SAFETY, AND WELFARE.
27. ANY BUILDING MODIFICATIONS AND/OR ADDITIONS NOT INCLUDED WITH THIS APPLICATION ARE NOT APPROVED WITH THIS SPECIAL PERMIT AND WOULD BE SUBJECT TO A NEW SPECIAL PERMIT.
28. A PERMIT GRANTED UNDER THIS CODE SHALL AUTOMATICALLY EXPIRE IF IT IS NOT EXERCISED OR EXTENDED WITHIN THREE YEARS OF ITS ISSUANCE. REFER TO SECTION 15-5013, EXPIRATION OF PLANNING ENTITLEMENTS, FOR MORE INFORMATION ABOUT THE EXERCISE OF RIGHTS.
29. FUTURE FENCES SHALL BE REVIEWED AND APPROVED BY THE DEVELOPMENT AND RESOURCE MANAGEMENT DEVELOPMENT PRIOR TO INSTALLATION.
30. TREES SHALL BE MAINTAINED BY PROPERTY OWNERS TO BE FREE FROM PHYSICAL DAMAGE OR INJURY ARISING FROM LACK OF WATER, CHEMICAL DAMAGE, ACCIDENTS, VANDALISM, INSECTS, AND DISEASE. ANY TREE SHOWING SUCH DAMAGE SHALL BE REPLACED WITH ANOTHER TREE.
31. NO TREE FOR WHICH A TREE REMOVAL PERMIT IS REQUIRED SHALL BE REMOVED UNTIL ALL CONDITIONS OF THE PERMIT HAVE BEEN SATISFIED AND THE DECISION HAS BECOME FINAL. IN ADDITION, TREE(S) APPROVED FOR REMOVAL IN CONJUNCTION WITH A DEVELOPMENT APPLICATION SHALL NOT BE REMOVED BEFORE THE ISSUANCE OF A BUILDING PERMIT OR UNLESS ALL OF THE CONDITIONS OF APPROVAL OF THE DEVELOPMENT APPLICATIONS ARE SATISFIED.
32. LANDSCAPING MUST BE IN PLACE BEFORE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. A HOLD ON OCCUPANCY SHALL BE PLACED ON THE THE PROPOSED DEVELOPMENT UNTIL SUCH TIME THAT LANDSCAPING HAS BEEN APPROVED AND VERIFIED FOR PROPER INSTALLATION BY THE DEVELOPMENT SERVICES DIVISION.
33. NEW LANDSCAPING SHALL HAVE AN AUTOMATIC IRRIGATION SYSTEM DESIGNED TO PROVIDE ADEQUATE AND EFFICIENT COVERAGE OF ALL PLANT MATERIAL. IRRIGATION SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF CALIFORNIA GREEN BUILDING DESIGN STANDARDS CODE AND/OR THE CALIFORNIA MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND/OR THE CALIFORNIA PLUMBING CODE AS MAY BE AMENDED.
34. FUTURE TENANT IMPROVEMENTS SHALL BE REVIEWED AND APPROVED BY THE DEVELOPMENT AND RESOURCE MANAGEMENT DEPARTMENT TO ENSURE THAT ADEQUATE OFF-STREET PARKING IS PROVIDED.
35. A MINIMUM NUMBER OF ACCESSIBLE PARKING STALLS ARE REQUIRED FOR THE PROPOSED PROJECT PER STATE OF CALIFORNIA BUILDING CODE, "DEVELOPMENT REQUIREMENTS FOR HANDICAPPED ACCESSIBILITY".
36. ALL ACCESSIBLE STALLS SHALL BE MARKED WITH THE INTERNATIONAL SYMBOL OF SPACES AND A WARNING THAT VEHICLES IN VIOLATION OF SECTION 10-1017 OF THE MUNICIPAL CODE SHALL BE TOWED AWAY. THE INTERNATIONAL SYMBOL AND TOW-AWAY WARNING SHALL BE POSTED CONSPICUOUSLY OF SEVEN-FOOT POLES.
37. ALL GENERAL STANDARDS OF SECTION 15-2015 OF THE FMC SHALL APPLY WHEN LIGHTING IS PROVIDED TO ILLUMINATE PARKING, SALES, OR DISPLAY AREAS.
38. BICYCLE PARKING SPACES SHALL BE SUPPLIED ACCORDING TO TABLE 15-2429-D: REQUIRED ON-SITE BICYCLE PARKING SPACES OF THE FRESNO MUNICIPAL CODE (FMC). EACH BICYCLE PARKING SPACE SHALL BE A MINIMUM OF 30 INCHES IN WIDTH AND EIGHT FEET IN LENGTH AND SHALL BE ACCESSIBLE WITHOUT MOVING ANOTHER BICYCLE. AT LEAST 30 INCHES OF CLEARANCE SHALL BE PROVIDED BETWEEN BICYCLE PARKING SPACES AND ADJACENT WALLS, POLES, LANDSCAPING, STREET FURNITURE, DRIVE AISLES, AND PEDESTRIAN WAYS AND AT LEAST FIVE FEET FROM VEHICLE PARKING SPACES TO ALLOW FOR THE MANEUVERING BESIDE OR BETWEEN EACH ROW, WHEN MULTIPLE ROWS ARE PROPOSED. BICYCLE PARKING SPACES SHALL NOT ENCROACH INTO PEDESTRIAN WAYS, LANDSCAPE AREAS, OR OTHER REQUIRED OPEN SPACES, AND SHALL BE LOCATED PROXIMAL TO STRUCTURES.
39. SIGNS, OTHER THAN DIRECTIONAL SIGNS IF APPLICABLE, ARE NOT APPROVED FOR INSTALLATION AS PART OF THIS PERMIT.
40. IF VIDEO SURVEILLANCE CAMERAS ARE REQUIRED OR INSTALLED, PROVIDE SIGNS UNDER THE SURVEILLANCE CAMERAS WHICH NOTIFY THE PUBLIC THAT THE SUBJECT PROPERTY IS MONITORED BY VIDEO SURVEILLANCE.
41. REPAIR ALL DAMAGED AND/OR OFF-GRADE CONCRETE STREET IMPROVEMENTS AS DETERMINED BY THE CONSTRUCTION MANAGEMENT ENGINEER PRIOR TO OCCUPANCY
42. ALL EXISTING SIDEWALKS IN EXCESS OF 2% MAX. CROSS-SLOPE MUST BE BROUGHT INTO COMPLIANCE PRIOR TO ACCEPTANCE BY PUBLIC WORKS




NOTE:
BUILDING F, G, & H ELEVATIONS PER FUTURE TENANT BRAND

NOTE:
ALL EV CHARGING STATIONS INDICATED ARE FUTURE AND MAY BE INSTALLED AT THE OPTION OF THE OWNER; LOCATIONS DEPICTED ARE SUBJECT TO CHANGE AT OPTION OF OWNER

NOTE:
ALL STREET PAVING IMPROVEMENTS AND REPAIRS TO BE CONSTRUCTED PER CITY OF FRESNO STANDARD P-50

(E) LIGHT INDUSTRIAL

MATCH LINE

CLEAN AIR VEHICLE PARKING NOTE:
PROVIDE **23** DESIGNATED CLEAN AIR VEHICLE PARKING STALLS PER DETAIL **13/A901**; CLEAN AIR VEHICLE STALLS ARE TO BE DISTRIBUTED EVENLY THROUGHOUT NEW PARKING STALLS SERVING COMMERCIAL BUILDINGS (CALGREEN 5.106.5.2)

NOTE:
ALL WALKWAYS TO HAVE MAX. 5% SLOPE IN DIRECTION OF TRAVEL AND MAX. 1.5% CROSS SLOPE

NOTE:
SUPPORT STRUCTURE AT AT CARPORTS/SHADE CANOPIES NOT TO BE LOCATED WITHIN PARKING STALL OR ACCESS AISLE BOUNDARIES

PROJECT NORTH

## SITE MASTER PLAN

SCALE: 1" = 40'-0"

## PROJECT INFORMATION

| | |
|---|---|
| SITE ADDRESS: | E. JENSEN & S. MAPLE<br>FRESNO, CA 93704 |
| SITE PLAN REVIEW NO.: | - |
| APN: | 480-030-60 |
| EXISTING ZONING: | CC/IL/RM-2/ UGM |
| EXISTING USE: | VACANT |
| PROPOSED USE: | MIXED USE: MULTI-FAMILY RESIDENTIAL, COMMERCIAL, RETAIL AND OFFICE SPACES |
| SITE AREA: | 12.18 ACRES (530,561 SQ. FT.) |

BUILDING AREA:

| | |
|---|---|
| A: FIRST FLOOR - DAY CARE | ±4,000 SQ. FT. |
| A: FIRST FLOOR - RESIDENTIAL | ±38,500 SQ. FT. |
| A: SECOND FLOOR - RESIDENTIAL | ±42,500 SQ. FT. |
| A: THIRD FLOOR - RESIDENTIAL | ±42,500 SQ. FT. |
| A: FOURTH FLOOR - RESIDENTIAL | ±42,500 SQ. FT. |
| TOTAL BUILDING A AREA: | ±170,000 SQ. FT. |
| BUILDING B: OFFICE | ±5,000 SQ. FT. |
| BUILDING C: RETAIL | ±15,000 SQ. FT. |
| BUILDING D: BANK/OFFICE | ±10,400 SQ. FT. |
| BUILDING E: RETAIL | ±9,000 SQ. FT. |
| BUILDING F: SERV. STATION/RETAIL | ±5,400 SQ. FT. |
| BUILDING G: CAR WASH | ±3,400 SQ. FT. |
| BUILDING H: FAST FOOD | 2,866 SQ. FT. |
| BUILDING J: RESTAURANT/COFFEE | ±6,825 SQ. FT. |
| BUILDING K: MEDICAL OFFICES | ±11,700 SQ. FT. |
| BUILDING L: RETAIL | ±7,500 SQ. FT. |

| | |
|---|---|
| BUILDING HEIGHT: | FOUR STORIES FOR RESIDENTIAL; SEE ELEVATIONS<br>SINGLE STORY FOR COMMERCIAL: SEE ELEVATIONS |
| SITE COVERAGE: | 22.5% (BLDG. FOOTPRINT/SITE AREA) |
| TYPE OF CONSTRUCTION: | V-B W/ FIRE SPRINKLERS |
| OCCUPANCY GROUP: | R-2 / B |

