TRANSPORTATION IMPACT ANALYSIS

Kaiser Manteca ED Expansion

PREPARED FOR:

CITY OF MANTECA

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CONTENTS

Contents iii
Tables v
Figures vi
Executive Summary i
Study Area i
Project Trip Estimates ii
Intersection Level of Service ii
Signal Warrants Analysis iii
Queueing Analysis iii
Multimodal Evaluation iii
Project Site Evaluation iv
1. Introduction 5
1.1 Study Area 5
1.2 Study Scenarios 9
1.3 Study Methodology 9
1.4 Thresholds of Deficiency 11
1.5 Queueing 11
1.6 Report Organization 12
2. Existing Conditions 13
2.1 Existing Roadway Network 13
2.2 Existing Transit Facilities 14
2.3 Existing Pedestrian Facilities 17
2.4 Existing Bicycle Facilities 17
2.5 Existing Lane Configuration and Traffic Control 18
2.6 Existing Peak-Hour Turning Movement Volumes 18
2.7 Existing Intersection Level of Service 18
3. Background Conditions & Background Plus Project Conditions 23
3.1 Background Conditions 23
3.2 Background Plus Project Conditions 26
4. Cumulative Conditions & Cumulative Plus Project Conditions 35
4.1 Cumulative Conditions 35
4.2 Cumulative plus Project Conditions 38
5. Signal Warrants Analysis 42
6. Queueing Analysis 49
7. Multimodal Evaluation 52
7.1 Transit Facilities 52
7.2 Bicycle Facilities 52
7.3 Pedestrian Facilities 52

8. Project Site Evaluation 53
8.1 Off-Street Parking 53
8.2 On-Site Circulation 53
9. Improvements and Recommendations 55
9.1 Intersection Level of Service 55
9.2 Intersection Queuing 55
9.3 Signal Warrant 55
Appendices 56

TABLES

Table 1 – Study Intersections 7

Table 2 – Intersection Level of Service Definitions 10

Table 3 – Transit Services Schedules 16

Table 4 – Existing Conditions Intersection Level of Service Summary 18

Table 5 – Background Conditions Intersection Level of Service Summary 26

Table 6 – Project Trip Generation 27

Table 7 – Background plus Project Conditions Intersection Level of Service Summary 34

Table 8 – Cumulative Conditions Intersection Level of Service Summary 38

Table 9 – Cumulative plus Project Conditions Intersection Level of Service Summary 41

Table 10 – Peak Hour Warrants 42

Table 11 – Study Intersection Turn Pocket Queueing Analysis – Existing, Background, and Background plus Project Conditions 50

Table 12 – Study Intersection Turn Pocket Queueing Analysis – Cumulative and Cumulative plus Project Conditions 51

Table 13 – Project Off-Street Parking Requirements 53

Table 14 – Fair Share Project Traffic – W. Yosemite Avenue / St. Dominics Drive #5 55

FIGURES

Figure 1 – Project Location and Study Intersections....8

Figure 2 – Existing Transit Facilities....19

Figure 3 – Existing Bicycle Facilities....20

Figure 4 – Existing Lane Geometry and Traffic Control....21

Figure 5 – Existing Peak Hour Intersection Turning Movement Volumes....22

Figure 6 – Approved Background Project Locations....24

Figure 7 – Background Conditions Peak Hour Intersection Turning Movement Volumes....25

Figure 8 – Site Development Area....28

Figure 9 – Project Site Plan....29

Figure 10 – Project Trip Distribution....31

Figure 11 – Project Peak Hour Intersection Turning Movement Volumes....32

Figure 12 – Background plus Project Conditions Peak Hour Intersection Turning Movement Volumes....33

Figure 13 – Cumulative Lane Geometry and Traffic Control....36

Figure 14 – Cumulative Conditions Peak Hour Intersection Turning Movement Volumes....37

Figure 15 – Cumulative plus Project Conditions Peak Hour Intersection Turning Movement Volumes....39

Figure 16 – Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & Fishback Road (Study Intersection 1)....44

Figure 17 – Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & West Project Driveway (Study Intersection 2)....45

Figure 18 – Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & Central Project Driveway (Study Intersection 3)....46

Figure 19 – Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & East Project Driveway (Study Intersection 4)....47

Figure 20 - Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & St. Dominics Dr (Study Intersection 5)....48

EXECUTIVE SUMMARY

This report discusses the results of a traffic impact analysis (TIA) of a proposed emergency department (ED) expansion (the "Project") at the existing Kaiser Permanente Medical Center in Manteca, California ("Kaiser Manteca"). The "Project Site" is defined in the Initial Study/Mitigated Negative Declaration (IS MND) to be located on the northwest corner of W. Yosemite Avenue and St. Dominics Drive and is bound by the Manteca Park Golf Course to the north; a leased Kaiser Permanente medical office building and vacant land entitled for apartment use to the east; W. Yosemite Avenue to the south; and residential and vacant land uses to the west. Within the Project Site, the Project would construct a new 27,450 square-foot emergency department building in what is defined as the "Site Development Area." The new building would replace an existing 4,000 square-foot emergency department space within the hospital, which is planned to be renovated with imaging and support space for a separate tenant improvement project. The Site Development Area would have a total of four access points, including three unsignalized driveways on W. Yosemite Avenue and one unsignalized driveway on St. Dominics Drive.

The Project would construct several Offsite Improvements. The first improvement consists of constructing a raised median on W. Yosemite Avenue from Fishback Road to St. Dominics Drive, a buffered bicycle lane along the entire Site Development Area frontage, and signalization of the intersection of W. Yosemite Avenue & St. Dominics Drive.

The Project would also construct a segment of Center Street along the existing storm drain alignment from the westerly property line to the easterly property line for future access into the future subdivision on the west and the apartment complex on the east. Bicycle lanes would also be constructed along Center Street, as required by City standards. St. Dominics Drive as well as West Project Driveway would intersect with the extended Center Street alignment. The West Project Driveway's connection to Center Street would be restricted to outbound (exiting) movements from the existing medical facility.

This traffic study identifies potential impacts on the local roadway network associated with the Project based on standards and methodologies established by the City of Manteca (the "City"). The study includes evaluations of traffic conditions during the a.m. and p.m. peak hours for six (6) study intersections. The study additionally addresses the potential transportation effects of the Project to assist the City with Project planning and with the identification of potential conditions of approval of the Project.

STUDY AREA

The study area for this traffic study was determined based on the requirements outlined in the City of Manteca *Transportation Impact Analysis Guidelines*. The study area includes the following locations:

1. W. Yosemite Avenue & Fishback Road
2. W. Yosemite Avenue & West Project Driveway
3. W. Yosemite Avenue & Central Project Driveway
4. W. Yosemite Avenue & East Project Driveway
5. W. Yosemite Avenue & St. Dominics Drive
6. W. Yosemite Avenue & Winters Drive

The study area was evaluated under the following conditions:

- **Existing Conditions** – Based on traffic counts collected at the study intersections in November 2024. Existing roadway geometry and traffic control was assumed.
- **Background (Existing plus Approved Projects) Conditions** – The analysis year of this scenario would be 2027, based on the Existing Conditions scenario plus traffic added by approved development projects that the City has good reason to believe would contribute to traffic in the study area. Programmed roadway projects expected to be in place by the analysis year of this scenario include portions of the Center Street extension east and west of the Project Site that would be implemented by nearby approved development projects.
- **Background plus Project Conditions** – Based on the Background Conditions scenario plus traffic generated by the proposed Project. In addition to background programmed roadway projects, the Project's roadway improvements were assumed. These improvements include the construction of a raised median along the Project Site's frontage on W. Yosemite Avenue, signalization of W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5), and completion of the Center Street extension along the northern limit of Kaiser Manteca. Background traffic and Project traffic are appropriately rerouted to reflect traffic diversions from W. Yosemite Avenue to Center Street.
- **Cumulative Conditions** – Based on future ("horizon") year 2043 traffic projections. Growth rates were developed using outputs from the San Joaquin Council of Governments Travel Demand Model. The growth rates were then used to generate intersection turning movement volumes for this scenario. The scenario additionally includes roadway improvements anticipated to be in place by the horizon year, including those implemented during Background Conditions and the City's plan to convert W. Yosemite Avenue & Fishback Road (Study Intersection 1) to a roundabout. W. Yosemite Avenue & West Project Driveway (Study Intersection 2) would be converted to a right-in right-out intersection as part of the roundabout improvement at W. Yosemite Avenue & Fishback Road (Study Intersection 1).
- **Cumulative plus Project Conditions** – Based on the Cumulative Conditions scenario plus traffic generated by the proposed Project. The scenario includes roadway improvements associated with both Cumulative Conditions and the Project.

PROJECT TRIP ESTIMATES

For the purposes of this analysis, ITE Land Use Code (LUC) 610 ("Hospital") was used to estimate the trip generation potential of the Project. The Project would generate approximately 296 daily trips, 23 trips (15 in, eight out) during the a.m. peak hour, and 13 trips (five in, eight out) during the p.m. peak hour.

INTERSECTION LEVEL OF SERVICE

Level of service (LOS) for this study were determined using methods defined in the *Highway Capacity Manual (HCM), 7th Edition* (HCM 7), within *Synchro 12* analysis software for signalized and unsignalized intersections and within *SIDRA 9* software for roundabouts. Note that *SIDRA 9* uses *Highway Capacity Manual, 6th Edition* (HCM 6) for roundabout LOS analysis, which uses an identical methodology for roundabout LOS analysis as HCM 7.

Intersection LOS were compared with the City's threshold. The City of Manteca *2043 General Plan* establishes LOS D as the minimum threshold for all streets and intersections during the weekday a.m. and p.m. peak hours.

LOS analysis found that all study intersections operate at acceptable LOS for all scenarios.

SIGNAL WARRANTS ANALYSIS

Warrant 3 (Peak Hour Warrant) was evaluated at unsignalized intersections. Note that the satisfaction of a peak hour warrant does not in itself require the installation of a traffic control signal and other warrants and factors should be considered.

Traffic signals are warranted (but may not necessarily be recommended) at the following locations:

- W. Yosemite Avenue & Fishback Road (Study Intersection 1) during all analysis conditions. A signal is not recommended because there are City plans to convert the intersection to a roundabout.
- W. Yosemite Avenue & West Project Driveway (Study Intersection 2) during the p.m. peak hour of Existing, Background (with no Project), and Cumulative (with no Project) analysis conditions. A signal is not recommended because there are City plans to add a raised median through the intersection and to convert the adjacent W. Yosemite Avenue & Fishback Road (Study Intersection 1) to a roundabout, either of which would restrict movements at W. Yosemite Avenue & West Project Driveway (Study Intersection 2) to right-in-right-out. The Project proposes to construct the raised median improvement.
- W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5) during the a.m. peak hours of Cumulative (with no Project) Conditions and Cumulative plus Project Conditions and the p.m. peak hours of all analysis conditions. A signal is recommended as there are City plans to signalize the intersection. The Project proposes to construct this signal. Note that signalization at this location is warranted before the addition of Project-related traffic and thus improves a pre-existing deficiency. The Project should contribute its fair share toward signalization.

QUEUEING ANALYSIS

A queueing analysis assesses the adequacy of storage bay (or “turn pocket”) lengths at intersection approaches. Inadequate turn pocket lengths may contribute to inefficient operating conditions and safety issues as traffic could extend beyond turn pocket lengths into mainline lanes and block traffic and increase the risk of rear-end collisions.

Although the City of Manteca does not establish standards to assess vehicular queue lengths at intersections, the *Transportation Impact Analysis Guidelines* establishes the 95th percentile queue as the standard measure to assess vehicular queues at freeway ramp facilities. To maintain consistency with an existing threshold, the 95th percentile queue was used to assess vehicular queue lengths at intersections.

The results of the queueing analysis show that there are no Project queueing deficiencies.

MULTIMODAL EVALUATION

The Project was evaluated to determine if it would potentially conflict with adopted policies, plans, or programs supporting alternative transportation modes (e.g., bus turnouts, bicycle racks) or generate pedestrian, bicycle, or transit travel demand that would not be accommodated by existing transit, bicycle, or pedestrian facilities and plans.

The evaluation found that the Project is not expected to conflict with existing or planned transit, bicycle, or pedestrian facilities.

PROJECT SITE EVALUATION

Project site evaluation reviewed off-street parking requirements and the proposed on-site vehicular circulation of the Site Development Area.

OFF-STREET PARKING

The Project proposes 112 new parking spaces, within the Site Development Area, which would be less than the City's minimum parking requirement of 137 parking spaces. However, Kaiser Manteca has an existing inventory of 534 parking spaces. The addition of the parking within the Site Development Area would increase the total Kaiser Manteca parking inventory to 646 spaces. The City's minimum parking inventory for Kaiser Manteca with the Project would be 566 spaces. Kaiser Manteca with the Project would exceed the minimum required inventory by 80 spaces. Thus, the Project, combined with the existing Kaiser Manteca parking inventory, would be consistent with City of Manteca parking standards.

ON-SITE CIRCULATION

The Project would neither lead to unsafe conditions nor would fail to accommodate vehicular, pedestrian, and bike modes.

1. INTRODUCTION

This report discusses the results of a traffic impact analysis (TIA) of a proposed emergency department (ED) expansion (the "Project") at the existing Kaiser Permanente Medical Center in Manteca, California ("Kaiser Manteca"). The "Project Site" is defined in the Initial Study/Mitigated Negative Declaration (IS MND) to be located on the northwest corner of W. Yosemite Avenue and St. Dominics Drive and is bound by the Manteca Park Golf Course to the north; a leased Kaiser Permanente medical office building and vacant land entitled for apartment use to the east; W. Yosemite Avenue to the south; and residential and vacant land uses to the west. Within the Project Site, the Project would construct a new 27,450 square-foot emergency department building in what is defined as the "Site Development Area." The new building would replace an existing 4,000 square-foot emergency department space within the hospital, which is planned to be renovated with imaging and support space for a separate tenant improvement project. The Site Development Area would have a total of four access points, including three unsignalized driveways on W. Yosemite Avenue and one unsignalized driveway on St. Dominics Drive.