**MULTI-UNIT RESIDENTIAL PARKING:**

REQUIREMENTS PER FRESNO MUNICIPAL CODE TABLE 15-2409:

STUDIO UNITS (33) = MIN. 30 COVERED + 9 GUEST SPACES
ONE-BR. UNITS (53) = MIN. 53 COVERED + 30 GUEST SPACES
TWO-BR. UNITS (65) = MIN. 65 COVERED + 33 GUEST SPACES

TOTAL PARKING REQUIRED (9'x18'): 148 COVERED + 72 GUEST = 220 STALLS
ACCESSIBLE PARKING REQUIRED: 11 SPACES (2 VAN + 9 STANDARD)

PARKING PROVIDED:

| | |
|---|---|
| COVERED STALLS: | 145 (9'x18') |
| COVERED ACCESSIBLE STALLS: | 8 (9'x18') (2 VAN + 6 STANDARD) |
| UNCOVERED STALLS: | 67 (9'x18') |
| UNCOVERED ACCESSIBLE STALLS: | 3 (9'x18') (1 VAN + 2 STANDARD) |
| TOTAL STALLS: | 223 |

FUTURE RESIDENTIAL E.V. CHARGING STATIONS: 223 X .06 = 14 MIN. REQ'D.
(PER CALGREEN 4.106.4.2)

**COMMERCIAL PARKING:**

REQUIREMENTS PER FRESNO MUNICIPAL CODE TABLE 15-2409:

| | |
|---|---|
| BUILDING B: OFFICE (1:400) | = MIN. 13 SPACES |
| BUILDING C: RETAIL (1:450) | = MIN. 33 SPACES |
| BUILDING D: BANK/OFFICE (1:400/1:400) | = MIN. 26 SPACES |
| BUILDING E: RETAIL (1:450) | = MIN. 20 SPACES |
| BUILDING F: SERV. STN./RETAIL (1:250,1:450) | = MIN 19 SPACES |
| BUILDING G: CAR WASH | N/A |
| BUILDING H: FAST FOOD (1:150) | = MIN. 19 SPACES |
| BUILDING J: COFFEE SHOP/RESTAURANT (1:150) | = MIN. 46 SPACES |
| BUILDING K: MEDICAL OFFICES (1:275) | = MIN. 43 SPACES |
| BUILDING L: RETAIL (1:450) | = MIN. 17 SPACES |

TOTAL PARKING REQUIRED: 236 SPACES
ACCESSIBLE PARKING REQUIRED: 7 SPACES (2 VAN + 5 STANDARD)

PARKING PROVIDED:

| | |
|---|---|
| STANDARD STALLS: | 216 (9'x18') |
| COMPACT STALLS: | 40 (9'x17') |
| STD. ACCESS. STALLS: | 14 (9'x18') |
| VAN ACCESS. STALLS: | 9 (9'X18') |
| TOTAL STALLS: | 279 |

(ASSUME 25% TENANT-OCCUPANTS, 75% VISITORS)

BICYCLE PARKING REQUIRED:

SHORT-TERM: 273 X .05 = 11 MIN.
(PER CALGREEN 5.106.4.1.1)

LONG-TERM: 70 X .05 = 4 MIN.
(PER CALGREEN 5.106.4.1.2)

DESIGNATED CLEAN AIR VEHICLE PARKING STALLS REQ'D.: 279 X .08 = 23 MIN.

FUTURE E.V. CHARGING STATIONS: 279 X .06 = 17 MIN. REQ'D.
(PER CALGREEN 4.106.4.2)

## PROPERTY LEGAL DESCRIPTION

PARCEL B OF PARCEL MAP NO. 79-06, IN THE CITY OF FRESNO, COUNTY OF FRESNO, STATE OF CALIFORNIA, ACCORDING TO THE MAP THEREOF RECORDED AUGUST 27, 1979 IN BOOK 32, PAGE 22 OF PARCEL MAPS, FRESNO COUNTY RECORDS.

## FIRE PROTECTION NOTES

1. PROVIDE SIGN(S) (17"X22" MINIMUM) AT ALL PUBLIC ENTRANCE DRIVES TO THE PROPERTY WHICH STATE "WARNING - VEHICLES STOPPED, PARKED OR LEFT STANDING IN FIRE LANES WILL BE IMMEDIATELY REMOVED AT OWNER'S EXPENSE - 22658(a) CALIFORNIA VEHICLE CODE - FRESNO POLICE DEPARTMENT 621-2300."
2. FIRE HYDRANTS AND ACCESS ROADS SHALL BE INSTALLED, TESTED AND APPROVED AND SHALL BE MAINTAINED SERVICEABLE PRIOR TO AND DURING ALL PHASES OF DEVELOPMENT. THE 4 1/2" OUTLET SHALL FACE THE ACCESS LANE.
3. WALKING ACCESS IS REQUIRED TO REACH BUILDING OPENINGS WITHIN 200 FT. OF A PAVED SURFACE DESIGNED FOR FIRE APPARATUS USE. REQUIRED WALKING ACCESS SHALL BE DESIGNED TO PREVENT SHARP TURNS OR OBSTACLES THAT WOULD HINDER THE CARRYING OF GROUND LADDERS AND OTHER HAND-HELD EQUIPMENT. GATES SHALL BE A MINIMUM OF 4 FEET IN WIDTH IF THEY ARE USED IN THE WALKING ACCESS PATH.
4. ALL PEDESTRIAN GATES (WHERE PROVIDED) FOR COMPLIANCE OF THE 200' RULE, SHALL REMAIN UNLOCKED OR BE PROVIDED WITH POLICE/FIRE BYPASS LOCKS OR BEST/X-1 LOCK BOX ("BEST" PADLOCK MODEL 21B700 SERIES).

THE TAYLOR GROUP ARCHITECTS
410 PARK CREEK DRIVE • CLOVIS, CA 93611 • P. 559.708.4046

LICENSED ARCHITECT — NOT FOR CONSTRUCTION — STATE OF CALIFORNIA

| MARK | DATE | DESCRIPTION |
|---|---|---|
| 1 | 10/19/2020 | C.U.P. RESUBMITTAL PACKAGE |

PROPOSED MIXED USE SITE PLAN FOR:
BDM BUILDERS
EAST JENSEN AVENUE AND SOUTH MAPLE AVENUE
FRESNO, CA

SITE MASTER PLAN

PROJECT NO. 19-008.00
DRAWING A100

www.ttgarchitects.com

# Exhibit B - Fresno COG VMT Output

2856 - TAZ A (Residential - MF)

| hhtaz | hh | hh population | Veh VMT | Vehtrips | VMT/cap | Trip Length |
|---|---|---|---|---|---|---|
| 2856 | 150 | 515 | 5304.54 | 1003.73 | 10.31 | 5.28 |

| 2857 - TAZ B (Retail) | |
|---|---|
| **No Project Regional Model Date** | **Total Regional VMT** |
| 12/14/2020 | 23,731,449 |
| 1/12/2021 | 23,505,944 |
| 1/15/2021 | 23,396,187 |
| | |
| Average No Project Regional VMT | 23,544,527 |
| With Project (TAZ B) | 23,406,520 |
| | |
| Net Change in Regional VMT with Project | (138,007) |
| **Signficant VMT Impact?** | **No** |

2858 - TAZ C (Commercial)

| TAZ | TOTAL EMP | Total VMT | Vehtrips | VMT/emp | Trip Length |
|---|---|---|---|---|---|
| 2858 | 95 | 1996.49 | 211.61 | 21.06 | 9.43 |

# MEIR Mitigation Measure Monitoring Checklist for the BDM Mixed Use Development Project EA

**Date February 2021**

**INCORPORATING MEASURES FROM THE MASTER ENVIRONMENTAL IMPACT REPORT (MEIR) CERTIFIED FOR THE CITY OF FRESNO GENERAL PLAN UPDATE (SCH No. 2012111015)**

This mitigation measure monitoring and reporting checklist was prepared pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15097 and Section 21081.6 of the Public Resources Code (PRC). It was certified as part of the Fresno City Council's approval of the MEIR for the Fresno General Plan update (Fresno City Council Resolution 2014-225, adopted December 18, 2014).

Letter designations to the right of each MEIR mitigation measure listed in this Exhibit note how the mitigation measure relates to the environmental assessment of the above-listed project, according to the key found at right and at the bottoms of the following pages:

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Progress
**D** - Responsible Agency Contacted
**E** - Part of City-wide Program
**F** - Not Applicable

The timing of implementing each mitigation measure is identified in in the checklist, as well as identifies the entity responsible for verifying that the mitigation measures applied to a project are performed. Project applicants are responsible for providing evidence that mitigation measures are implemented. As lead agency, the City of Fresno is responsible for verifying that mitigation is performed/completed.

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Aesthetics:** | | | | | | | | |
| **AES-1.** Lighting systems for street and parking areas shall include shields to direct light to the roadway surfaces and parking areas. Vertical shields on the light fixtures shall also be used to direct light away from adjacent light sensitive land uses such as residences.<br>**Verification comments:** | Prior to issuance of building permits | Public Works Department (PW) and Development & Resource Management Dept. (DARM) | X | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Aesthetics** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AES-2:** Lighting systems for public facilities such as active play areas shall provide adequate illumination for the activity; however, low intensity light fixtures and shields shall be used to minimize spillover light onto adjacent properties.<br>**Verification comments:** | Prior to issuance of building permits | DARM | X | | | | | |
| **AES-3**: Lighting systems for non-residential uses, not including public facilities, shall provide shields on the light fixtures and orient the lighting system away from adjacent properties. Low intensity light fixtures shall also be used if excessive spillover light onto adjacent properties will occur.<br>**Verification comments:** | Prior to issuance of building permits | DARM | X | | | | | |
| **AES-4:** Lighting systems for freestanding signs shall not exceed 100 foot Lamberts (FT-L) when adjacent to streets which have an average light intensity of less than 2.0 horizontal footcandles and shall not exceed 500 FT-L when adjacent to streets which have an average light intensity of 2.0 horizontal footcandles or greater.<br>**Verification comments:** | Prior to issuance of building permits | DARM | | | | | | X |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Aesthetics** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AES-5:** Materials used on building facades shall be non-reflective.<br><br>**Verification comments:** | Prior to development project approval | DARM | X | | | | | |

**Air Quality:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AIR-1:** Projects that include five or more heavy-duty truck deliveries per day with sensitive receptors located within 300 feet of the truck loading area shall provide a screening analysis to determine if the project has the potential to exceed criteria pollutant concentration based standards and thresholds for NO2 and PM2.5. If projects exceed screening criteria, refined dispersion modeling and health risk assessment shall be accomplished and if needed, mitigation measures to reduce impacts shall be included in the project to reduce the impacts to the extent feasible. Mitigation measures include but are not limited to:<br>• Locate loading docks and truck access routes as far from sensitive receptors as reasonably possible considering site design limitations to comply with other City design standards.<br>• Post signs requiring drivers to limit idling to 5 minutes or less.<br><br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |

**A** - Incorporated into Project
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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Air Quality** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **AIR-2:** Projects that result in an increased cancer risk of 10 in a million or exceed criteria pollutant ambient air quality standards shall implement site-specific measures that reduce toxic air contaminant (TAC) exposure to reduce excess cancer risk to less than 10 in a million. Possible control measures include but are not limited to:<br>• Locate loading docks and truck access routes as far from sensitive receptors as reasonably possible considering site design limitations to comply with other City design standards.<br>• Post signs requiring drivers to limit idling to 5 minutes or less<br>• Construct block walls to reduce the flow of emissions toward sensitive receptors<br>• Install a vegetative barrier downwind from the TAC source that can absorb a portion of the diesel PM emissions<br>• For projects proposing to locate a new building containing sensitive receptors near existing sources of TAC emissions, install HEPA filters in HVAC systems to reduce TAC emission levels exceeding risk thresholds.<br>• Install heating and cooling services at truck stops to eliminate the need for idling during overnight stops to run onboard systems.<br>*(continued on next page)* | Prior to development project approval | DARM | | | | | | X |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Air Quality** *(continued)*:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **AIR-2** *(continued from previous page)*<br>• For large distribution centers where the owner controls the vehicle fleet, provide facilities to support alternative fueled trucks powered by fuels such as natural gas or bio-diesel<br>• Utilize electric powered material handling equipment where feasible for the weight and volume of material to be moved.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **AIR-3:** Require developers proposing projects on ARB's list of projects in its Air Quality and Land Use Handbook (Handbook) warranting special consideration to prepare a cumulative health risk assessment when sensitive receptors are located within the distance screening criteria of the facility as listed in the ARB Handbook.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | **X** |

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**B** - Mitigated
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**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Air Quality** *(continued)***:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **AIR-4:** Require developers of projects containing sensitive receptors to provide a cumulative health risk assessment at project locations exceeding ARB Land Use Handbook distance screening criteria or newer criteria that may be developed by the San Joaquin Valley Air Pollution Control District (SJVAPCD).<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |
| **AIR-5:** Require developers of projects with the potential to generate significant odor impacts as determined through review of SJVAPCD odor complaint history for similar facilities and consultation with the SJVAPCD to prepare an odor impact assessment and to implement odor control measures recommended by the SJVAPCD or the City to the extent needed to reduce the impact to less than significant.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Biological Resources:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **BIO-1:** Construction of a proposed project should avoid, where possible, vegetation communities that provide suitable habitat for a special-status species known to occur within the Planning Area. If construction within potentially suitable habitat must occur, the presence/absence of any special-status plant or wildlife species must be determined prior to construction, to determine if the habitat supports any special-status species. If special-status species are determined to occupy any portion of a project site, avoidance and minimization measures shall be incorporated into the construction phase of a project to avoid direct or incidental take of a listed species to the greatest extent feasible.<br>**Verification comments:** | Prior to development project approval | DARM | X | | | | | |
| **BIO-2:** Direct or incidental take of any state or federally listed species should be avoided to the greatest extent feasible. If construction of a proposed project will result in the direct or incidental take of a listed species, consultation with the resources agencies and/or additional permitting may be required. Agency consultation through the California Department of Fish and Wildlife (CDFW) 2081 and U.S. Fish and Wildlife Service (USFWS) Section 7 or Section 10 permitting processes must take place prior to any action that<br>*(continued on next page)* | Prior to development project approval | DARM | X | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
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**D** - Responsible Agency Contacted
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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Biological Resources** *(continued)*: | | | | | | | | |
| **BIO-2** *(continued from previous page)* may result in the direct or incidental take of a listed species. Specific mitigation measures for direct or incidental impacts to a listed species will be determined on a case-by-case basis through agency consultation.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **BIO-3:** Development within the Planning Area should avoid, where possible, special-status natural communities and vegetation communities that provide suitable habitat for special-status species. If a proposed project will result in the loss of a special-status natural community or suitable habitat for special-status species, compensatory habitat-based mitigation is required under CEQA and the California Endangered Species Act (CESA). Mitigation will consist of preserving on-site habitat, restoring similar habitat or purchasing off-site credits from an approved mitigation bank. Compensatory mitigation will be determined through consultation with the City and/or resource agencies. An appropriate mitigation strategy and ratio will be agreed upon by the developer and lead agency to reduce project impacts to special-status natural communities to a less than significant<br>*(continued on next page)* | Prior to development project approval | DARM | | | | | | X |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Biological Resources** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **BIO-3** *(continued from previous page)*: level. Agreed-upon mitigation ratios will depend on the quality of the habitat and presence/absence of a special-status species. The specific mitigation for project level impacts will be determined on a case-by-case basis. **Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **BIO-4:** Proposed projects within the Planning Area should avoid, if possible, construction within the general nesting season of February through August for avian species protected under Fish and Game Code 3500 and the Migratory Bird Treaty Act (MBTA), if it is determined that suitable nesting habitat occurs on a project site. If construction cannot avoid the nesting season, a pre-construction clearance survey must be conducted to determine if any nesting birds or nesting activity is observed on or within 500-feet of a project site. If an active nest is observed during the survey, a biological monitor must be on site to ensure that no proposed project activities would impact the active nest. A suitable buffer will be established around the active nest until the nestlings have fledged and the nest is no longer active. Project activities *(continued on next page)* | Prior to development project approval and during construction activities | DARM | X | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Biological Resources** *(continued)***:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-4** *(continued from previous page)*:<br>may continue in the vicinity of the nest only at the discretion of the biological monitor.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **BIO-5:** If a proposed project will result in the removal or impact to any riparian habitat and/or a special-status natural community with potential to occur in the Planning Area, compensatory habitat-based mitigation shall be required to reduce project impacts. Compensatory mitigation must involve the preservation or restoration or the purchase of off-site mitigation credits for impacts to riparian habitat and/or a special-status natural community. Mitigation must be conducted in-kind or within an approved mitigation bank in the region. The specific mitigation ratio for habitat-based mitigation will be determined through consultation with the appropriate agency (*i.e.*, CDFW or USFWS) on a case-by-case basis.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Biological Resources** *(continued)*:

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| **BIO-6:** Project impacts that occur to riparian habitat may also result in significant impacts to streambeds or waterways protected under Section 1600 of Fish and Wildlife Code and Section 404 of the CWA. CDFW and/or USACE consultation, determination of mitigation strategy, and regulatory permitting to reduce impacts, as required for projects that remove riparian habitat and/or alter a streambed or waterway, shall be implemented.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |

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| **BIO-7:** Project-related impacts to riparian habitat or a special-status natural community may result in direct or incidental impacts to special-status species associated with riparian or wetland habitats. Project impacts to special-status species associated with riparian habitat shall be mitigated through agency consultation, development of a mitigation strategy, and/or issuing incidental take permits for the specific special-status species, as determined by the CDFW and/or USFWS.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Biological Resources** *(continued)*: | | | | | | | | |
| **BIO-8**: If a proposed project will result in the significant alteration or fill of a federally protected wetland, a formal wetland delineation conducted according to U.S. Army Corps of Engineers (USACE) accepted methodology is required for each project to determine the extent of wetlands on a project site. The delineation shall be used to determine if federal permitting and mitigation strategy are required to reduce project impacts. Acquisition of permits from USACE for the fill of wetlands and USACE approval of a wetland mitigation plan would ensure a "no net loss" of wetland habitat within the Planning Area. Appropriate wetland mitigation/creation shall be implemented in a ratio according to the size of the impacted wetland.<br>**Verification comments:** | Prior to development project approval | DARM | | | | | | X |
| **BIO-9:** In addition to regulatory agency permitting, Best Management Practices (BMPs) identified from a list provided by the USACE shall be incorporated into the design and construction phase of the project to ensure that no pollutants or siltation drain into a federally protected wetland. Project design features such as fencing, appropriate drainage and<br>*(continued on next page)* | Prior to development project approval; but for long-term operational BMPs, prior to issuance of occupancy | DARM | | | | | | X |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Biological Resources** *(continued)***:**

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| **BIO-9** *(continued from previous page)***:**<br>incorporating detention basins shall assist in ensuring project-related impacts to wetland habitat are minimized to the greatest extent feasible.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

**Cultural Resources:**

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|---|---|---|---|---|---|---|---|---|
| **CUL-1:** If previously unknown resources are encountered before or during grading activities, construction shall stop in the immediate vicinity of the find and a qualified historical resources specialist shall be consulted to determine whether the resource requires further study. The qualified historical resources specialist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines and the City's Historic Preservation Ordinance.<br>If the resources are determined to be unique historical resources as defined under Section 15064.5 of the CEQA Guidelines, measures shall be identified by the monitor and<br>*(continued on next page)* | Prior to commencement of, and during, construction activities | DARM | X | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Cultural Resources** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **CUL-1** *(continued from previous page)*<br>recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.<br>No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these. Any historical artifacts recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-germ preservation to allow future scientific study.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **CUL-2:** Subsequent to a preliminary City review of the project grading plans, if there is evidence that a project will include excavation or construction activities within previously undisturbed soils, a field survey and literature search for prehistoric archaeological resources shall be conducted. The following procedures shall be followed.<br>If prehistoric resources are not found during either the field survey or literature search, excavation and/or construction activities can commence. In the event that buried prehistoric<br>*(continued on next page)* | Prior to commencement of, and during, construction activities | DARM | X | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Cultural Resources** *(continued)*:

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| **CUL-2** *(continued from previous page)*<br><br>archaeological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archaeologist shall make recommendations to the City on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with CEQA Guidelines Section 15064.5.<br><br>If the resources are determined to be unique prehistoric archaeological resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any prehistoric archaeological artifacts recovered as a result of mitigation shall be provided<br><br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Cultural Resources** *(continued)***:**