A site plan of the Site Development Area is available in **Appendix A**.

The Project would construct several Offsite Improvements. The first improvement consists of constructing a raised median on W. Yosemite Avenue from Fishback Road to St. Dominics Drive, a buffered bicycle lane along the entire Site Development Area frontage, and signalization of the intersection of W. Yosemite Avenue & St. Dominics Drive.

The Project would also construct a segment of Center Street along the existing storm drain alignment from the westerly property line to the easterly property line for future access into the future subdivision on the west and the apartment complex on the east. Bicycle lanes would also be constructed along Center Street, as required by City standards. St. Dominics Drive as well as West Project Driveway would intersect with the extended Center Street alignment. The West Project Driveway's connection to Center Street would be restricted to outbound (exiting) movements from existing medical facility.

This traffic study identifies potential impacts on the local roadway network associated with the Project based on standards and methodologies established by the City of Manteca (the "City"). The study includes evaluations of traffic conditions during the a.m. and p.m. peak hours for six (6) study intersections. The study additionally addresses the potential transportation effects of the Project to assist the City with Project planning and with the identification of potential conditions of approval of the Project.

1.1 STUDY AREA

The study area for this traffic study was determined based on the requirements outlined in the City of Manteca *Transportation Impact Analysis Guidelines*, which states that an intersection may be considered for inclusion in a traffic study if any of the following requirements are met:

1. The proposed development project is estimated to add 25 or more peak hour vehicle trips per lane to any intersection movement, with selection of existing or planned arterial and collector streets considered over local streets and driveways.
2. The intersection is immediately adjacent to the proposed project.
3. The City of Manteca staff determines that the intersection or driveway should be included in the analysis based on engineering judgement.

The Project is expected to generate less than 25 peak hour trips, which would result in nominal increases in traffic and negligible changes in traffic operations at intersections farther from the Project Site such as

W. Yosemite Avenue & N. Airport Way. In consultation with City of Manteca staff, the locations adjacent or close to the project were selected for study and are listed in **Table 1**. Additionally, the location of each study intersection relative to the Project Site is shown in **Figure 1**.

Table 1 – Study Intersections

#	Intersection	Existing Control	Existing or Future Intersection
1	W. Yosemite Ave. / Fishback Rd.	SSSC	Existing
2	W. Yosemite Ave. / West Project Dwy.	SSSC	Existing
3	W. Yosemite Ave. / Central Project Dwy.	SSSC	Existing
4	W. Yosemite Ave. / East Project Dwy.	SSSC	Existing
5	W. Yosemite Ave. / St. Dominics Dr.	SSSC	Existing
6	W. Yosemite Ave. / Winters Dr.	Signal	Existing

Note: SSSC – Side Street Stop Control



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NOT TO SCALE

FIGURE 1

STUDY AREA AND INTERSECTION LOCATIONS

1.2 STUDY SCENARIOS

Study scenarios represent different states of the study area. Study scenarios allow proposed development projects to be evaluated under a range of expected traffic conditions and for project stakeholders to identify impacts or deficiencies on the local roadway network that might not have occurred under alternative conditions.

In accordance with the study scenarios required for inclusion in a TIA as outlined in the City of Manteca *Transportation Impact Analysis Guidelines*, this traffic study evaluates the following conditions:

- **Existing Conditions** – Based on traffic counts collected at the study intersections in November 2024. Existing roadway geometry and traffic control was assumed.
- **Background (Existing plus Approved Projects) Conditions** – The analysis year of this scenario would be 2027, based on the Existing Conditions scenario plus traffic added by approved development projects that the City has good reason to believe would contribute to traffic in the study area. Programmed roadway projects expected to be in place by the analysis year of this scenario include portions of the Center Street extension east and west of the Project Site that would be implemented by nearby approved development projects.
- **Background plus Project Conditions** – Based on the Background Conditions scenario plus traffic generated by the proposed Project. In addition to background roadway projects, the Project's roadway improvements were assumed. These improvements include the construction of a raised median along the Project Site's frontage on W. Yosemite Avenue, signalization of W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5), and completion of the Center Street extension along the northern limit of Kaiser Manteca. Background traffic and Project traffic are appropriately rerouted to reflect traffic diversions from W. Yosemite Avenue to Center Street.
- **Cumulative Conditions** – Based on future ("horizon") year 2043 traffic projections. Growth rates were developed using outputs from the San Joaquin Council of Governments Travel Demand Model. The growth rates were then used to generate intersection turning movement volumes for this scenario. The scenario additionally includes roadway improvements anticipated to be in place by the horizon year, including those implemented during Background Conditions and the City's plan to convert W. Yosemite Avenue & Fishback Road (Study Intersection 1) to a roundabout. W. Yosemite Avenue & West Project Driveway (Study Intersection 2) would be converted to a right-in right-out intersection as part of the roundabout improvement at W. Yosemite Avenue & Fishback Road (Study Intersection 1).
- **Cumulative plus Project Conditions** – Based on the Cumulative Conditions scenario plus traffic generated by the proposed Project. The scenario includes roadway improvements associated with both Cumulative Conditions and the Project.

1.3 STUDY METHODOLOGY

Traffic impacts related to the proposed Project are required to be evaluated for both compliance with applicable regulatory documents and environmental significance as defined in the California Environmental Quality Act (CEQA). In accordance with OPR's *2018 Technical Advisory on Evaluating Transportation*

Impacts in CEQA[1] (the "*Technical Advisory*"), a quantitative VMT assessment is the preferred methodology for determining the environmental significance of transportation impacts of development projects under CEQA. Effective July 1, 2020, vehicular delay on roadway segments and intersections qualitatively measured using the level of service (LOS) metric can no longer be used to determine the environmental significance of transportation impacts of development projects for CEQA purposes. However, the OPR *Technical Advisory* does not exclude the use of LOS when determining consistency with plans and standards of local jurisdictions and agencies such as the City of Manteca.

Although CEQA now recognizes VMT as the primary analysis methodology for transportation impacts, it does not preclude local agencies from using LOS to establish operational standards for local roadway networks. The City of Manteca *2043 General Plan* establishes LOS D as the minimum threshold for all streets and intersections except in the downtown area during the weekday a.m. and p.m. peak hours.

As such, this study includes an intersection LOS analysis and a queueing analysis to determine the operational effects of the proposed Project on nearby study intersections.

The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS ranges from "A" (best), which represents minimal delays experienced by roadway users, to "F" (worst), which represents heavy delays experienced by roadway users and a facility that is operating at or near its functional capacity. LOS for this study were determined using methods defined in the *Highway Capacity Manual (HCM), 7th Edition* (HCM 7) within *Synchro 12* analysis software for signalized and unsignalized intersections and within *SIDRA 9* software for roundabouts. Note that *SIDRA 9* uses *Highway Capacity Manual, 6th Edition* (HCM 6) for roundabout LOS analysis, which uses an identical methodology for roundabout LOS analysis as *HCM 7*.

The HCM includes procedures for analyzing side street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for the worst minor street movement or major street left turn. Conversely, the AWSC, signalized intersection, and roundabout intersection procedures define LOS as a function of average control delay weighted by each approach's total vehicular delay. **Table 2** relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections.

Table 2 – Intersection Level of Service Definitions

LOS	Description	Signalized (Avg. control delay per vehicle sec/veh.)	Unsignalized* (Avg. control delay per vehicle sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	≤ 10	≤ 10
B	Stable traffic. Traffic flows smoothly with few delays.	> 10 – 20	> 10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	> 20 – 35	> 15 – 25

[1] *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Governor's Office of Planning and Research, State of California, December 2018.

LOS	Description	Signalized (Avg. control delay per vehicle sec/veh.)	Unsignalized* (Avg. control delay per vehicle sec/veh.)
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	> 35 – 55	> 25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55 – 80	> 35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50

Sources: Transportation Research Board, *Highway Capacity Manual 7th Edition*, National Research Council, 2022, pp. 19-15 – 19-16, 22-9.

*Note: Includes all-way stop control, side-street stop control and roundabout intersections.

1.4 THRESHOLDS OF DEFICIENCY

The LOS analysis included in this study was prepared based on the standards and methodologies established by the City of Manteca in its *Transportation Impact Analysis Guidelines*. Based on the City of Manteca's *2043 General Plan* minimum threshold of LOS D for all streets and intersections during the weekday a.m. and p.m. peak hours, a deficiency is defined in the *Transportation Impact Analysis Guidelines* as follows:

Facilities that currently operate at an acceptable LOS without the project:

- A deficiency occurs if the addition of project traffic causes the LOS on a study facility to change from an acceptable LOS under "no project" conditions to an unacceptable LOS under "with project" conditions.

Facilities that currently operate at an unacceptable LOS without the project:

- A deficiency occurs if the addition of project traffic increases the average vehicle delay for a signalized intersection by five (5) seconds or more, or;
- A deficiency occurs if the addition of project traffic increases the average delay for an all-way stop-controlled intersection by five (5) seconds or more and the intersection meets the peak hour signal warrant, or;
- A deficiency occurs if the addition of project traffic increases the highest delayed side-street movement of a stop-controlled intersection by five (5) seconds or more and the intersection meets the peak hour signal warrant.

1.5 QUEUEING

A queueing analysis assesses the adequacy of storage bay (or "turn pocket") lengths at intersection approaches. Inadequate turn pocket lengths may contribute to inefficient operating conditions and safety issues as traffic could extend beyond turn pocket lengths into mainline lanes and block traffic and increase the risk of rear-end collisions.

Although the City of Manteca does not establish standards to assess vehicular queue lengths at intersections, the *Transportation Impact Analysis Guidelines* establishes the 95th percentile queue as the standard measure to assess vehicular queues at freeway ramp facilities.

Thus, for the purposes of this analysis, the 95th percentile queue was used as the standard measure to assess queue length at intersection approaches. The 95th percentile queue length represents a condition where 95 percent of the time during the peak hour, traffic queues will be less than or equal to the queue length determined by the analysis. The 95th percentile queue is used by jurisdictions to determine the adequacy of turn pocket lengths under "worst-case" conditions.

Additionally, operational deficiencies were considered to occur under conditions where Project traffic causes the queue to extend beyond the turn pocket by 25 feet or more (i.e., the length of one vehicle) into adjacent traffic lanes that operate separately from the left or right turn lane. Where the vehicle queue already exceeds the turn pocket length under pre-Project conditions, a queuing deficiency would occur if Project traffic lengthened the queue by 25 feet or more.

1.6 REPORT ORGANIZATION

The remainder of the report is divided into the following chapters:

- Chapter 2: Existing Conditions – describes existing conditions on the roadway network, transit system, pedestrian facilities, and bicycle facilities.
- Chapter 3: Background and Background Plus Project Conditions – describes the traffic conditions under Background Conditions with and without the proposed Project. Includes trip generation, trip distribution, and trip assignment of approved background projects and the proposed Project.
- Chapter 4: Cumulative and Cumulative Plus Project Conditions – describes the traffic conditions under Cumulative Conditions with and without the proposed Project.
- Chapter 5: Signal Warrants Analysis – describes whether traffic conditions under all study scenarios at the unsignalized study intersections warrant signalization.
- Chapter 6: Vehicle Queuing - describes vehicle queuing analysis at the study intersections.
- Chapter 7: Multimodal Evaluation – describes potential effects the proposed Project may have on the transit system, pedestrian facilities, and bicycle facilities.
- Chapter 8: Project Site Evaluation – describes the proposed off-street parking facilities and on-site circulation facilities of the Site Development Area.
- Chapter 9: Summary of Impacts and Recommended Mitigation – summarizes potential impacts and deficiencies of the proposed Project and mitigations, if necessary.

2. EXISTING CONDITIONS

This section describes the existing conditions of the roadway network, transit service, pedestrian facilities, and bicycle facilities within the vicinity of the Project Site. The chapter also presents existing turning movement volumes and intersection levels of service.

2.1 EXISTING ROADWAY NETWORK

This section provides a description of the specific roadways included in this study.

Interstate 5 (I-5) is a six-lane freeway facility that runs in the north-south direction west of the City of Manteca. I-5 provides connectivity to the western U.S. and extends from the California-Mexico border to the south to the Washington-Canada border to the north. The freeway facility provides access to nationally significant destinations including San Diego, Los Angeles, and Sacramento. The posted speed limit within the study area is 65 miles per hour.

State Route 99 (SR 99) is a six-lane freeway facility that runs in the north-south direction through the east side of City of Manteca. SR 99 runs along the length of the California Central Valley and provides connectivity to regionally significant destinations including Sacramento, Stockton, Modesto, Merced, and Fresno. The posted speed limit within the study area is 65 miles per hour.

State Route 120 (SR 120) is a four-lane freeway facility oriented in the east-west direction through the City of Manteca. SR 120 provides connectivity between SR 99 to the east and I-5, Interstate 205 (I-205), and Interstate 580 (I-580) to the west. SR 120, I-205, and I-580 together provide the City of Manteca with access to the San Francisco Bay Area. The posted speed limit within the study area is 65 miles per hour.

W. Yosemite Avenue is an arterial roadway that travels through the City of Manteca in the east-west direction. The roadway is four-lanes wide and includes a two-way left-turn lane (TWLTL) through the study area. W. Yosemite Avenue provides the study area with connectivity to Downtown Manteca, to additional local north-south arterial roadways, to SR 99, and to SR 120 via Guthmiller Road. The posted speed limit is 45 miles per hour.

N. Airport Way is a two-lane arterial roadway that runs in the north-south orientation on the west side of the City of Manteca. The roadway connects the study area to residential neighborhoods and industrial land uses to the north and to SR 120 in the south. The posted speed limit is 40 miles per hour.

Winters Drive is a two-lane collector roadway oriented in the north-south direction east of the study area. The roadway has a two-way left-turn lane and on-street parking on both sides throughout its length. Winters Drive connects the study area with residential neighborhoods and Sierra High School south of W. Yosemite Avenue. The posted speed limit is 35 miles per hour.

Fishback Road is a two-lane collector that runs in the north-south direction south of W. Yosemite Avenue. The roadway includes two-way left-turn lanes, left-turn lane pockets, and raised medians for portions along its length. The roadway connects the study area with residential neighborhoods. The posted speed limit is 35 miles per hour.

St. Dominics Drive is a two-lane local roadway that runs in the north-south direction north of W. Yosemite Avenue. The roadway extends approximately 630 feet north of W. Yosemite Avenue and provides driveway access to Kaiser Manteca and satellite medical facilities. No speed limit is posted.

2.2 EXISTING TRANSIT FACILITIES

Transit services within the City of Manteca are provided by Manteca Transit, the Altamont Corridor Express (ACE), and Amtrak San Joaquin. The transit services are shown in **Figure 2**. Service spans and headways for the transit services discussed below are shown in **Table 3**.

MANTECA TRANSIT

Manteca Transit operates fixed-route scheduled and Dial-a-Ride demand response bus services throughout the City of Manteca.

2.2.1.1 Fixed-Route Scheduled Bus Service

Four fixed-route scheduled bus services are operated by Manteca Transit.

Route 1 (the "Red" route) operates in a general east-west linear orientation along W. Yosemite Avenue in Manteca. Route 1 extends from Vasconcellos Avenue in the east to Entertainment Way in the west and serves stops in between, including the Manteca Transit Center. Service approximately spans from 6 a.m. to 6:54 p.m. on weekdays and from 9:00 a.m. to 3:54 p.m. on weekends.

Route 2 (the "Purple" route) operates a circuitous route in a general area of Manteca south of W. Yosemite Avenue and north of Woodward Avenue. Route 2 connects various residential neighborhoods with local destinations, including Big League Dreams Manteca, Downtown Manteca, and the Manteca Transit Center. Service approximately spans from 6:00 a.m. to 6:45 p.m. on weekdays and from 9:00 a.m. to 3:45 p.m. on weekends.

Route 3 (the "Yellow" route) operates a circuitous route in an area generally in the center of Manteca. The route serves an area bounded by N. Airport Way, Lathrop Road, W. Yosemite Avenue, and Main Street. Route 3 additionally extends as far east as Empire Avenue & Louise Avenue. Service approximately spans from 6:00 a.m. to 6:48 p.m. on weekdays and from 9:00 a.m. to 3:48 p.m. on weekends.

Route 4 (the "Blue" route) operates a circuitous route that primarily runs along N. Airport Way, Northgate Drive, Main Street, and Woodward Avenue. Service spans approximately from 6:00 a.m. to 6:52 p.m. This route serves the closest bus stop to the Project Site at W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5).

2.2.1.2 Dial-a-Ride Bus Service

Manteca Transit offers shared-ride demand response Dial-a-Ride (DAR) service to individuals with a certified disability, seniors (age 62 and older), and Medicare participants. Manteca Transit DAR operates within Manteca's city limits and to the Lathrop/Manteca ACE Station.

ALTAMONT CORRIDOR EXPRESS

ACE is a commuter rail service that runs on a single line from Stockton to San Jose. Four trains operate in the westbound direction on weekday mornings (approximately from 4:10 a.m. to 9:44 a.m.) and an additional four trains operate in the eastbound direction on weekday evenings (approximately from 2:10 p.m. to 7:47 p.m.). The cities of Manteca and Lathrop share a station near W. Yosemite Avenue & Shideler Parkway. Trains run approximately every hour.

AMTRAK SAN JOAQUIN

Amtrak San Joaquin is a commuter rail service that runs on a hub-and-spoke network centered in Stockton. Service extends from Stockton to Oakland, Sacramento, and Bakersfield. In the northbound direction, service approximately spans from 4:12 a.m. to 9:57 p.m. and from 9:50 a.m. to 10:45 p.m. for Bakersfield to Stockton trains and Stockton to Oakland trains, respectively. In the southbound direction, service approximately spans from 7:00 a.m. to 6:05 p.m. and from 7:56 a.m. to 11:57 p.m. for Oakland to Sacramento trains and Stockton to Bakersfield trains, respectively. Approximately six trains operate in each direction daily.

Table 3 – Transit Services Schedules

Route	From	To	Weekdays			Weekends	
			Operating Hours	Headway (minutes)		Operating Hours	Headway (minutes)
				Peak	Mid-day		
Manteca Bus Service							
1 - "Red"	Manteca Transit Center	E. Yosemite Ave & S. Sherman Ave	6:00 a.m. to 6:54 p.m.	60	60	9:00 a.m. to 3:54 p.m.	60
2 - "Purple"	Manteca Transit Center	Stadium Center & Daniels St	6:00 a.m. to 6:45 p.m.	60	60	9:00 a.m. to 3:45 p.m.	60
3 - "Yellow"	Manteca Transit Center	N. Union St & Lathrop Rd	6:00 a.m. to 6:48 p.m.	60	60	9:00 a.m. to 3:48 p.m.	60
4 - "Blue"	Manteca Transit Center	W. Yosemite Ave & St. Dominics Dr	6:00 a.m. to 6:52 p.m.	60	60	N/A	N/A
ACE Commuter Rail Service							
WB Local	Stockton San Joaquin Street Station	San Jose Diridon Station	4:10 a.m. to 9:44 a.m.	~50 - ~85	N/A	N/A	N/A
EB Local	San Jose Diridon Station	Stockton San Joaquin Street Station	2:10 p.m. to 7:47 p.m.	~60 - ~85	N/A	N/A	N/A
Amtrak San Joaquin Commuter Rail Service							
NB Local	Bakersfield	Sacramento (or Oakland)	4:12 a.m. to 11:35 p.m. (or 10:30 p.m.)	240	120	4:12 a.m. to 11:35 p.m. (or 10:30 p.m.)	120 - 240
SB Local	Sacramento (or Oakland)	Bakersfield	6:26 a.m. (or 7:36 a.m.) to 11:57 p.m.	49	~240	6:26 a.m. (or 7:36 a.m.) to 11:57 p.m.	49 - ~240

Source: Manteca Transit (2025); ACE Rail (2025); Amtrack San Joaquin Commuter Rail (2025)

Notes: "~" indicates approximate

1. Headways are defined as the time between transit vehicles on the same route or line.

2.3 EXISTING PEDESTRIAN FACILITIES

Pedestrian facilities serve to enhance the convenience and accessibility of a built environment to pedestrians. A built environment with a high degree of walkability is characterized by a mix of compact and close-by land uses that does not require a pedestrian to travel far to meet their needs in combination with travel ways with facilities (e.g., concrete sidewalks, marked crosswalks, countdown pedestrian signal heads, off-street paths, textured tactile curb cuts) and traffic control that allows pedestrians to travel between origins and destinations safely and stress-free.

Pedestrian infrastructure exists intermittently within the study area. Concrete sidewalks are provided on both sides of St. Dominics Drive and on the northerly side of W. Yosemite Avenue directly adjacent to and east of the Project Site. Concrete sidewalks additionally exist on the southerly side of W. Yosemite Avenue approximately to the east of Project Site. To the west, concrete sidewalks exist intermittently; a short segment is present approximately 700 feet west of the Project Site on the southerly side of W. Yosemite Avenue, and additional segments exist at the northwest and northeast corners of the intersection of W. Yosemite Avenue & N. Airport Way.

Marked crosswalks also exist intermittently in the study area. A high visibility marked crosswalk exists on St. Dominics Drive between the pharmacy facility and the main hospital facility at Kaiser Manteca. Marked crosswalks are additionally present at all legs of W. Yosemite Avenue & N. Airport Way and W. Yosemite Avenue & Winters Drive. The marked crosswalks at W. Yosemite Avenue & N. Airport Way are high visibility crosswalks, while the marked crosswalks at W. Yosemite Avenue & Winters Drive are school zone crosswalks.

Each corner of the signalized intersections of W. Yosemite Avenue & N. Airport Way and W. Yosemite Avenue & Winters Drive includes countdown pedestrian signal heads and tactile textured curb cuts. Curb cuts are additionally present at the northerly corners of W. Yosemite Avenue & St. Dominics Drive.

2.4 EXISTING BICYCLE FACILITIES

Bicycle facilities serve to improve the accessibility of a built environment to cyclists. A built environment with bicycle facilities (e.g., bike lanes and separated trails) and accommodative traffic control (e.g., bike phases at signalized intersections) results in a bike-friendly environment. The four main bikeway facilities include the following:

- **Class I (Multi-use Separated Trail)**: A completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
- **Class II (Bike Lane)**: A designated lane for the exclusive use or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited but with vehicle parking and cross-flows by pedestrians and motorists permitted.
- **Class III (Bike Route)**: A route designated by signs or pavement markings and shared with pedestrians and motorists.
- **Class IV (Separated Bikeway)**: An on-street facility reserved for use by bicyclists with physical separation between the bikeway and travel lanes. Physical separation exists which may consist of vertical elements such as curbs, landscaping, bollards, or parking lanes.

Within the study area, Class II bike lanes exist along both sides of Winters Drive south of W. Yosemite Avenue and on both sides of W. Yosemite Avenue east of St. Dominics Drive.

Figure 3 shows existing bike facilities in the study area.

2.5 EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

Existing intersection lane configurations and traffic controls are illustrated in **Figure 4**.

2.6 EXISTING PEAK-HOUR TURNING MOVEMENT VOLUMES

Intersection turning movement counts were conducted at the study intersections during the morning peak period (7 a.m. to 9 a.m.) and the afternoon peak period (4 p.m. to 6 p.m.) on Thursday, November 14, 2024, to determine the existing peak hour turning movement volumes on a typical weekday. Peak period pedestrian, bicycle, and heavy vehicle counts were collected.

Existing peak hour turning movement counts were balanced between pairs of study intersections where the characteristics of the roadway segments in between them (e.g., no driveways or driveways to land uses that generate negligible traffic volumes) would lead to reasonably expected small differentials in respective inbound and outbound traffic volumes. The balanced existing peak hour turning movement volumes used for the Existing Conditions scenario are shown in **Figure 5**. Raw turning movement counts are available in **Appendix B**.

2.7 EXISTING INTERSECTION LEVEL OF SERVICE

Traffic operations under Existing Conditions were evaluated at the study intersections using *Synchro 12* traffic analysis software. Existing peak hour factors, heavy vehicle volumes, pedestrian and bicycle conflicts, and signal timings were included in the analysis. Analysis worksheets are available in **Appendix C**. The results are summarized in **Table 4**.

All study intersections operate at acceptable LOS under Existing Conditions.

Table 4 – Existing Conditions Intersection Level of Service Summary

#	Intersection	Control[1]	Existing			
			AM Peak		PM Peak	
			LOS	Delay (sec)[2]	LOS	Delay (sec)[2]
1	W. Yosemite Ave. / Fishback Rd.	SSSC	C	16.7	B	13.5
2	W. Yosemite Ave. / West Project Dwy.	SSSC	B	13.2	C	15.5
3	W. Yosemite Ave. / Central Project Dwy.	SSSC	C	15.2	C	16.1
4	W. Yosemite Ave. / East Project Dwy.	SSSC	B	11.9	B	13.4
5	W. Yosemite Ave. / St. Dominics Dr.	SSSC	C	15.9	D	27.6
6	W. Yosemite Ave. / Winters Dr.	Signal	B	17.5	B	12.5

Notes: Locations operating at unacceptable LOS or worse are in **red**.

1. SSSC = side-street stop control
2. The weighted average control delay is reported for signalized intersections. The delay for the worst movement is reported for SSSC intersections.