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| **CUL-2** *(further continued from previous two pages)*<br>to a City-approved institution or person who is capable of providing long-term preservation to allow future scientific study.<br>If prehistoric resources are found during the field survey or literature review, the resources shall be inventoried using appropriate State record forms and submit the forms to the Southern San Joaquin Valley Information Center. The resources shall be evaluated for significance. If the resources are found to be significant, measures shall be identified by the qualified archaeologist. Similar to above, appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.<br>In addition, appropriate mitigation for excavation and construction activities in the vicinity of the resources found during the field survey or literature review shall include an archaeological monitor. The monitoring period shall be determined by the qualified archaeologist. If additional prehistoric archaeological resources are found during<br>*(continued on next page)* | *[see Page 14]* | *[see Page 14]* | |

Cultural Resources *(continued)*:

**A** - Incorporated into Project
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **CUL-2** *(further continued from previous three pages)*<br>excavation and/or construction activities, the procedure identified above for the discovery of unknown resources shall be followed.<br>**Verification comments:** | *[see Page 14]* | *[see Page 14]* | | | | | | |
| **CUL-3/GEO-1:** Subsequent to a preliminary City review of the project grading plans, if there is evidence that a project will include excavation or construction activities within previously undisturbed soils, a field survey and literature search for unique paleontological/geological resources shall be conducted. The following procedures shall be followed:<br>If unique paleontological/geological resources are not found during either the field survey or literature search, excavation and/or construction activities can commence. In the event that unique paleontological/geological resources are discovered during excavation and/or construction activities, construction shall stop in the immediate vicinity of the find and a qualified paleontologist shall be consulted to determine whether the resource requires further study. The qualified paleontologist shall make recommendations to the City on the measures that shall be implemented to protect the discovered<br>*(continued on next page)* | Prior to commencement of, and during, construction activities | DARM | X | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **CUL-3/GEO-1** *(continued from previous page)*<br>resources, including but not limited to, excavation of the finds and evaluation of the finds. If the resources are determined to be significant, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any paleontological/geological resources recovered as a result of mitigation shall be provided to a City-approved institution or person who is capable of providing long-term preservation to allow future scientific study.<br>If unique paleontological/geological resources are found during the field survey or literature review, the resources shall be inventoried and evaluated for significance. If the resources are found to be significant, mitigation measures shall be identified by the qualified paleontologist. Similar to above, appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds. In addition, appropriate mitigation for excavation and construction activities in the vicinity of the<br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Cultural Resources** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **CUL-3/GEO-1** *(further continued from previous two pages)*<br>resources found during the field survey or literature review shall include a paleontological monitor. The monitoring period shall be determined by the qualified paleontologist. If additional paleontological/geological resources are found during excavation and/or construction activities, the procedure identified above for the discovery of unknown resources shall be followed.<br>**Verification comments:** | *[see Page 17]* | *[see Page 17]* | | | | | | |
| **CUL-4:** In the event that human remains are unearthed during excavation and grading activities of any future development project, all activity shall cease immediately. Pursuant to Health and Safety Code (HSC) Section 7050.5, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98(a). If the remains are determined to be of Native American descent, the coroner shall within 24 hours notify the Native American Heritage Commission (NAHC). The NAHC shall then contact the most<br>*(continued on next page)* | Prior to commencement of, and during, construction activities | DARM | X | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
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**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Cultural Resources** *(continued)***:**

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| **CUL-4** *(continued from previous page)*<br>likely descendent of the deceased Native American, who shall then serve as the consultant on how to proceed with the remains.<br>Pursuant to PRC Section 5097.98(b), upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hazards and Hazardous Materials**

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|---|---|---|---|---|---|---|---|---|
| **HAZ-1:** Re-designate the existing vacant land proposed for low density residential located northwest of the intersection of East Garland Avenue and North Dearing Avenue and located within Fresno Yosemite International Airport Zone 1-RPZ, to Open Space.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |
| **HAZ-2:** Limit the proposed low density residential (1 to 3 dwelling units per acre) located northwest of the airport, and located within Fresno Yosemite International Airport Zone 3-Inner Turning Area, to 2 dwelling units per acre or less.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |
| **HAZ-3:** Re-designate the current area within Fresno Yosemite International Airport Zone 5-Sideline located northeast of the airport to Public Facilities-Airport or Open Space.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hazards and Hazardous Materials** *(continued)*:

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| **HAZ-4:** Re-designate the current vacant lots at the northeast corner of Kearney Boulevard and South Thorne Avenue to Public Facilities-Airport or Open Space.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |
| **HAZ-5:** Prohibit residential uses within Safety Zone 1 northwest of the Hawes Avenue and South Thorne Avenue intersection.<br>**Verification comments:** | Prior to development approvals | DARM | | | | | | X |
| **HAZ-6:** Establish an alternative Emergency Operations Center in the event the current Emergency Operations Center is under redevelopment or blocked.<br>**Verification comments:** | Prior to redevelopment of the current Emergency Operations Center | Fresno Fire Department and Mayor/ City Manager's Office | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hydrology and Water Quality**

| | | | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **HYD-1:** The City shall develop and implement water conservation measures to reduce the per capita water use to 215 gallons per capita per day.<br>**Verification comments:** | Prior to water demand exceeding water supply | Department of Public Utilities (DPU) | | | | | X | |
| **HYD-2:** The City shall continue to be an active participant in the Kings Water Authority and the implementation of the Kings Basin IRWMP.<br>**Verification comments:** | Ongoing | DPU | | | | | X | |
| **HYD-5.1:** The City and partnering agencies shall implement the following measures to reduce the impacts on the capacity of existing or planned storm drainage Master Plan collection systems to less than significant.<br>• Implement the existing Storm Drainage Master Plan (SDMP) for collection systems in drainage areas where the amount of imperviousness is unaffected by the change in land uses.<br>*(continued on next page)* | Prior to exceedance of capacity of existing stormwater drainage facilities | Fresno Metropolitan Flood Control District (FMFCD), DARM, and PW | | | | | X | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hydrology and Water Quality** *(continued)*:

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|---|---|---|---|
| **HYD-5.1** *(continued from previous page)*<br>• Update the SDMP in those drainage areas where the amount of imperviousness increased due to the change in land uses to determine the changes in the collection systems that would need to occur to provide adequate capacity for the stormwater runoff from the increased imperviousness.<br>• Implement the updated SDMP to provide stormwater collection systems that have sufficient capacity to convey the peak runoff rates from the areas of increased imperviousness.<br>Require developments that increase site imperviousness to install, operate, and maintain FMFCD approved on-site detention systems to reduce the peak runoff rates resulting from the increased imperviousness to the peak runoff rates that will not exceed the capacity of the existing stormwater collection systems.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Hydrology and Water Quality** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **HYD-5.2:** The City and partnering agencies shall implement the following measures to reduce the impacts on the capacity of existing or planned storm drainage Master Plan retention basins to less than significant:<br>Consult the SDMP to analyze the impacts to existing and planned retention basins to determine remedial measures required to reduce the impact on retention basin capacity to less than significant. Remedial measures would include:<br>• Increase the size of the retention basin through the purchase of more land or deepening the basin or a combination for planned retention basins.<br>• Increase the size of the emergency relief pump capacity required to pump excess runoff volume out of the basin and into adjacent canal that convey the stormwater to a disposal facility for existing retention basins.<br>• Require developments that increase runoff volume to install, operate, and maintain, Low Impact Development (LID) measures to reduce runoff volume to the runoff volume that will not exceed the capacity of the existing retention basins.<br>**Verification comments:** | Prior to exceedance of capacity of existing retention basin facilities | FMFCD, DARM, and PW | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hydrology and Water Quality** *(continued)*:

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| **HYD-5.3:** The City and partnering agencies shall implement the following measures to reduce the impacts on the capacity of existing or planned storm drainage Master Plan urban detention (stormwater quality) basins to less than significant.<br>Consult the SDMP to determine the impacts to the urban detention basin weir overflow rates and determine remedial measures required to reduce the impact on the detention basin capacity to less than significant. Remedial measures would include:<br>• Modify overflow weir to maintain the suspended solids removal rates adopted by the FMFCD Board of Directors.<br>• Increase the size of the urban detention basin to increase residence time by purchasing more land. The existing detention basins are already at the adopted design depth.<br>• Require developments that increase runoff volume to install, operate, and maintain, Low Impact Development (LID) measures to reduce peak runoff rates and runoff volume to the runoff rates and volumes that will not exceed the weir overflow rates of the existing urban detention basins.<br>**Verification comments:** | Prior to exceedance of capacity of existing urban detention basin (stormwater quality) facilities | FMFCD, DARM, and PW | | | | | X | |

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**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hydrology and Water Quality** *(continued)*:

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| **HYD-5.4:** The City shall implement the following measures to reduce the impacts on the capacity of existing or planned storm drainage Master Plan pump disposal systems to less than significant.<br>• Consult the SDMP to determine the extent and degree to which the capacity of the existing pump system will be exceeded.<br>• Require new developments to install, operate, and maintain FMFCD design standard on-site detention facilities to reduce peak stormwater runoff rates to existing planned peak runoff rates.<br>• Provide additional pump system capacity to maximum allowed by existing permitting to increase the capacity to match or exceed the peak runoff rates determined by the SDMP.<br>**Verification comments:** | Prior to exceedance of capacity of existing pump disposal systems | FMFCD, DARM, and PW | | | | | X | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Hydrology and Water Quality** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| • **HYD-5.5:** The City shall work with FMFCD to develop and adopt an update to the SDMP for the Southeast Development Area that would be adequately designed to collect, convey and dispose of runoff at the rates and volumes which would be generated by the planned land uses in that area.<br>**Verification comments:** | Prior to development approvals in the Southeast Development Area | FMFCD, DARM, and PW | | | | | X | |

**Public Services:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **PS-1:** As future fire facilities are planned, the fire department shall evaluate if specific environmental effects would occur. Typical impacts from fire facilities include noise, traffic, and lighting. Typical mitigation to reduce these impacts includes:<br>• *Noise:* Barriers and setbacks on the fire department sites.<br>• *Traffic:* Traffic devices for circulation and a "keep clear zone" during emergency responses.<br>• *Lighting:* Provision of hoods and deflectors on lighting fixtures on the fire department sites.<br>**Verification comments:** | During the planning process for future fire department facilities | DARM | | | | | X | |

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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