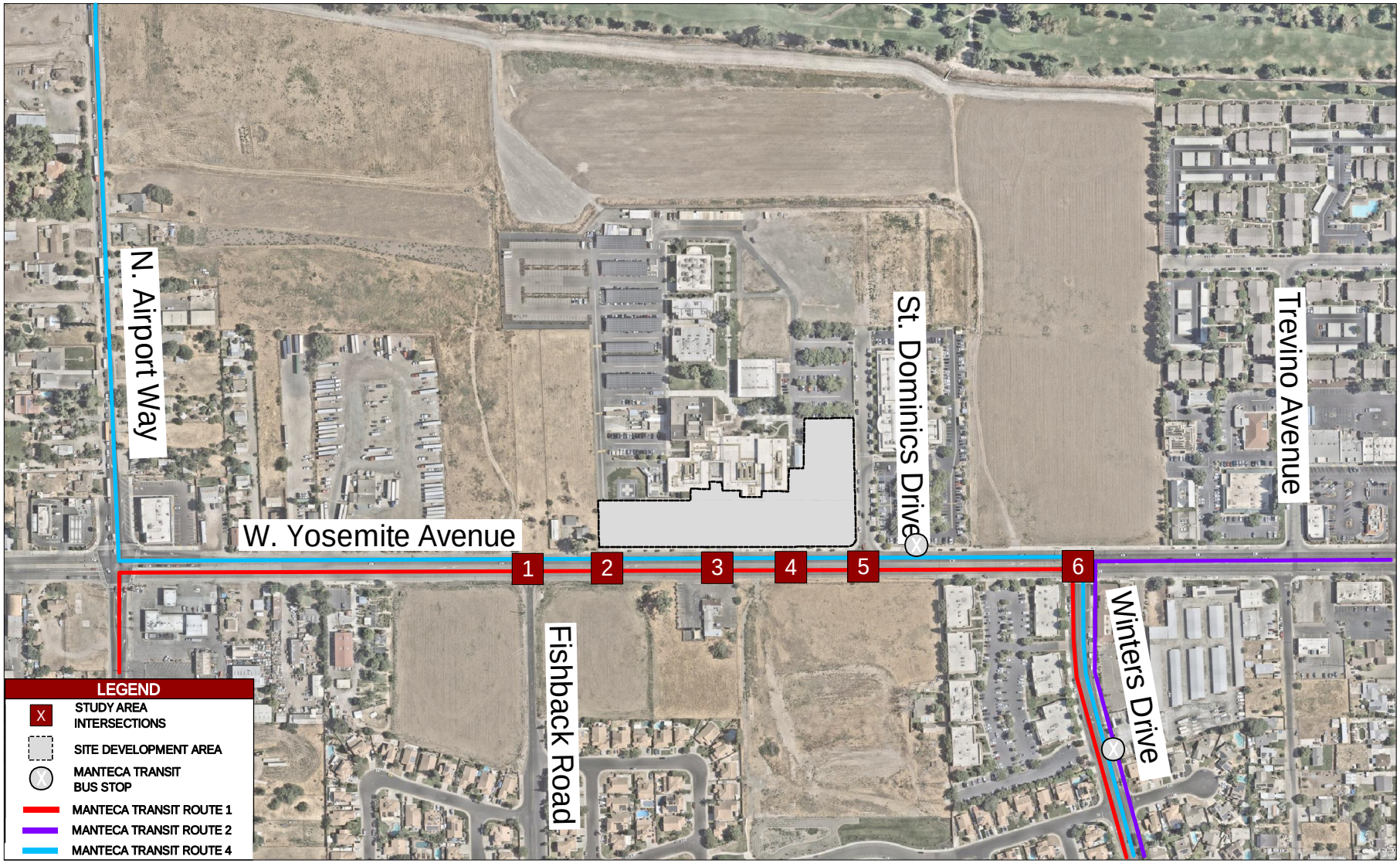

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FIGURE 2

EXISTING TRANSIT FACILITIES



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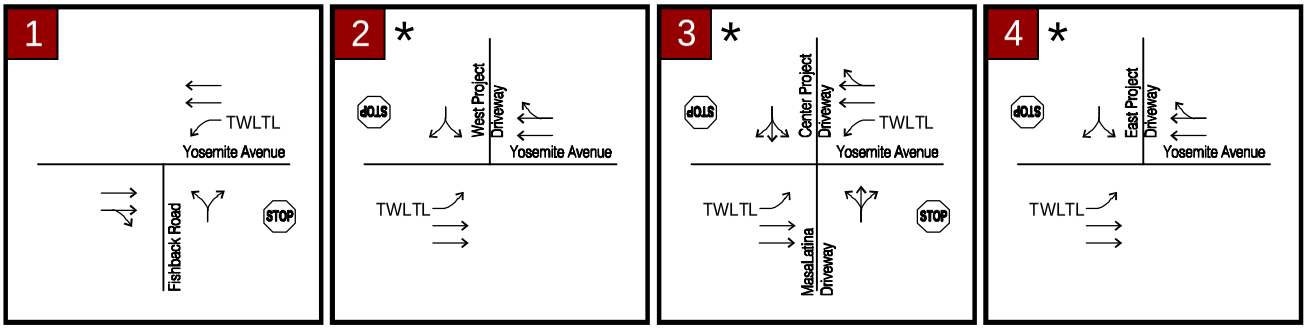
FIGURE 3
EXISTING BICYCLE FACILTIES



LEGEND

X	STUDY AREA INTERSECTIONS	STOP	STOP SIGN
	SITE DEVELOPMENT AREA	XX'	STORAGE LENGTH
	TRAFFIC SIGNAL	TWLTL	TWO-WAY LEFT TURN LANE



THE PROJECT WILL CONSTRUCT CENTER STREET WITHIN PROJECT PROPERTY AND EXTEND ST. DOMINICS DRIVE TO INTERSECT WITH CENTER STREET.

* THE PROJECT WILL CONSTRUCT A RAISED MEDIAN CONSTRUCTED WHICH WILL ELIMINATE THE EBL AND SBL AT INTERSECTION 2 & 4 AND NBL, SBL & WBL AT INTERSECTION 3.

** THE PROJECT WILL SIGNALIZE INTERSECTION 5.

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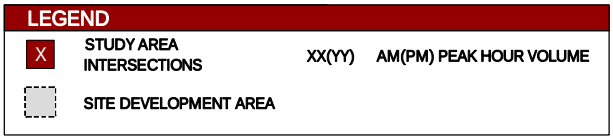
FIGURE 4
EXISTING LANE GEOMETRY AND TRAFFIC CONTROL





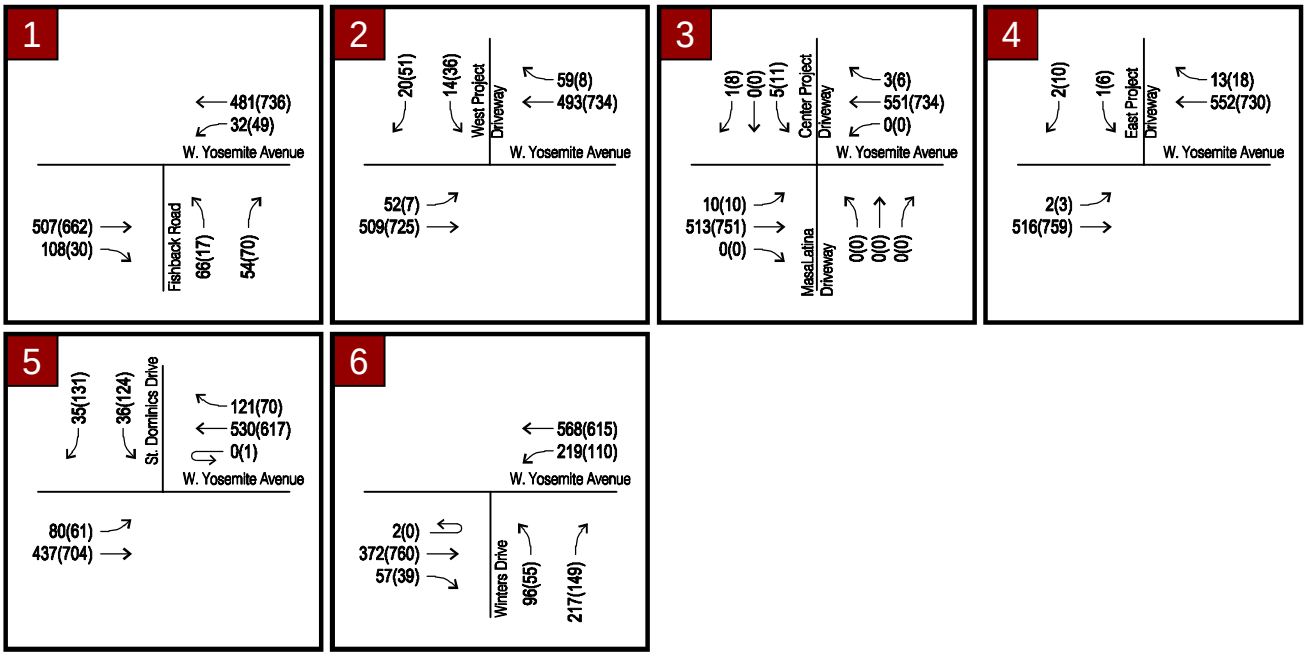


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FIGURE 5
EXISTING PEAK HOUR INTERSECTION TURNING MOVEMENT VOLUMES

3. BACKGROUND CONDITIONS & BACKGROUND PLUS PROJECT CONDITIONS

This section presents the results of a traffic operations analyses of the study intersections under the Background Conditions and Background plus Project scenarios.

3.1 BACKGROUND CONDITIONS

This section describes traffic conditions of the study intersection under Background Conditions.

BACKGROUND TRAFFIC LANE GEOMETRY

The Background Conditions scenario includes lane geometry and traffic controls that are identical to those of Existing Conditions as shown in **Figure 4**.

BACKGROUND TRAFFIC VOLUMES

The Background Conditions scenario accounts for traffic volumes under the Existing Conditions scenario plus traffic generated by approved projects that are expected to be completed in the near future.

In consultation with City of Manteca staff, the following approved background projects were included for analysis in the Background Conditions scenario:

1. 380 N. Airport Way – Waterfall Apartments
2. 320 N. Airport Way – 320 N. Airport Way Subdivision Project
3. 1919 W. Yosemite Avenue – Yosemite Apartments
4. 1852 W. Yosemite Avenue – Manteca Assisted Living
5. 1563 & 1625 W. Yosemite Avenue – Prose Manteca
6. 1519 W. Yosemite Avenue – Nectar Cannabis

Figure 6 shows the locations of each approved background project considered in relation to the Project and study area. According to the *2024 Manteca General Plan*, the City plans to extend Center Street from Trevino Avenue to N. Airport Way. In line with that plan, the 320 N. Airport Way Subdivision Project and the Prose Manteca development would construct portions of the future alignment of Center Street that run adjacent to or through their respective developments. Traffic traveling between N. Airport Way and Trevino Avenue would continue to use W. Yosemite Avenue under Background Conditions as the final portion of the Center Street extension would not be complete until plus Project conditions.

Where traffic studies were unavailable for the approved projects, trips generated by a given project were separately estimated for a typical weekday, weekday morning (a.m.) peak hour, and weekday afternoon (p.m.) peak hour using the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition*[2]. The ITE *Trip Generation Manual* is a standard reference used by jurisdictions throughout the country to estimate the trip generation potential of proposed developments.

The peak hour intersection turning movement volumes for the Background Conditions scenario are shown in **Figure 7**.

[2] *Trip Generation, 11th Edition*, Institute of Transportation Engineers, 2021.

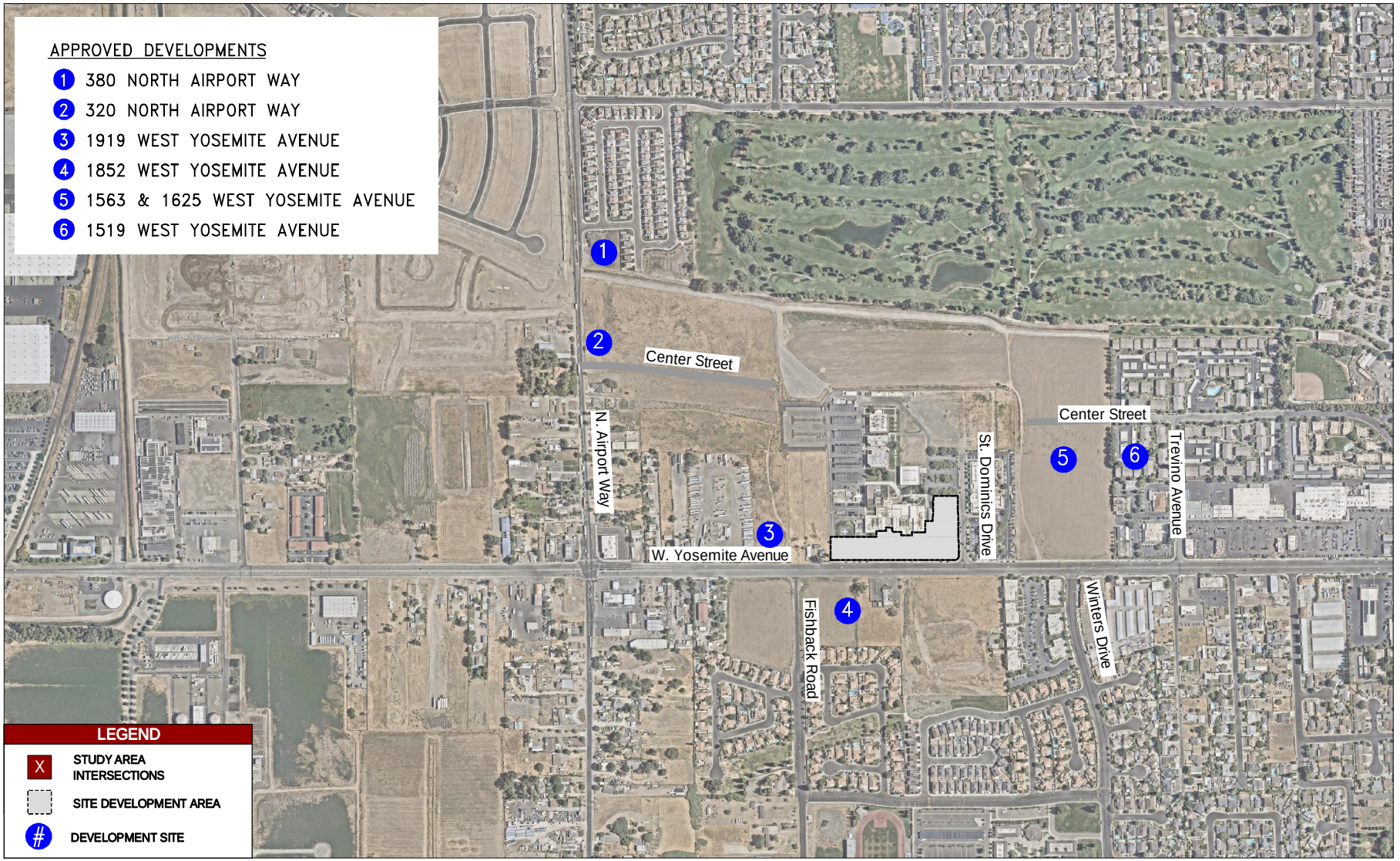

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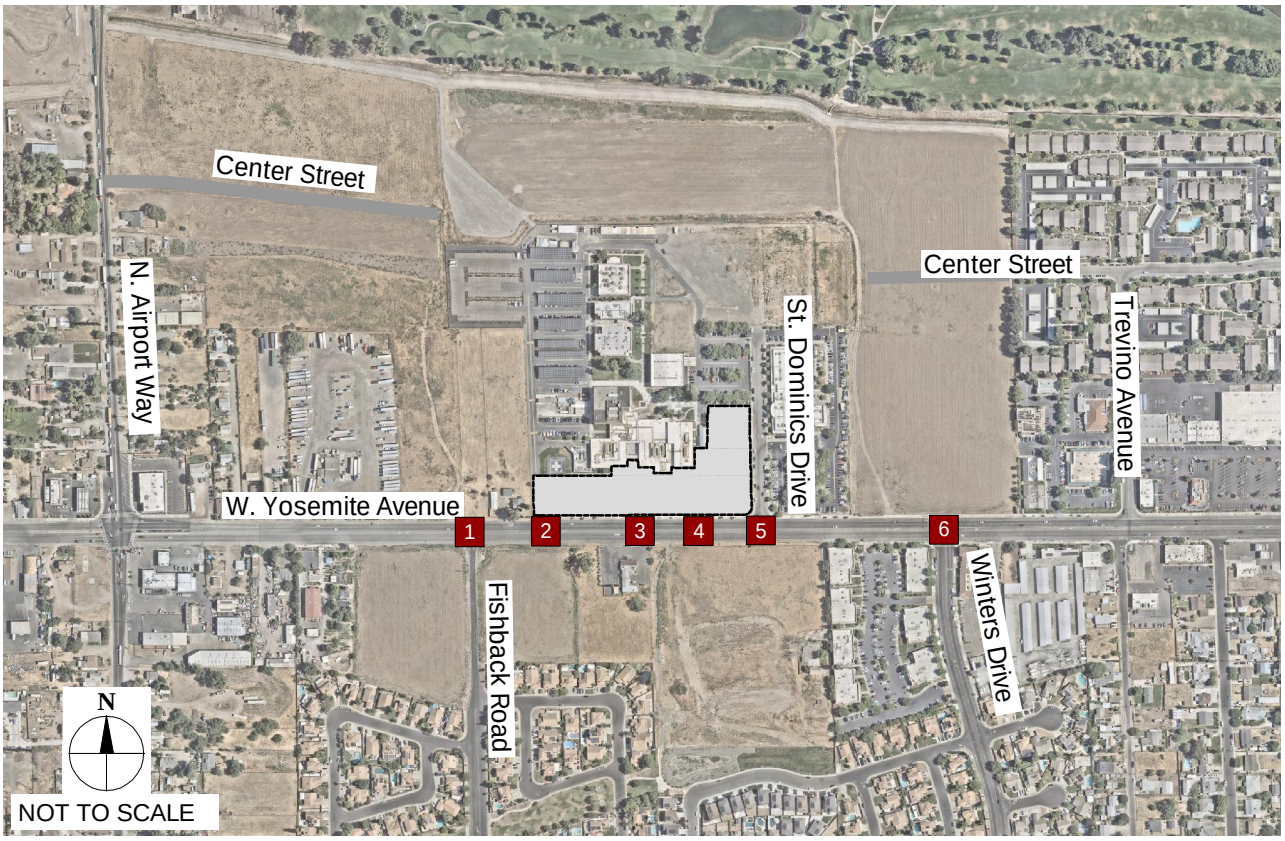
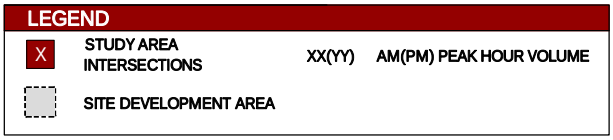
FIGURE 6
APPROVED BACKGROUND PROJECT LOCATIONS





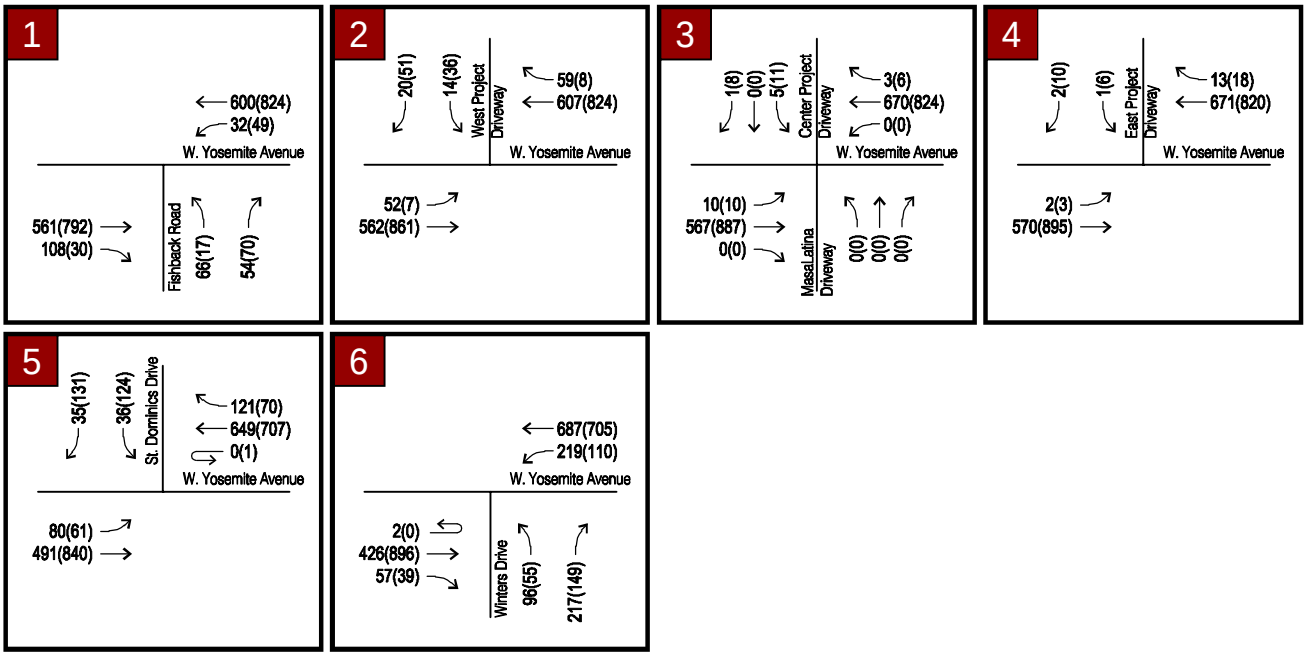


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FIGURE 7
BACKGROUND CONDITIONS PEAK HOUR INTERSECTION TURNING MOVEMENT VOLUMES

BACKGROUND CONDITIONS INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections under Background Conditions. The results of the analysis are presented in **Table 5**. Analysis sheets are provided in **Appendix D**.

All study intersections operate at acceptable LOS under Background Conditions.

Table 5 – Background Conditions Intersection Level of Service Summary

#	Intersection	Control[1]	Background			
			AM Peak		PM Peak	
			LOS	Delay (sec)[2]	LOS	Delay (sec)[2]
1	W. Yosemite Ave. / Fishback Rd.	SSSC	C	18.9	C	15.4
2	W. Yosemite Ave. / West Project Dwy.	SSSC	B	11.1	B	11.9
3	W. Yosemite Ave. / Central Project Dwy.	SSSC	B	10.9	B	11.3
4	W. Yosemite Ave. / East Project Dwy.	SSSC	B	10.9	B	11.3
5	W. Yosemite Ave. / St. Dominics Dr.	SSSC	C	15.5	D	25.9
6	W. Yosemite Ave. / Winters Dr.	Signal	B	17.7	B	12.5

Notes: Locations operating at unacceptable LOS or worse are in **red**.

1. SSSC = side-street stop control
2. The weighted average control delay is reported for signalized intersections. The delay for the worst movement is reported for SSSC intersections.

3.2 BACKGROUND PLUS PROJECT CONDITIONS

This section presents a description of the Project's trip generation, trip distribution, trip assignment, and potential effects on the local roadway network in addition to traffic from the Background Conditions scenario.

PROPOSED SITE USE

Figure 8 shows the Site Development Area. **Figure 9** shows the Project Site plan. Kaiser Permanente proposes to construct an approximately 27,450 square-foot emergency department expansion to its existing hospital facility. The expanded emergency department would be located to the south of the existing hospital, parallel to W. Yosemite Avenue. The emergency department expansion would include 34 treatment bays, a relocated ambulance drop-off on W. Yosemite Avenue, a new walk-in emergency waiting area and drop-off with access from St. Dominics Drive, a new magnetic resonance imaging (MRI) imaging trailer, and a relocated existing computed tomography (CT) trailer. In addition, the current 4,000 square-foot, 11-bay emergency department would be renovated to include additional imaging and support space as part of a separate tenant improvement project after completion of the Project. The Site Development Area would have a total of four access points, which includes three unsignalized driveways on W. Yosemite Avenue and one unsignalized driveway on St. Dominics Drive.

In addition, the Project would build off-site improvements on W. Yosemite Avenue including the construction of a raised median from Fishback Road to St. Dominics Drive, a buffered bicycle lane along the entire Project Site frontage, and signalization of the intersection of W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5). In accordance with the City of Manteca's plans, the Project would also construct a segment of Center Street along the existing storm drain alignment from the westerly property line to the easterly property line for future access into the future subdivision on the west and the apartment complex on the east. St. Dominics Drive and West Project Driveway would intersect with the extended Center Street alignment. The West Project Driveway's connection to Center Street would be restricted to outbound (exiting) movements from existing medical facility.

PROJECT TRIP GENERATION

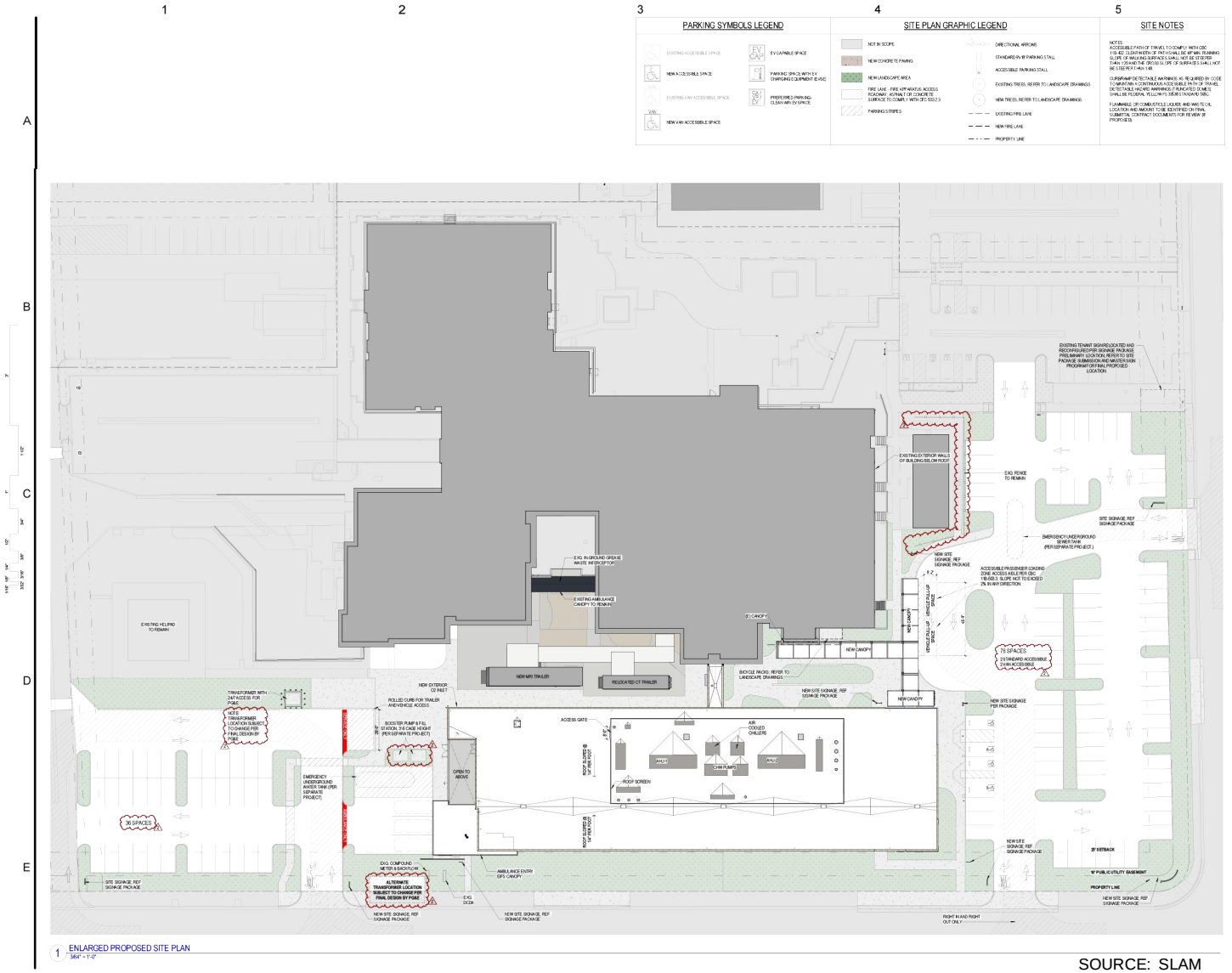
The ITE *Trip Generation Manual* was used to estimate the vehicular trip generation potential of the Project similarly to the approved background projects in the Background Conditions scenario.