**Public Services** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **PS-2:** As future police facilities are planned, the police department shall evaluate if specific environmental effects would occur. Typical impacts from police facilities include noise, traffic, and lighting. Typical mitigation to reduce potential impacts from police department facilities includes:<br>• *Noise:* Barriers and setbacks on the police department sites.<br>• *Traffic:* Traffic devices for circulation.<br>• *Lighting:* Provision of hoods and deflectors on lighting fixtures on the police department sites.<br>**Verification comments:** | During the planning process for future Police Department facilities | DARM | | | | | X | |
| **PS-3:** As future public and private school facilities are planned, school districts shall evaluate if specific environmental effects would occur with regard to public schools, and DARM shall evaluate other school facilities. Typical impacts from school facilities include noise, traffic, and lighting. Typical mitigation to reduce potential impacts from school facilities includes:<br>*(continued on next page)* | During the planning process for future school facilities | DARM, local school districts, and the Division of the State Architect | | | | | X | |

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**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Public Services** *(continued)***:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **PS-3** *(continued from previous page)*<br>• *Noise*: Barriers and setbacks placed on school sites.<br>• *Traffic*: Traffic devices for circulation.<br>• *Lighting*: Provision of hoods and deflectors on lighting fixtures for stadium lights.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **PS-4:** As future parks and recreational facilities are planned, the City shall evaluate if specific environmental effects would occur. Typical impacts from school facilities include noise, traffic, and lighting. Typical mitigation to reduce potential impacts from park and recreational facilities includes:<br>• *Noise*: Barriers and setbacks placed on school sites.<br>• *Traffic*: Traffic devices for circulation.<br>• *Lighting*: Provision of hoods and deflectors on lighting fixtures for outdoor play area/field lights.<br>**Verification comments:** | During the planning process for future park and recreation facilities | DARM | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Public Services** *(continued)***:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **PS-5:** As future detention, court, library, and hospital facilities are planned, the appropriate agencies shall evaluate if specific environmental effects would occur. Typical impacts from court, library, and hospital facilities include noise, traffic, and lighting. Typical mitigation to reduce potential impacts includes:<br>• *Noise:* Barriers and setbacks placed on school sites.<br>• *Traffic:* Traffic devices for circulation.<br>• *Lighting:* Provision of hoods and deflectors on outdoor lighting fixtures.<br>**Verification comments:** | During the planning process for future detention, court, library, and hospital facilities | DARM, to the extent that agencies constructing these facilities are subject to City of Fresno regulation | | | | | X | |

**Utilities and Service Systems**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **USS-1:** The City shall develop and implement a wastewater master plan update.<br>**Verification comments:** | Prior to wastewater conveyance and treatment demand exceeding capacity | DPU | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems** *(continued)***:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **USS-2:** Prior to exceeding existing wastewater treatment capacity, the City shall evaluate the wastewater system and shall not approve additional development that contributes wastewater to the wastewater treatment facility that could exceed capacity until additional capacity is provided. By approximately the year 2025, the City shall construct the following improvements:<br>• Construct an approximately 70 MGD expansion of the Regional Wastewater Treatment and Reclamation Facility and obtain revised waste discharge permits as the generation of wastewater is increased.<br>• Construct an approximately 0.49 MGD expansion of the North Facility and obtain revised waste discharge permits as the generation of wastewater is increased.<br>**Verification comments:** | Prior to exceeding existing wastewater treatment capacity | DPU | | | | | X | |
| **USS-3:** Prior to exceeding existing wastewater treatment capacity, the City shall evaluate the wastewater system and shall not approve additional development that contributes wastewater to the wastewater treatment facility that could exceed capacity until additional capacity is provided. After<br>*(continued on next page)* | Prior to exceeding existing wastewater treatment capacity | DPU | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-3** *(continued from previous page)*<br>approximately the year 2025, the City shall construct the following improvements:<br>• Construct an approximately 24 MGD wastewater treatment facility within the Southeast Development Area and obtain revised waste discharge requirements as the generation of wastewater is increased.<br>• Construct an approximately 9.6 MGD expansion of the Regional Wastewater Treatment and Reclamation Facility and obtain revised waste discharge permits as the generation of wastewater is increased.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **USS-4:** A Traffic Control/Traffic Management Plan to address traffic impacts during construction of water and sewer facilities shall be prepared and implemented, subject to approval by the City (and Fresno County, when work is being done in unincorporated area roadways). The plan shall identify access and parking restrictions, pavement markings and signage, and hours of construction and for deliveries. It shall include haul routes, the notification plan, and coordination with emergency service providers and schools.<br>**Verification comments:** | Prior to construction of water and sewer facilities | PW for work in the City; PW and Fresno County Public Works and Planning when unincorporated area roadways are involved | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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| **USS-5**: Prior to exceeding capacity within the existing wastewater collection system facilities, the City shall evaluate the wastewater collection system and shall not approve additional development that would generate additional wastewater and exceed the capacity of a facility until additional capacity is provided. By approximately the year 2025, the following capacity improvements shall be provided.<br>• Orange Avenue Trunk Sewer: This facility shall be improved between Dakota and Jensen Avenues. Approximately 37,240 feet of new sewer main shall be installed and approximately 5,760 feet of existing sewer main shall be rehabilitated. The size of the new sewer main shall range from 27 inches to 42 inches in diameter. The associated project designations in the 2006 Wastewater Master Plan are RS03A, RL02, C01-REP, C02-REP, C03-REP, C04-REP, C05-REP, C06-REL and C07-REP.<br>• Marks Avenue Trunk Sewer: This facility shall be improved between Clinton Avenue and Kearney Boulevard. Approximately 12,150 feet of new sewer main shall be installed. The size of the new sewer main shall range from 33 inches to 60 inches in diameter. The associated project designations in the 2006 Wastewater Master Plan are CM1-REP and CM2-REP.<br>*(continued on next page)* | Prior to exceeding capacity within the existing wastewater collection system facilities | DPU | | | | | X | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems** *(continued)***:**

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| **USS-5** *(continued from previous page)*<br>• North Avenue Trunk Sewer: This facility shall be improved between Polk and Fruit Avenues and also between Orange and Maple Avenues. Approximately 25,700 feet of new sewer main shall be installed. The size of the new sewer main shall range from 48 inches to 66 inches in diameter. The associated project designations in the 2006 Wastewater Master Plan are CN1-REL1 and CN3-REL1.<br>• Ashlan Avenue Trunk Sewer: This facility shall be improved between Hughes and West Avenues and also between Fruit and Blackstone Avenues. Approximately 9,260 feet of new sewer main shall be installed. The size of the new sewer main shall range from 24 inches to 36 inches in diameter. The associated project designations in the 2006 Wastewater Master Plan are CA1-REL and CA2-REP.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-6:** Prior to exceeding capacity within the existing 28 pipeline segments shown in Figures 1 and 2 in Appendix J-1, the City shall evaluate the wastewater collection system and shall not approve additional development that would generate additional wastewater and exceed the capacity of one of the 28 pipeline segments until additional capacity is provided.<br>**Verification comments:** | Prior to exceeding capacity within the existing 28 pipeline segments shown in Figures 1 and 2 in Appendix J-1 of the MEIR | DPU | | | | | X | |
| **USS-7:** Prior to exceeding existing water supply capacity, the City shall evaluate the water supply system and shall not approve additional development that demand additional water until additional capacity is provided. By approximately the year 2025, the following capacity improvements shall be provided.<br>• Construct an approximately 80 million gallon per day (MGD) surface water treatment facility near the intersection of Armstrong and Olive Avenues, in accordance with Chapter 9 and Figure 9-1 of the City of Fresno Metropolitan Water Resources Management Plan Update (2014 Metro Plan Update) Phase 2 Report, dated January 2012.<br>*(continued on next page)* | Prior to exceeding existing water supply capacity | DPU | | | | | X | |

**A** - Incorporated into Project **B** - Mitigated **C** - Mitigation in Process **D** - Responsible Agency Contacted **E** - Part of City-Wide Program **F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems** *(continued)*:

| | | | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-7** *(continued from previous page)*<br>• Construct an approximately 30 MGD expansion of the existing northeast surface water treatment facility for a total capacity of 60 MGD, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct an approximately 20 MGD surface water treatment facility in the southwest portion of the City, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |
| **USS-8:** Prior to exceeding capacity within the existing water conveyance facilities, the City shall evaluate the water conveyance system and shall not approve additional development that would demand additional water and exceed the capacity of a facility until additional capacity is provided. The following capacity improvements shall be provided by approximately 2025.<br>• Construct 65 new groundwater wells, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>*(continued on next page)* | Prior to exceeding capacity within the existing water conveyance facilities | DPU | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-8** *(continued from previous page)*<br>• Construct a 2.0 million gallon potable water reservoir (Reservoir T2) near the intersection of Clovis and California Avenues, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct a 3.0 million gallon potable water reservoir (Reservoir T3) near the intersection of Temperance and Dakota Avenues, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct a 3.0 million gallon potable water reservoir (Reservoir T4) in the Downtown Planning Area, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct a 4.0 million gallon potable water reservoir (Reservoir T5) near the intersection of Ashlan and Chestnut Avenues, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct a 4.0 million gallon potable water reservoir (Reservoir T6) near the intersection of Ashlan Avenue and Highway 99, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems** *(continued)***:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-8** *(continued from previous two pages)*<br>• Construct 50.3 miles of regional water transmission mains ranging in size from 24-inch to 48-inch diameter, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>• Construct 95.9 miles of 16-inch diameter transmission grid mains, in accordance with Chapter 9 and Figure 9-1 of the 2014 Metro Plan Update.<br>**Verification comments:** | *[see Page 37]* | *[see Page 37]* | | | | | | |
| **USS-9:** Prior to exceeding capacity within the existing water conveyance facilities, the City shall evaluate the water conveyance system and shall not approve additional development that would demand additional water and exceed the capacity of a facility until additional capacity is provided. The following capacity improvements shall be provided after approximately the year 2025 and additional water conveyance facilities shall be provided prior to exceedance of capacity within the water conveyance facilities to accommodate full buildout of the General Plan Update.<br>*(continued on next page)* | Prior to exceeding capacity within the existing water conveyance facilities | DPU | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems** *(continued)*:

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| **USS-9** *(continued from previous page)*<br>• Construct a 4.0 million gallon potable water reservoir (SEDA Reservoir 1) within the northern part of the Southeast Development Area.<br>• Construct a 4.0 million gallon potable water reservoir (SEDA Reservoir 2) within the southern part of the Southeast Development Area.<br>Additional water conveyance facilities shall be provided prior to exceedance of capacity within the water conveyance facilities to accommodate full buildout of the General Plan Update.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

**Utilities and Service Systems - *Hydrology and Water Quality***

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| **USS-10:** In order to maintain Fresno Irrigation District canal operability, FMFCD shall maintain operational intermittent flows during the dry season, within defined channel capacity and downstream capture capabilities, for recharge.<br>**Verification comments:** | During the dry season | Fresno Irrigation District (FID) | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

**Utilities and Service Systems - *Biological Resources:***

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-11:** When FMFCD proposes to provide drainage service outside of urbanized areas:<br>(a) FMFCD shall conduct preliminary investigations on undeveloped lands outside of highly urbanized areas. These investigations shall examine wetland hydrology, vegetation and soil types. These preliminary investigations shall be the basis for making a determination on whether or not more in-depth wetland studies shall be necessary. If the proposed project site does not exhibit wetland hydrology, support a prevalence of wetland vegetation and wetland soil types then no further action is required.<br>(b) Where proposed activities could have an impact on areas verified by the Corps as jurisdictional wetlands or waters of the U.S. (urban and rural streams, seasonal wetlands, and vernal pools), FMFCD shall obtain the necessary Clean Water Act, Section 404 permits for activities where fill material shall be placed in a wetland, obstruct the flow or circulation of waters of the United States, impair or reduce the reach of such waters. As part of FMFCD's Memorandum of Understanding with CDFG, Section 404 and 401 permits would be obtained from the U.S. Army Corps of Engineers and from the<br>*(continued on next page)* | Prior to development approvals outside of highly urbanized areas | California Regional Water Quality Control Board (RWQCB), and USACE | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)***:**

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| **USS-11** *(continued from previous page)*<br>Regional Water Quality Control Board for any activity involving filling of jurisdictional waters). At a minimum, to meet "no net loss policy," the permits shall require replacement of wetland habitat at a 1:1 ratio.<br>(c) Where proposed activities could have an impact on areas verified by the Corps as jurisdictional wetlands or waters of the U.S. (urban and rural streams, seasonal wetlands, and vernal pools), FMFCD shall submit and implement a wetland mitigation plan based on the wetland acreage verified by the U.S. Army Corps of Engineers. The wetland mitigation plan shall be prepared by a qualified biologist or wetland scientist experienced in wetland creation, and shall include the following or equally effective elements:<br>i. Specific location, size, and existing hydrology and soils within the wetland creation area.<br>ii. Wetland mitigation techniques, seed source, planting specifications, and required buffer setbacks. In addition, the mitigation plan shall ensure adequate water supply is provided to the created wetlands in order to maintain the proper<br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)****:***

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| **USS-11** *(continued from previous two pages)*<br>hydrologic regimes required by the different types of wetlands created. Provisions to ensure the wetland water supply is maintained in perpetuity shall be included in the plan.<br>iii. A monitoring program for restored, enhanced, created, and preserved wetlands on the project site. A monitoring program is required to meet three objectives; 1) establish a wetland creation success criteria to be met; 2) to specify monitoring methodology; 3) to identify as far as is possible, specific remedial actions that will be required in order to achieve the success criteria; and 4) to document the degree of success achieved in establishing wetland vegetation.<br>(d) A monitoring plan shall be developed and implemented by a qualified biologist to monitor results of any on-site wetland restoration and creation for five years. The monitoring plan shall include specific success criteria, frequency and timing of monitoring, and assessment of whether or not maintenance activities are being carried out and how these shall be adjusted if necessary.<br>*(continued on next page)* | *[see Page 41]* | *[see Page 41]* | |

**Utilities and Service Systems - *Biological Resources* *(continued)*:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-11** *(continued from previous three pages)*<br>If monitoring reveals that success criteria are not being met, remedial habitat creation or restoration should be designed and implemented by a qualified biologist and subject to five years of monitoring as described above.<br>Or<br>(e) In lieu of developing a mitigation plan that outlines the avoidance, purchase, or creation of wetlands, FMFCD could purchase mitigation credits through a Corps approved Mitigation Bank.<br>**Verification comments:** | *[see Page 41]* | *[see Page 41]* | | | | | | |
| **USS-12:** When FMFCD proposes to provide drainage service outside in areas that support seasonal wetlands or vernal pools:<br>(a) During facility design and prior to initiation of ground disturbing activities in areas that support seasonal wetlands or vernal pools, FMFCD shall conduct a preliminary rare plant assessment. The assessment will determine the likelihood on whether or not the project site could support rare plants. If it is determined that the project site would not support rare plants, then no further<br>*(continued on next page)* | During facility design and prior to initiation of ground disturbing activities in areas that support seasonal wetlands or vernal pools | California Department of Fish & Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)****:***

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| **USS-12** *(continued from previous page)*<br>action is required. However, if the project site has the potential to support rare plants; then a rare plant survey shall be conducted. Rare plant surveys shall be conducted by qualified biologists in accordance with the most current CDFG/USFWS guidelines or protocols and shall be conducted at the time of year when the plants in question are identifiable.<br>(b) Based on the results of the survey, prior to design approval, FMFCD shall coordinate with CDFG and/or implement a Section 7 consultation with USFWS, shall determine whether the project facility would result in a significant impact to any special status plant species. Evaluation of project impacts shall consider the following:<br>• The status of the species in question (*e.g.*, officially listed by the State or Federal Endangered Species Acts).<br>• The relative density and distribution of the on-site occurrence versus typical occurrences of the species in question.<br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)*:

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| **USS-12** *(continued from previous two pages)*<br>• The habitat quality of the on-site occurrence relative to historic, current or potential distribution of the population.<br>(c) Prior to design approval, and in consultation with the CDFG and/or the USFWS, FMFCD shall prepare and implement a mitigation plan, in accordance with any applicable State and/or federal statutes or laws, that reduces impacts to a less than significant level.<br>**Verification comments:** | *[see Page 44]* | *[see Page 44]* | | | | | | |
| **USS-13:** When FMFCD proposes to provide drainage service outside in areas that support seasonal wetlands or vernal pools:<br>(a) During facility design and prior to initiation of ground disturbing activities in areas that support seasonal wetlands or vernal pools, FMFCD shall conduct a preliminary survey to determine the presence of listed vernal pool crustaceans.<br>*(continued on next page)* | During facility design and prior to initiation of ground disturbing activities in areas that support seasonal wetlands or vernal pools | CDFW and USFWS | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)*:

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| **USS-13** *(continued from previous page)*<br>(b) If potential habitat (vernal pools, seasonally inundated areas) or fairy shrimp exist within areas proposed to be disturbed, FMFCD shall complete the first and second phase of fairy shrimp presence or absence surveys. If an absence finding is determined and accepted by the USFWS, then no further mitigation shall be required for fairy shrimp.<br>(c) If fairy shrimp are found to be present within vernal pools or other areas of inundation to be impacted by the implementation of storm drainage facilities, FMFCD shall mitigate impacts on fairy shrimp habitat in accordance with the USFWS requirements of the Programmatic Biological Opinion. This shall include on-site or off-site creation and/or preservation of fairy shrimp habitat at ratios ranging from 3:1 to 5:1 depending on the habitat impacted and the choice of on-site or off-site mitigation. Or mitigation shall be the purchase of mitigation credit through an accredited mitigation bank.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems - *Biological Resources*** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-14:** When FMFCD proposes to construct drainage facilities in an area where elderberry bushes may occur:<br>(a) During facility design and prior to initiation of construction activities, FMFCD shall conduct a project-specific survey for all potential Valley Elderberry Longhorn Beetle (VELB) habitats (elderberry shrubs), including a stem count and an assessment of historic or current VELB habitat.<br>(b) FMFCD shall avoid and protect all potential identified VELB habitat where feasible.<br>(c) Where avoidance is infeasible, develop and implement a VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to either Section 7 or Section 10(a) of the Federal Endangered Species Act. The mitigation plan shall include, but might not be limited to, relocation of elderberry shrubs, planting of elderberry shrubs, and monitoring of relocated and planted elderberry shrubs.<br>**Verification comments:** | During facility design and prior to initiation of construction activities | CDFW and USFWS | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)***:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-15:** Prior to ground disturbing activities during nesting season (March through July) for a project that supports bird nesting habitat, FMFCD shall conduct a survey of trees. If nests are found during the survey, a qualified biologist shall assess the nesting activity on the project site. If active nests are located, no construction activities shall be allowed within 250 feet of the nest until the young have fledged. If construction activities are planned during the no n-breeding period (August through February), a nest survey is not necessary.<br>**Verification comments:** | Prior to ground disturbing activities during nesting season (March through July) for a project that supports bird nesting habitat | CDFW and USFWS | | | | | X | |
| **USS-16:** When FMFCD proposes to construct drainage facilities in an area that supports bird nesting habitat:<br>(a) FMFCD shall conduct a pre-construction breeding-season survey (approximately February 1 through August 31) of proposed project sites in suitable habitat (levee and canal berms, open grasslands with suitable burrows) during the same calendar year that construction is planned to begin. If phased construction procedures are planned for the proposed project, the results of the above survey shall be valid only for the season when it is conducted.<br>*(continued on next page)* | Prior to ground disturbing activities during nesting season (March through July) for a project that supports bird nesting habitat | CDFW and USFWS | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
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**Utilities and Service Systems - *Biological Resources*** *(continued)*:

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|---|---|---|---|
| **USS-16** *(continued from previous page)*<br>(b) During the construction stage, FMFCD shall avoid all burrowing owl nest sites potentially disturbed by project construction during the breeding season while the nest is occupied with adults and/or young. The occupied nest site shall be monitored by a qualified biologist to determine when the nest is no longer used. Avoidance shall include the establishment of a 160-foot diameter non-disturbance buffer zone around the nest site. Disturbance of any nest sites shall only occur outside of the breeding season and when the nests are unoccupied based on monitoring by a qualified biologist. The buffer zone shall be delineated by highly visible temporary construction fencing.<br>Based on approval by CDFG, pre-construction and pre-breeding season exclusion measures may be implemented to preclude burrowing owl occupation of the project site prior to project-related disturbance. Burrowing owls can be passively excluded from potential nest sites in the construction area, either by closing the burrows or placing one-way doors in the burrows according to current CDFG protocol. Burrows shall be examined not more than 30 days before construction to ensure that no owls have recolonized the area of construction.<br>*(continued on next page)* | *[see previous page]* | *[see previous page]* | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems - *Biological Resources*** *(continued)*:

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-16** *(continued from previous two pages)*<br>For each burrow destroyed, a new burrow shall be created (by installing artificial burrows at a ratio of 2:1 on protected lands nearby.<br>**Verification comments:** | *[see Page 49]* | *[see Page 49]* | | | | | | |
| **USS-17:** When FMFCD proposes to construct drainage facilities in the San Joaquin River corridor:<br>(a) FMFCD shall not conduct instream activities in the San Joaquin River between October 15 and April 15. If this is not feasible, FMFCD shall consult with the National Marine Fisheries Service and CDFW on the appropriate measures to be implemented in order to protect listed salmonids in the San Joaquin River.<br>(b) Riparian vegetation shading the main–channel that is removed or damaged shall be replaced at a ratio and quantity sufficient to maintain the existing shading of the channel. The location of replacement trees on or within<br>*(continued on next page)* | During instream activities conducted between October 15 and April 15 | National Marine Fisheries Service (NMFS), CDFW, and Central Valley Flood Protection Board (CVFPB) | | | | | | X |

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**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems / *Biological Resources*** *(continued)***:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-17** *(continued from previous page)*<br>FMFCD berms, detention ponds or river channels shall be approved by FMFCD and the Central Valley Flood Protection Board.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

**Utilities and Service Systems – *Recreation / Trails*:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-18:** When FMFCD updates its District Service Plan:<br>Prior to final design approval of all elements of the District Services Plan, FMFCD shall consult with Fresno County, City of Fresno, and City of Clovis to determine if any element would temporarily disrupt or permanently displace adopted existing or planned trails and associated recreational facilities as a result of the proposed District Services Plan. If the proposed project would not temporarily disrupt or permanently displace adopted existing or planned trails, no further mitigation is necessary. If the proposed project would have an effect on the trails and associated facilities, FMFCD shall implement the following:<br>*(continued on next page)* | Prior to final design approval of all elements of the District Services Plan | DARM, PW, City of Clovis, and County of Fresno | | | | | | X |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems – *Recreation / Trails* (*continued*):**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **USS-18** *(continued from previous page)*<br>(a) If short-term disruption of adopted existing or planned trails and associated recreational facilities occur, FMFCD shall consult and coordinate with Fresno County, City of Fresno, and City of Clovis to temporarily re-route the trails and associated facilities.<br>(b) If permanent displacement of the adopted existing or planned trails and associated recreational facilities occur, the appropriate design modifications to prevent permanent displacement shall be implemented in the final project design or FMFCD shall replace these facilities.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | | | | | | |

**Utilities and Service Systems – *Air Quality*:**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **USS-19:** When District drainage facilities are constructed, FMFCD shall:<br>(a) Minimize idling time of construction equipment vehicles to no more than ten minutes, or require that engines be shut off when not in use.<br>*(continued on next page)* | During storm water drainage facility construction activities | Fresno Metropolitan Flood Control District and SJVAPCD | | | | | | X |

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**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|

**Utilities and Service Systems – *Air Quality* (*continued*):**

| | | | |
|---|---|---|---|
| **USS-19** *(continued from previous page)*<br>(b) Construction shall be curtailed as much as possible when the Air Quality Index (AQI) is above 150. AQI forecasts can be found on the SJVAPCD web site.<br>(c) Off-road trucks should be equipped with on-road engines if possible.<br>(d) Construction equipment should have engines that meet the current off-road engine emission standard (as certified by CARB), or be re-powered with an engine that meets this standard.<br>**Verification comments:** | *[see previous page]* | *[see previous page]* | |

**Utilities and Service Systems – *Adequacy of Storm Water Drainage Facilities*:**

| | | | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **USS-20:** Prior to exceeding capacity within the existing storm water drainage facilities, the City shall coordinate with FMFCD to evaluate the storm water drainage system and shall not approve additional development that would convey additional storm water to a facility that would experience an exceedance of capacity until the necessary additional capacity is provided.<br>**Verification comments:** | Prior to exceeding capacity within the existing storm water drainage facilities | FMFCD, PW, and DARM | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Utilities and Service Systems – *Adequacy of Water Supply Capacity*:** | | | | | | | | |
| **USS-21:** Prior to exceeding existing water supply capacity, the City shall evaluate the water supply system and shall not approve additional development that demand additional water until additional capacity is provided. By approximately the year 2025, the City shall construct an approximately 25,000 AF/year tertiary recycled water expansion to the Fresno-Clovis Regional Wastewater Reclamation Facility in accordance with the 2013 Recycled Water Master Plan and the 2014 City of Fresno Metropolitan Water Resources Management Plan update.<br>Implementation of Mitigation Measure USS-5 is also required prior to approximately the year 2025.<br>**Verification comments:** | Prior to exceeding existing water supply capacity | DPU and DARM | | | | | X | |
| **Utilities and Service Systems – *Adequacy of Landfill Capacity*:** | | | | | | | | |
| **USS-22:** Prior to exceeding landfill capacity, the City shall evaluate additional landfill locations and shall not approve additional development that could contribute solid waste to a landfill that is at capacity until additional capacity is provided.<br>**Verification comments:** | Prior to exceeding landfill capacity | DPU and DARM | | | | | X | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

# Supplemental Mitigation Measure Monitoring Checklist for the BDM Mixed Use Development Project EA

**Date February 2021**

**INCORPORATING MEASURES FROM THE ENVIRONMENTAL ASSESSMENT (EA) PREPARED IN June 2020 FOR BDM Mixed-Use Development Project (No. P20-00824, P20-00636, P20-00635, and P20-00634)**

This mitigation measure monitoring and reporting checklist was prepared pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15097 and Section 21081.6 of the Public Resources Code (PRC).

Letter designations to the right of each mitigation measure listed in this Exhibit note how the mitigation measure relates to the environmental assessment of the above-listed project, according to the key found at right and at the bottoms of the following pages:

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Progress
**D** - Responsible Agency Contacted
**E** - Part of City-wide Program
**F** - Not Applicable

The timing of implementing each mitigation measure is identified in in the checklist, as well as identifies the entity responsible for verifying that the mitigation measures applied to a project are performed.  Project applicants are responsible for providing evidence that mitigation measures are implemented.  As lead agency, the City of Fresno is responsible for verifying that mitigation is performed/completed.

**Description of project:**

Applications No. P20-00824 (ABC License), P20-00636 (Conditional Use Permit), P20-00635 (Plan Amendment – Rezone), and P20-00634 (Development Permit was filed by Nick Yovino of California Land Consulting, on behalf of Hamel Investment Properties LLC. The project proposes an integrated mixed-use development of a 12.18-acre site that will be subdivided into 11 parcels via a Parcel Map (APN: 480-030-60) within the Roosevelt Community Plan area in south Fresno. Roosevelt Community Plan policies do not apply to the proposed project. The City of Fresno is arranging to repeal several community plans including the Roosevelt Community Plan. The dwelling units will be distributed within the four-story multi-family residential buildings. All units will be rented at market rate. Three access points are proposed along Jensen Avenue (Super Arterial) and two points along Maple Avenue (Collector).

The following mitigation measures have been added in addition to the MEIR mitigation measures provided.

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **AIR-1: Comply with SJVAPCD's Indirect Source Review** | Prior to | DARM | X | | | | | |