For the purposes of this analysis, ITE Land Use Code (LUC) 610 ("Hospital") was used to estimate the trip generation potential of the Project. The trip generation potential of the Project is shown in **Table 6**. The Project would generate approximately 296 daily trips, 23 trips (15 in, 8 out) during the a.m. peak hour, and 13 trips (5 in, 8 out) during the p.m. peak hour.

Table 6 – Project Trip Generation

Land Use	Land Use Code	Size/Qty	Units	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Hospital	610	24.450	1,000 SF	296	15	8	23	6	8	13

Source: ITE *Trip Generation Manual, 11th Edition*, 2021.
Following average rates were used for daily, AM and PM trips.
Daily: 10.77
AM Peak: 0.82 (67% in, 33%)
PM Peak: 0.86 (35% in, 65% out)



SOURCE: SLAM

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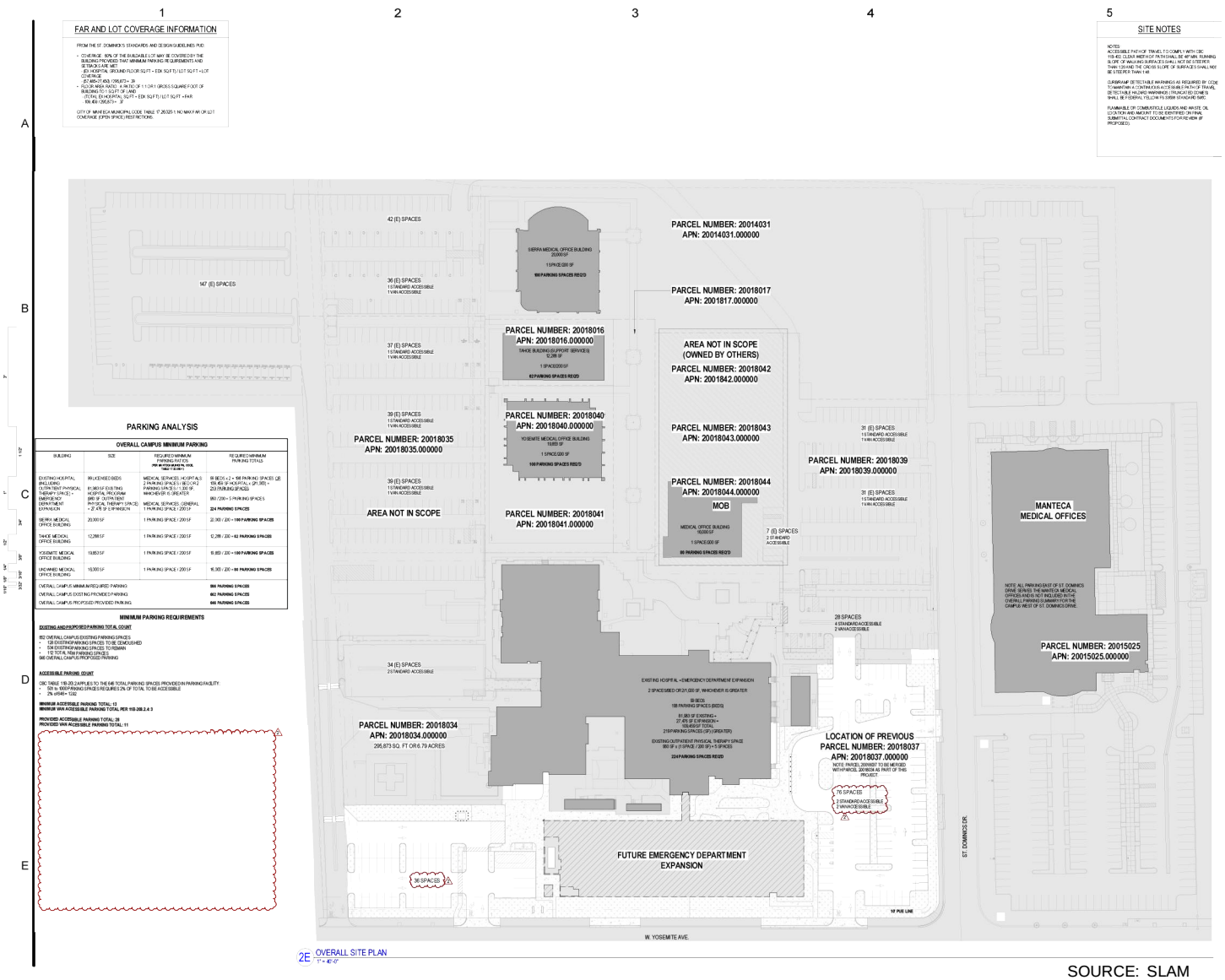
FIGURE 8
SITE DEVELOPMENT AREA



SOURCE: SLAM

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FIGURE 9
PROJECT SITE PLAN

PROJECT TRIP DISTRIBUTION & TRIP ASSIGNMENT

The trip distribution of the Project was developed based on existing travel patterns and knowledge of the study area. **Figure 10** presents the Project trip distribution for this analysis.

Trips were assigned to specific turning movements at the study intersections based on the assumed trip distribution. The Project trip assignment is shown in and **Figure 11.**

BACKGROUND PLUS PROJECT TRAFFIC VOLUMES

The Background plus Project intersection turning movement volumes are shown in **Figure 12**.

The Background plus Project volumes reflect the re-assignment of inbound eastbound left and outbound southbound right movements due to the raised median improvement along W. Yosemite Avenue from approximately St. Dominics Drive to Fishback Road as part of the Project. Breaks in the proposed raised median are planned to accommodate eastbound left turn lane pockets into the Center Project Driveway (Study Intersection 3) and at St. Dominics Drive (Study Intersection 5).

Additionally, the Project would construct a portion of the Center Street extension between the 320 N. Airport Way Subdivision Project and the Prose Manteca development. This implementation would complete the City's plan to extend Center Street between Trevino Avenue and N. Airport Way. The Project would additionally extend St. Dominics Drive and West Project Driveway to intersect with Center Street. The West Project Driveway connection would be restricted to outbound (exiting) movements from Kaiser Manteca to Center Street. Background plus Project volumes were appropriately reassigned to reflect traffic diverting from W. Yosemite Avenue to Center Street.

BACKGROUND PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections under Background plus Project Conditions plus traffic generated by the Project. The results of the analysis are presented in **Table 7**.

Analysis worksheets are available in **Appendix E**.

All study intersections function within acceptable LOS standards under Background plus Project Conditions.



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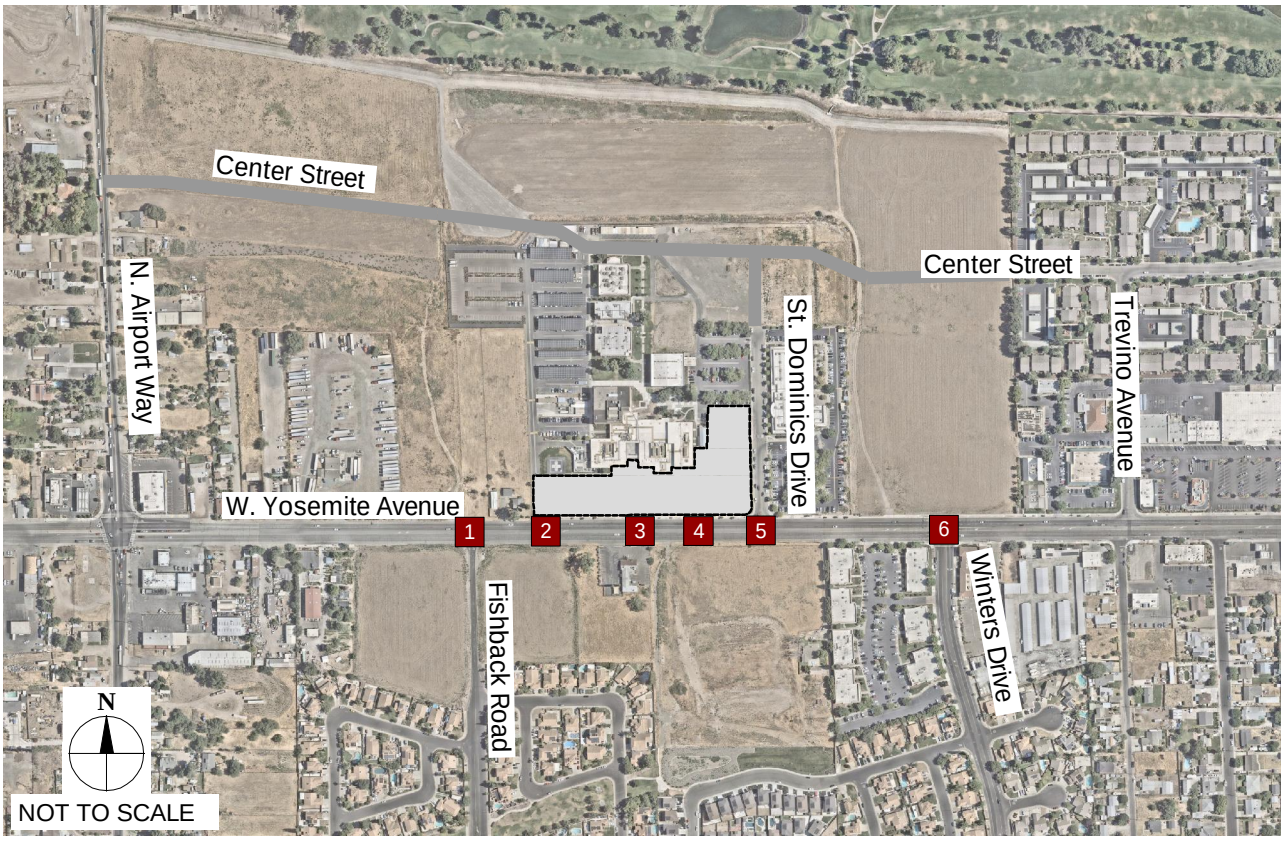
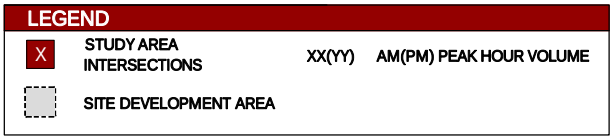
FIGURE 10
PROJECT TRIP DISTRIBUTION