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**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **Rule (Rule 9510)** Operation of the proposed project shall comply with SJVAPCD's ISR rule (Rule 9510). Measures that may be implemented to reduce NOx operational emission may include, but are not limited to, the following:<br>• Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.<br>• Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50% tree coverage within 10 years of construction using low ROG emitting, low maintenance native drought-resistant trees.<br>• Plant drought tolerant native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer.<br>• Utilize high-efficiency gas or solar water heaters, beyond that required by current building codes.<br>• Install low water consumption landscape. Use native plants that do not require watering after they are well established or minimal watering during the summer months and are low ROG emitting.<br>• Install parking spaces for alternatively fueled vehicles, beyond that required by current building codes. | development project approval | | | | | | | |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **AIR-1** *(Continued from previous page):*<br>• Use low-VOC content paints during construction and long-term facility maintenance. To the extent possible construction materials that are prefinished or that do not require the application of architectural coatings should be used.<br>• Install energy-saving systems in rooms that reduce energy usage associated with HVAC systems and appliances when rooms are not occupied, except where such systems would pose a safety or health concern.<br>• Provide a pedestrian access network that internally links all uses and connects all existing or planned external streets and pedestrian facilities contiguous with the project site.<br>• Provide on-site bicycle parking beyond those required by current building standards and related facilities to support long-term use (lockers, or a locked room with standard racks and access limited to bicyclists only).<br>• Implement traffic calming improvements as appropriate (e.g., marked crosswalks, countdown signal timers, curb extensions, speed tables, raised crosswalks, median islands, minicircles, tight corner radii, etc.)<br>**Verification comments:** | | | | | | | | |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **AIR-2: Implement a Voluntary Emissions Reduction Agreement (VERA) with the SJVAPCD to Reduce Operational Emissions of ROG, NOX, and PM10:** A VERA shall be entered into with the SJVAPCD to reduce operational emissions NOx to less than 10 tons/year. Operational emissions of NOx shall be reduced in excess of the reductions required per compliance with SJVAPCD's ISR Rule (Refer to Mitigation Measure AQ-1). Emission reductions may be achieved by use of newer, low-emission equipment, implementation of on-site or off-site mitigation, and/or the funding of offsite mitigation, through participation in the SJVAPCD's offsite mitigation program. The VERA shall be reviewed and approved by the SJVAPCD prior to issuance of construction/grading permits by the City of Fresno. Documentation confirming compliance with the VERA shall be submitted to the City of Fresno Planning Department prior to issuance of final discretionary approval. Development and implementation of the VERA shall be fully funded by the project. With approval by SJVAPCD, the VERA may also be used to demonstrate compliance with emission reductions required by SJVAPCD's ISR Rule (9510).<br><br>**Verification comments:** | | DARM | X | | | | | |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-4: Pre-activity Surveys for Special-Status Species:** Prior to ground disturbing activities, a qualified wildlife biologist shall conduct a biological clearance survey no more than 30 calendar days prior to the onset of construction. The clearance survey shall include walking transects to identify presence of San Joaquin kit fox, American badger, Swainson's hawk, burrowing owl, nesting birds and other special-status species or signs of, and sensitive natural communities. The pre-activity survey shall be walked by no greater than 30-foot transects for 100 percent coverage of the Project site and the 250-foot buffer, where feasible. If no evidence of special-status species is detected, no further action is required but measure MM BIO-3 shall be implemented.<br>**Verification comments:** | Prior to development project approval | DARM | X | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-5: Avoidance of San Joaquin Kit Fox and American badger dens:** If dens/burrows that could support the San Joaquin kit fox or American badger are discovered during the pre-activity surveys conducted under MM BIO-1, the avoidance buffers outlined below shall be established. No work would occur within these buffers unless the biologist approves and monitors the activity.<br>• Potential Den – 50 feet<br>• Atypical Den – 50 feet (includes pipes and other man-made structures)<br>• Known Den – 100 Feet<br>• Natal/Pupping Den – 500 feet<br>**Verification comments:** | Prior to development project approval | DARM | X | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-6: Avoidance and Minimization Measures for San Joaquin Kit Fox.** 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* (USFWS 2011).<br><br>a. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers. 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 the construction or Project site.<br><br>b. Construction-related vehicle traffic shall be restricted to established roads and predetermined ingress and egress corridors, staging, and parking areas. Vehicle speeds shall not exceed 20 miles per hour (mph) within the Project site.<br><br>*(continued on next page)* | Prior to development project approval | DARM | X | | | | | |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-6** *(continued from previous page)*: | | | | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| c. To prevent inadvertent entrapment of kit fox or other animals during construction, the contractor shall cover all excavated, steep-walled holes or trenches more than two feet deep at the close of each workday with plywood or similar materials. If holes or trenches cannot be covered, one or more escape ramps constructed of earthen fill or wooden planks shall be installed in the trench. Before such holes or trenches are filled, the contractor shall thoroughly inspect them for entrapped animals. All construction-related pipes, culverts, or similar structures with a diameter of four-inches or greater that are stored on the Project site shall be thoroughly inspected for wildlife before the pipe is subsequently buried, capped, or otherwise used or moved in anyway. If at any time an entrapped or injured kit fox is discovered, work in the immediate area shall be temporarily halted and USFWS and CDFW shall be consulted.<br><br>d. 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 four inches or greater that are stored at a construction site for<br><br>*(continued on next page)* | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|
| **BIO-6** *(continued from previous page)*:<br>d. one or more overnight periods shall 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 shall not be moved until the USFWS and CDFW 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.<br>e. No pets, such as dogs or cats, shall be permitted on the Project sites to prevent harassment, mortality of kit foxes, or destruction of dens.<br>*(continued on next page)* | | | | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-6** *(continued from previous page)*: g. Use of anti-coagulant rodenticides and herbicides in Project areas shall 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 shall 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 USFWS and | | | | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| CDFW. If rodent control must be conducted, zinc phosphide shall be used because of the proven lower risk to kit foxes.<br><br>h. 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 number shall be provided to the USFWS.<br><br>*(continued on next page)* | | | | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-6** *(continued from previous page)*:<br>i. All sightings of the San Joaquin 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 shall also be provided to the Service at the address below.<br>j. Any Project-related information required by the USFWS 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 W 2605, Sacramento, California 95825-1846, phone: (916) 414-6620 or (916) 414-6600.<br>**Verification comments:** | | | | | | | | |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-7: Pre-activity Surveys for Nesting Birds.** If construction is planned outside the nesting period for raptors (other than the burrowing owl) and migratory birds (February 15 to August 31), no mitigation shall be required. If construction is planned during the nesting season for migratory birds and raptors, a pre-activity survey to identify active bird nests shall be conducted by a qualified biologist to evaluate the site and a 250-foot buffer for migratory birds and a 500-foot buffer for | Prior to development project approval | DARM | X | | | | | |

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| raptors. If nesting birds are identified during the survey, active raptor nests shall be avoided by 500 feet and all other migratory bird nests shall be avoided by 250 feet. Avoidance buffers may be reduced if a qualified on-site monitor determines that encroachment into the buffer area is not affecting nest building, the rearing of young, or otherwise affecting the breeding behaviors of the resident birds. Because nesting birds can establish new nests or produce a second or even third clutch at any time during the nesting season, nesting bird surveys shall be repeated every 30 days as construction activities are occurring throughout the nesting season.<br>No construction or earth-moving activity shall occur within a non-disturbance buffer until it is determined by a qualified biologist that the young have fledged (left the nest) and have attained sufficient flight skills to avoid Project construction areas. Once the migratory birds or raptors have completed nesting and young have fledged, disturbance buffers will no longer be needed and can be removed, and monitoring can cease.<br>**Verification comments:** | | | | | | | | |
| **BIO-8: Pre-activity Surveys for Swainson's Hawk Nests**. If all Project activities are completed outside of the Swainson's hawk nesting season (February 15 through August 31), this mitigation measure shall need not be applied. If no Swainson's hawk nests are found, no further action is required.<br><br>If construction is planned during the nesting season, a | Prior to development project approval | DARM | X | | | | | X |

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| preconstruction survey shall be conducted by a qualified biologist to evaluate the site and a 0.5-mile buffer around the site for active Swainson's hawk nests. If potential Swainson's hawk nests or nesting substrates occur within 0.5 mile of the Project site, then those nests or substrates must be monitored for Swainson's hawk nesting activity on a routine and repeating basis throughout the breeding season, or until Swainson's hawks or other raptor species are verified to be using them. Monitoring shall be conducted according to the protocol outlined in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). The protocol recommends that ten visits be made to each nest or nesting site: one during January 1-March 20 to identify potential nest sites, three during March 20-April 5, three during April 5-April 20, and three during June 10-July 30. To meet the minimum level of protection for the species, surveys shall be completed for at least the two survey periods immediately prior to Project-related ground disturbance activities. <br><br> *(continued on next page)* <br> **BIO-8** *(continued from previous page)***:** <br> During the nesting period, active Swainson's hawk nests shall be avoided by 0.5 mile unless this avoidance buffer is reduced through consultation with the CDFW and/or USFWS. If an active Swainson's hawk nest is located within 500 feet of the | | | | | | | | |

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**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| Project or within the Project site, the Project proponent shall contact CDFW for guidance<br>**Verification comments:** | | | | | | | | |
| **BIO-9: 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 will complete an assessment of the potential for current construction activities to impact the nest. The assessment will 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 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.<br>*(continued on next page)*<br>**BIO-9** *(continued from previous page)***:**<br>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 | Prior to development project approval | DARM | X | | | | | |

**A** - Incorporated into Project
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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| sensitivity of the nest location, the sensitivity of the nesting Swainson's hawk to disturbances, and at the discretion of the qualified biologist.<br>**Verification comments:** | | | | | | | | |
| **BIO-10: Pre-activity Surveys for Western burrowing owl Burrows.** A qualified biologist shall conduct a pre-activity survey on the Project site and within 500 feet of its perimeter, where feasible, to identify the presence of the burrowing owl. The survey shall be conducted between 14 and 30 days prior to the start of construction activities. If any western burrowing owl burrows are observed during the pre-activity survey, avoidance measures shall be consistent with those included in the CDFW staff report on western burrowing owl mitigation (CDFG 2012). If occupied western burrowing owl burrows are observed outside of the breeding season (September 1 through January 31) and within 250 feet of proposed construction activities, a passive relocation effort may be instituted in accordance with the guidelines established by the California Western burrowing owl Consortium (1993) and the California Department of Fish and Wildlife (2012).<br>*(continued on next page)*<br>**BIO-10** *(continued from previous page)***:**<br>During the breeding season (February 1 through August 31), a 500-foot (minimum) buffer zone shall be maintained unless a | Prior to development project approval | DARM | X | | | | | |

**A** - Incorporated into Project
**B** - Mitigated
**C** - Mitigation in Process
**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| qualified biologist verifies through noninvasive methods that either the birds have not begun egg laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival.<br><br>If western burrowing owl are found to occupy the Project site and avoidance is not possible, burrow exclusion may be conducted by qualified biologists only during the non-breeding season, before breeding behavior is exhibited, and after the burrow is confirmed empty through non-invasive methods (surveillance). Replacement or occupied burrows shall consist of artificial burrows at a ratio of one burrow collapsed to one artificial burrow constructed (1:1). Ongoing surveillance of the Project site during construction activities shall occur at a rate sufficient to detect Burrowing owl, if they return.<br><br>In addition, impacts to occupied western burrowing owl burrows shall be avoided in accordance with the following table unless a qualified biologist approved by CDFW verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.<br><br>*(continued on next page)*<br>**BIO-10** *(continued from previous page)*: | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|

| Location | Time of Year | Level of Disturbance | | |
|---|---|---|---|---|
| | | Low | Med | High |
| Nesting sites | April 1-Aug 15 | 200* | 500 m | 500 m |
| Nesting sites | Aug 16-Oct 15 | 200 m | 200 m | 500 m |
| Nesting sites | Oct 16-Mar 31 | 50 m | 100 m | 500 m |

**Verification comments:**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-11: Worker Environmental Awareness Training.** Prior to ground disturbance activities, or within one week of being deployed at the Project site for newly hired workers, all construction workers at the Project site shall attend a Construction Worker Environmental Awareness Training and Education Program, developed and presented by a qualified biologist. | Within one week of construction initiation. | DARM | X | | | | | |

*(continued on next page)*

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| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **BIO-11** *(continued from previous page)*:<br>The Construction Worker Environmental Awareness Training and Education Program shall be presented by the biologist and shall include information on the life history wildlife and plant species that may be encountered during construction activities, their legal protections, the definition of "take" under the Endangered Species Act, measures the Project operator is implementing to protect the species, reporting requirements, specific measures that each worker must employ to avoid take of the species, and penalties for violation of the Act. Identification and information regarding special-status or other sensitive species with the potential to occur on the Project site shall also be provided to construction personnel. The program shall include:<br>• An acknowledgement form signed by each worker indicating that environmental training has been completed.<br>• A copy of the training transcript and/or training video/CD, as well as a list of the names of all personnel who attended the training and copies of the signed acknowledgement forms shall be maintain on site for the duration of construction activities.<br>**Verification comments:** | | | | | | | | |

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**SUPPLEMENTAL MITIGATION MEASURE MONITORING CHECKLIST FOR the BDM MIXED USE DEVELOPMENT PROJECT** **Date: FEBRUARY 2021**

| MITIGATION MEASURE | WHEN IMPLEMENTED | COMPLIANCE VERIFIED BY | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| **TRANSPO-1:** Require the installation of a Class II Bike Path along the Project's Maple Frontage | Prior to the issuance of final occupancy | DARM | X | | | | | |

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**D** - Responsible Agency Contacted
**E** - Part of City-Wide Program
**F** - Not Applicable