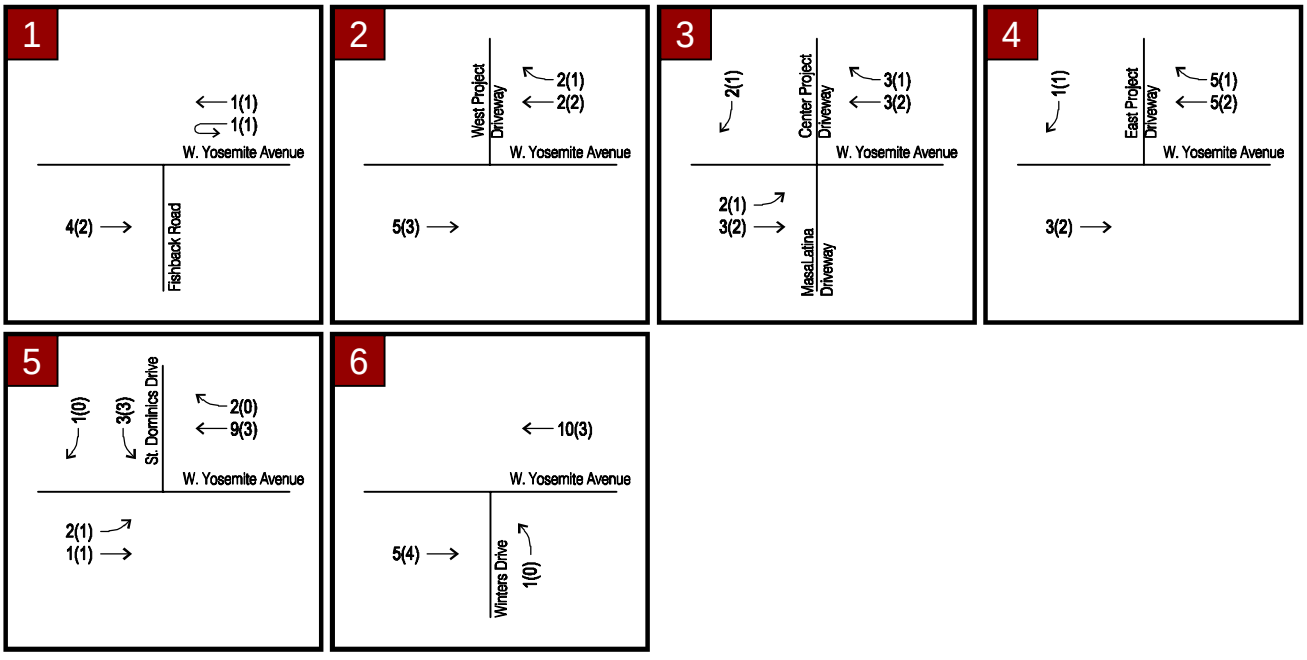


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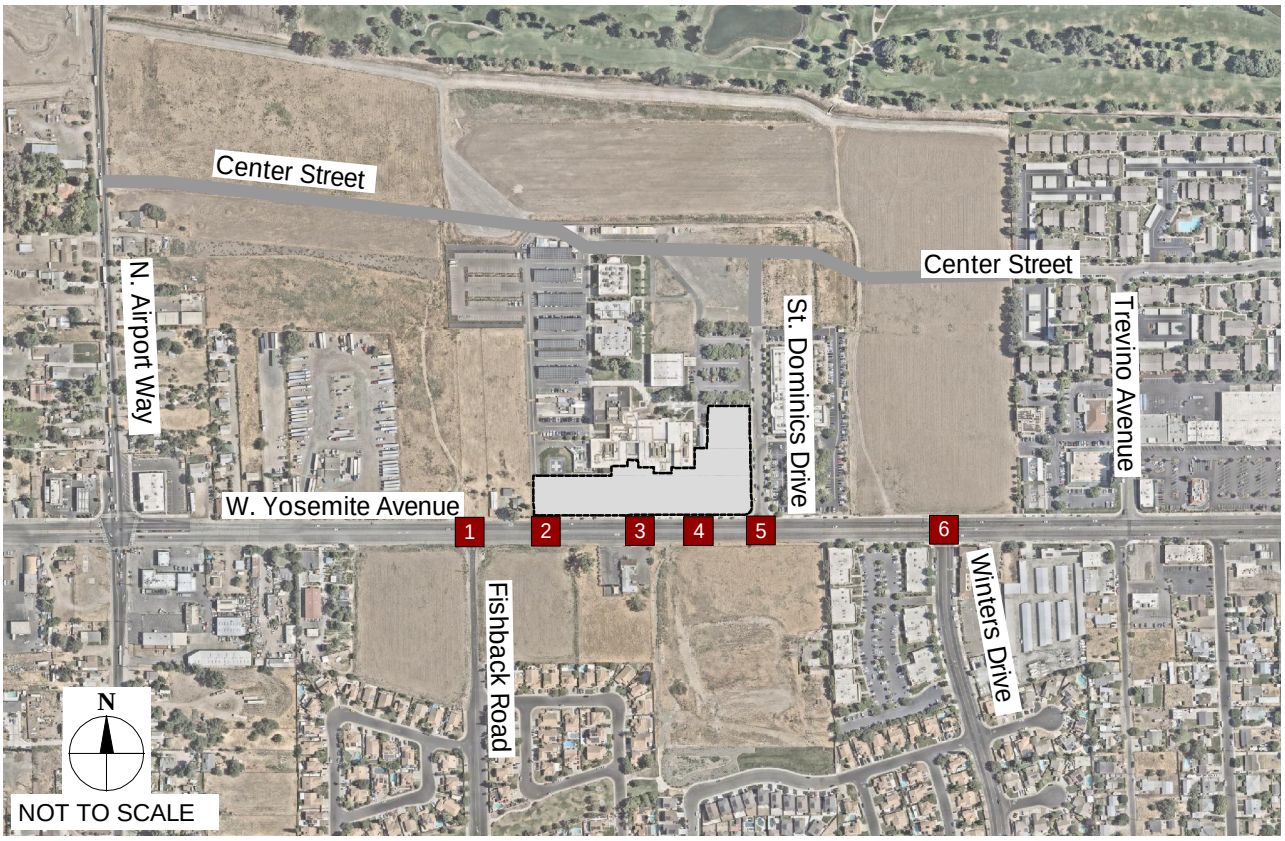
FIGURE 11
PROJECT PEAK HOUR
INTERSECTION TURNING MOVEMENT VOLUMES



LEGEND

X	STUDY AREA INTERSECTIONS	XX(YY)	AM(PM) PEAK HOUR VOLUME
	SITE DEVELOPMENT AREA		

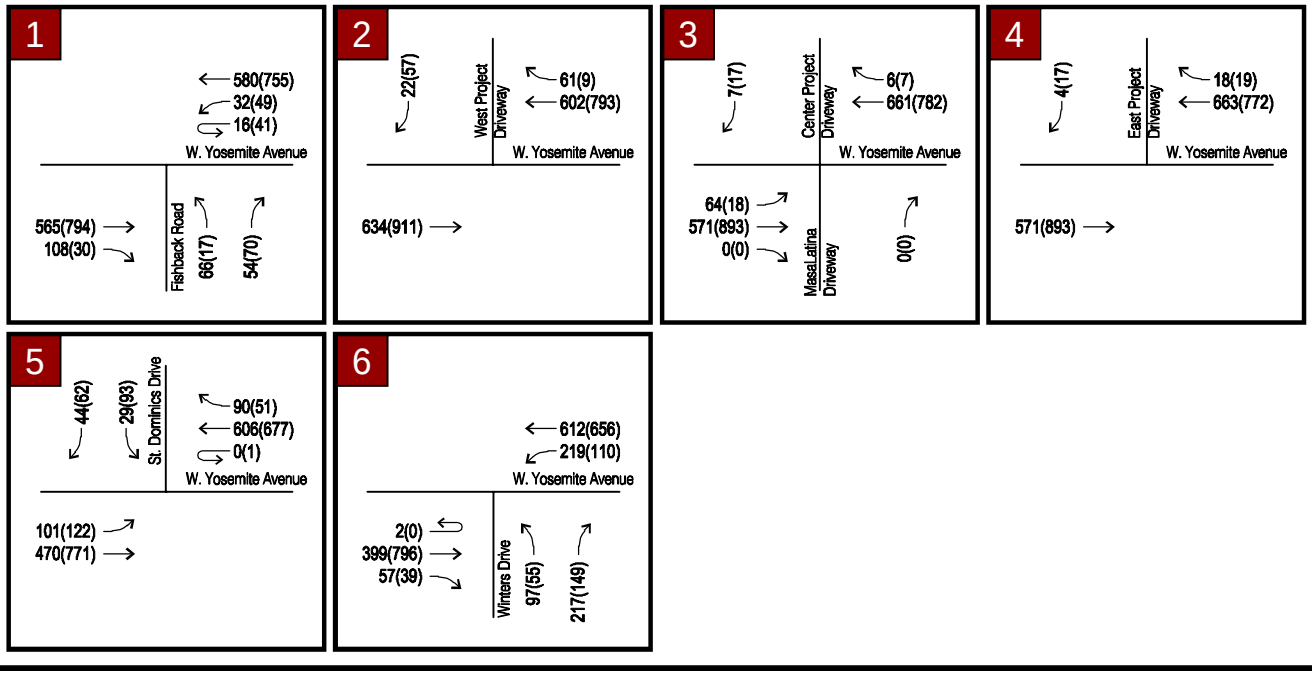


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FIGURE 12
BACKGROUND PLUS PROJECT CONDITION PEAK HOUR INTERSECTION TURNING MOVEMENT VOLUMES

Table 7 – Background plus Project Conditions Intersection Level of Service Summary

#	Intersection	Control[1]	Background				Background + Project					
			AM Peak		PM Peak		AM Peak			PM Peak		
			LOS	Delay (sec)[2]	LOS	Delay (sec)[2]	LOS	Delay (sec)[2]	Var	LOS	Delay (sec)[2]	Var
1	W. Yosemite Ave. / Fishback Rd.	SSSC	C	18.9	C	15.4	C	19.0	+0.1	C	15.4	0.0
2	W. Yosemite Ave. / West Project Dwy.	SSSC	B	11.1	B	11.9	B	11.2	+0.1	B	11.9	0.0
3	W. Yosemite Ave. / Central Project Dwy.	SSSC	B	10.9	B	11.3	B	10.9	0.0	B	11.3	0.0
4	W. Yosemite Ave. / East Project Dwy.	SSSC	B	10.9	B	11.3	B	11.0	+0.1	B	11.3	0.0
5	W. Yosemite Ave. / St. Dominics Dr.	SSSC / Signal[3]	C	15.5	D	25.9	A	7.4	-8.1	A	8.4	-17.5
6	W. Yosemite Ave. / Winters Dr.	Signal	B	17.7	B	12.5	B	17.7	0.0	B	12.5	0.0

Notes: Locations operating at unacceptable LOS or worse are in **red**.

1. SSSC = side-street stop control
2. The weighted average control delay is reported for signalized intersections. The delay for the worst movement is reported for SSSC intersections.
3. Project will signalize the intersection at St. Dominics Drive (Study Intersection 5).

4. CUMULATIVE CONDITIONS & CUMULATIVE PLUS PROJECT CONDITIONS

This section describes the operating conditions of the study intersection during Cumulative Conditions and Cumulative plus Project Conditions.

4.1 CUMULATIVE CONDITIONS

This section describes the operating conditions of the study intersections prior to implementation of the Project during the horizon year of 2043. The Cumulative Conditions scenario consists of cumulative traffic volumes and future roadway improvements within the study area planned by the City of Manteca.

CUMULATIVE TRANSPORTATION IMPROVEMENTS

Future roadway improvements in the study area planned by the City of Manteca include the following:

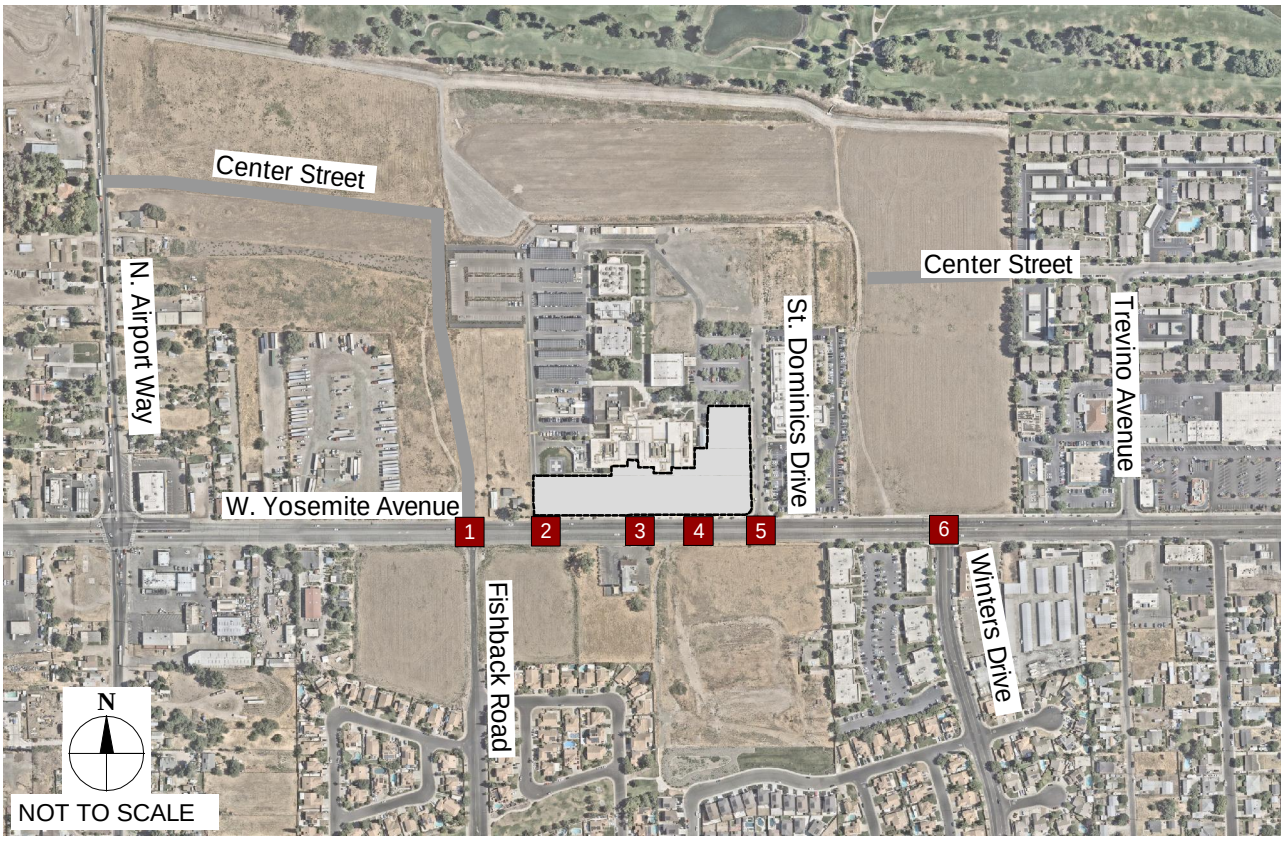
- Conversion of the one-way stop control at W. Yosemite Avenue & Fishback Road (Study Intersection 1) to a roundabout (**Appendix H**). Additionally, the roundabout improvement at W. Yosemite Avenue & Fishback Road (Study Intersection 1) would restrict movement at W. Yosemite Avenue & West Project Driveway (Study Intersection 2) to only right-in right-out movements.
- Signalization of W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5) (**Appendix I**).

Figure 13 presents the intersection lane geometry and traffic control in Cumulative Conditions.

CUMULATIVE TRAFFIC VOLUMES

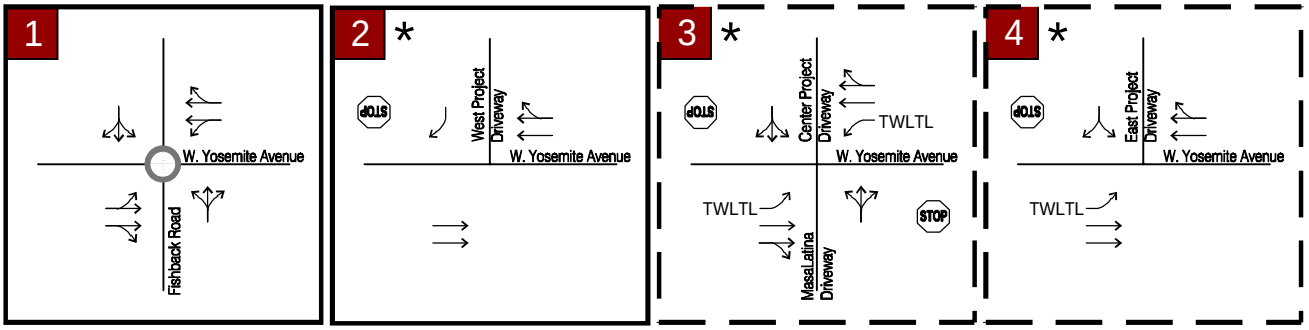
Cumulative traffic volumes were developed using Furness methodology. Link volumes from base year 2016 and future year 2046 within the San Joaquin Council of Governments Travel Demand Model were used to determine annual growth rates. These annual growth rates were applied to existing leg volumes and grown for the study period of 19 years (2043 minus 2024). The grown leg volumes were converted to intersection turning movement volumes using the Furness methodology within the *Turns W32* software.

The peak hour intersection turning movement volumes for the Cumulative Conditions scenario are shown in **Figure 14**.



LEGEND

X STUDY AREA INTERSECTIONS	STOP STOP SIGN		ROUNDABOUT
SITE DEVELOPMENT AREA	XX' STORAGE LENGTH		
TRAFFIC SIGNAL	TWLTL TWO-WAY LEFT TURN LANE		



NOTE: DASHED INTERSECTION REFLECT UNCHANGED CONFIGURATION FROM EXISTING CONDITIONS.

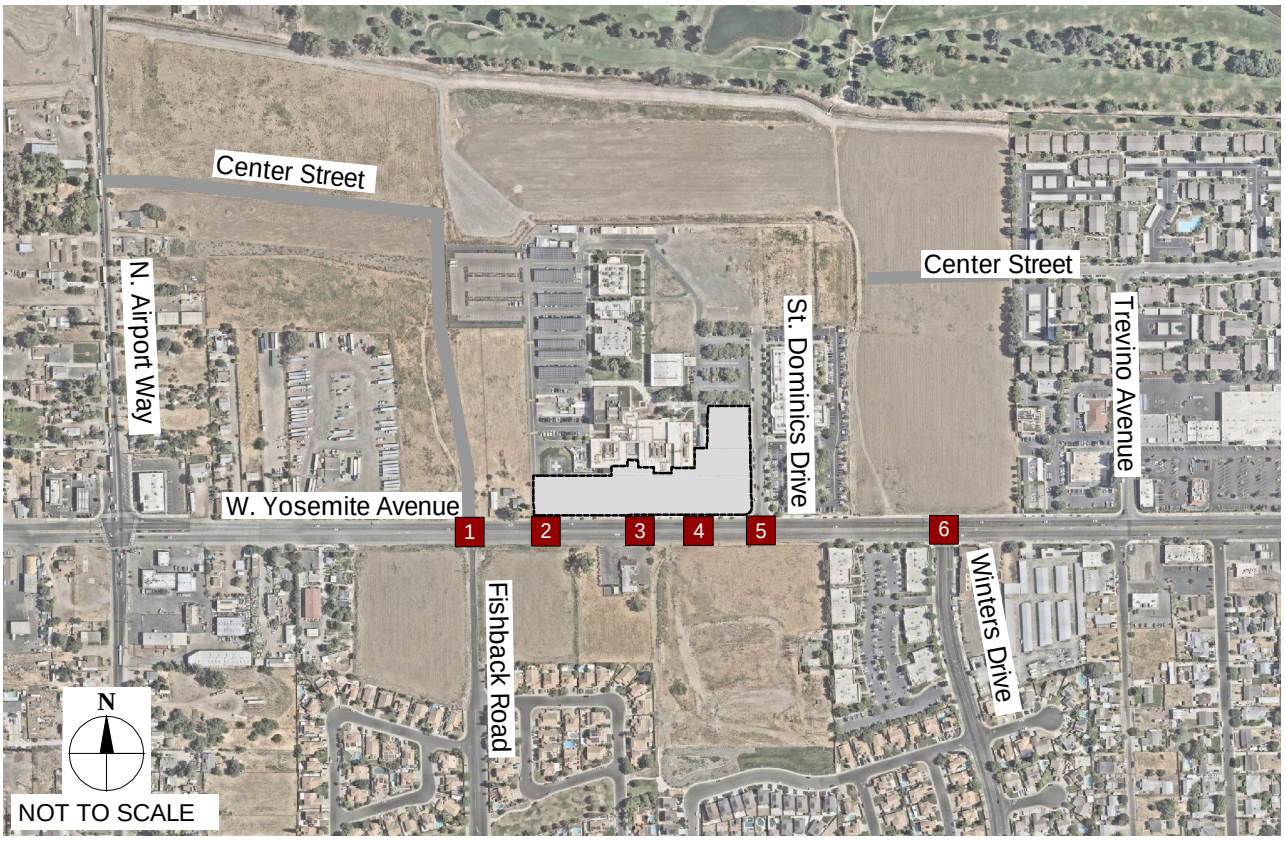
RBT AT INTERSECTION 1 WILL CONVERT INTERSECTION 2 TO RIGHT IN RIGHT OUT. ELIMINATE EBL AND SBL AT INTERSECTION 2

* THE PROJECT WILL CONSTRUCT A RAISED MEDIAN WHICH WILL ELIMINATE THE EBL AND SBL AT INTERSECTION 4 AND NBL, SBL & WBL AT INTERSECTION 3.

** THE PROJECT WILL CONSTRUCT CENTER STREET WITHIN PROJECT PROPERTY AND EXTEND ST. DOMINICS DRIVE TO INTERSECT WITH CENTER STREET.

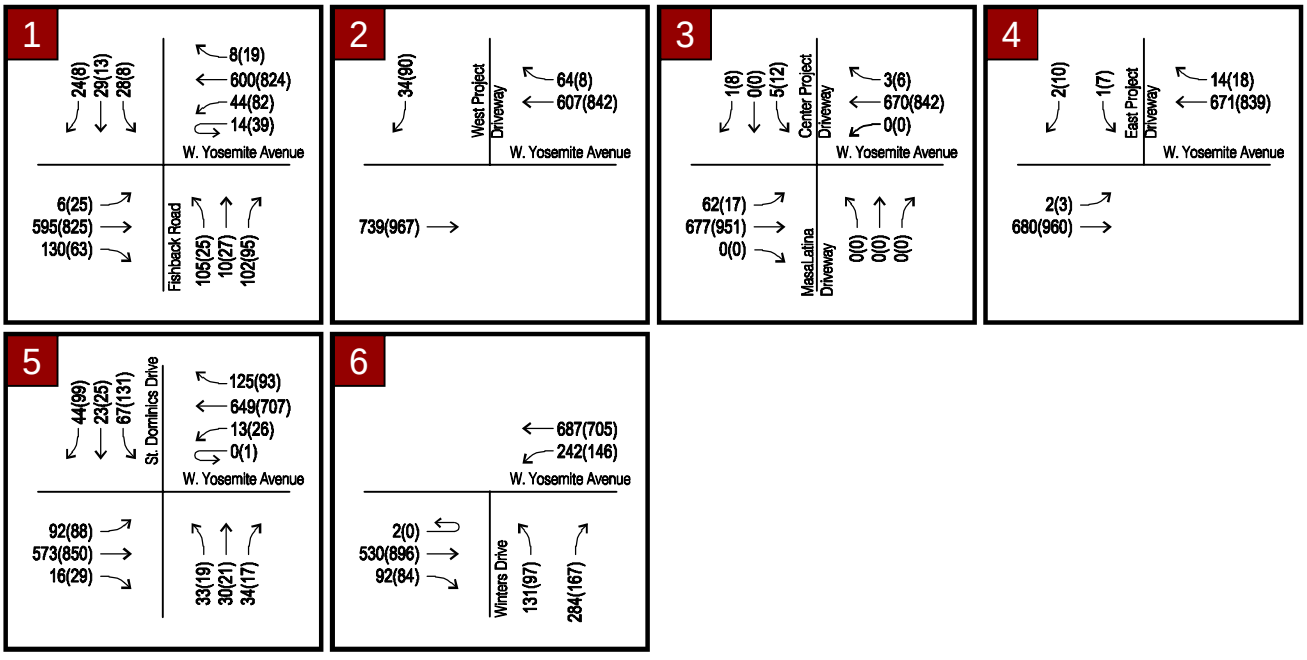
Kimley»Horn

FIGURE 13
CUMULATIVE LANE GEOMETRY AND TRAFFIC CONTROL



LEGEND

X	STUDY AREA INTERSECTIONS	XX(YY)	AM(PM) PEAK HOUR VOLUME
	SITE DEVELOPMENT AREA		



Kimley»Horn

FIGURE 14
CUMULATIVE CONDITIONS
PEAK HOUR TURNING MOVEMENT VOLUMES

CUMULATIVE CONDITIONS INTERSECTION LEVEL OF SERVICE

Traffic operations under Cumulative Conditions were evaluated at the study intersections. The results of the analysis are shown in **Table 8**. Analysis worksheets are available in **Appendix F**.

All study intersections function within acceptable LOS standards under Cumulative Conditions.

Table 8 – Cumulative Conditions Intersection Level of Service Summary

#	Intersection	Control[1]	Cumulative			
			AM Peak		PM Peak	
			LOS	Delay (sec)[2]	LOS	Delay (sec)[2]
1	W. Yosemite Ave. / Fishback Rd.	RAB	A	6.6	A	6.8
2	W. Yosemite Ave. / West Project Dwy.	SSSC	B	11.4	B	12.7
3	W. Yosemite Ave. / Central Project Dwy.	SSSC	C	19.3	C	18.7
4	W. Yosemite Ave. / East Project Dwy.	SSSC	B	13.0	C	15.0
5	W. Yosemite Ave. / St. Dominics Dr.	Signal	A	9.0	B	12.7
6	W. Yosemite Ave. / Winters Dr.	Signal	C	24.0	B	15.6

Notes: Locations operating at unacceptable LOS or worse are in **red**.

1. RAB = roundabout; SSSC = side-street stop control
2. The weighted average control delay is reported for signalized intersections. The delay for the worst movement is reported for SSSC intersections.

4.2 CUMULATIVE PLUS PROJECT CONDITIONS

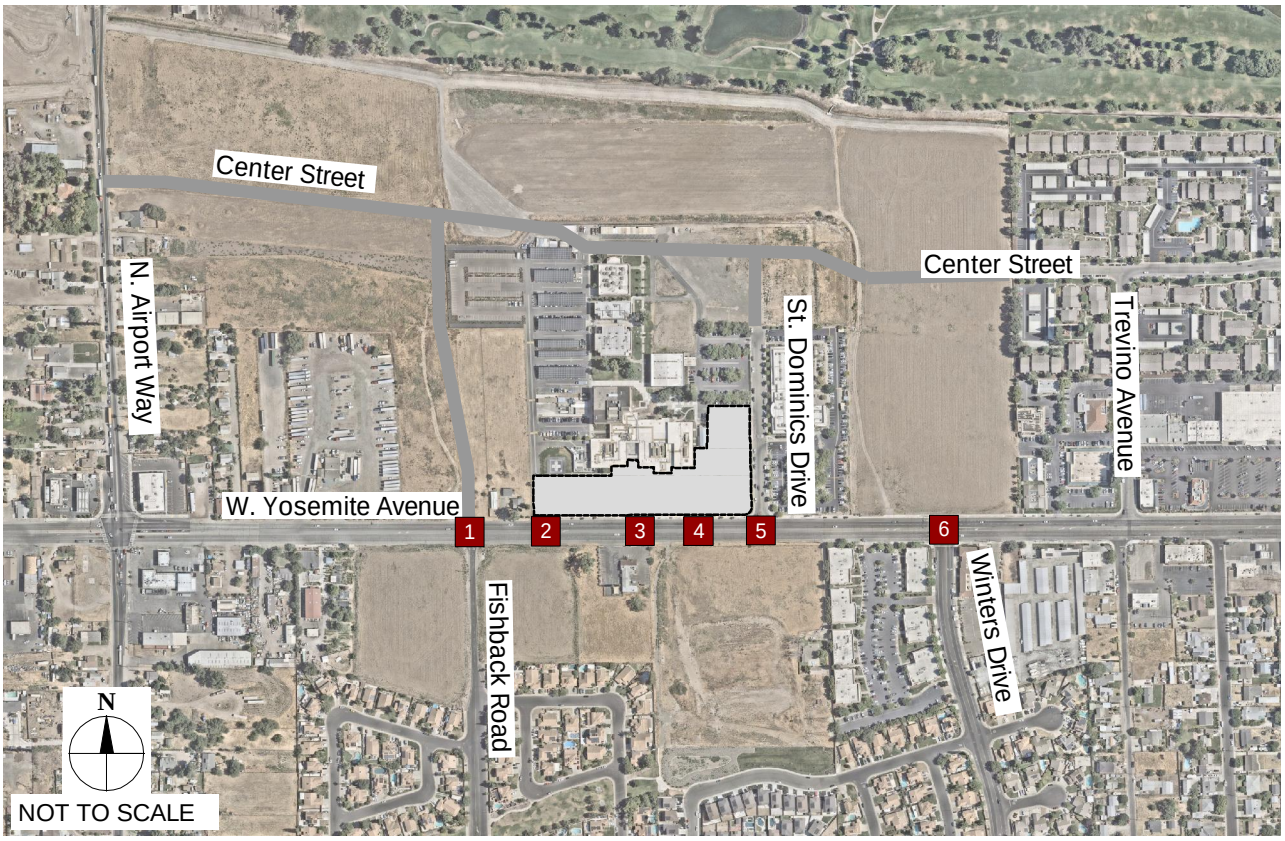
This section describes the impacts of the Project at the study intersections and the surrounding roadway system. The Cumulative plus Project Conditions scenario consists of cumulative traffic volumes, planned improvements to the local roadway network by the City of Manteca, and new traffic generated by the Project.

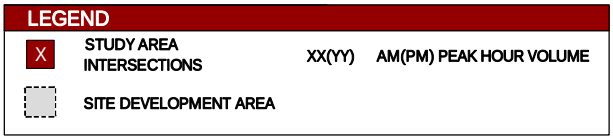
CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES

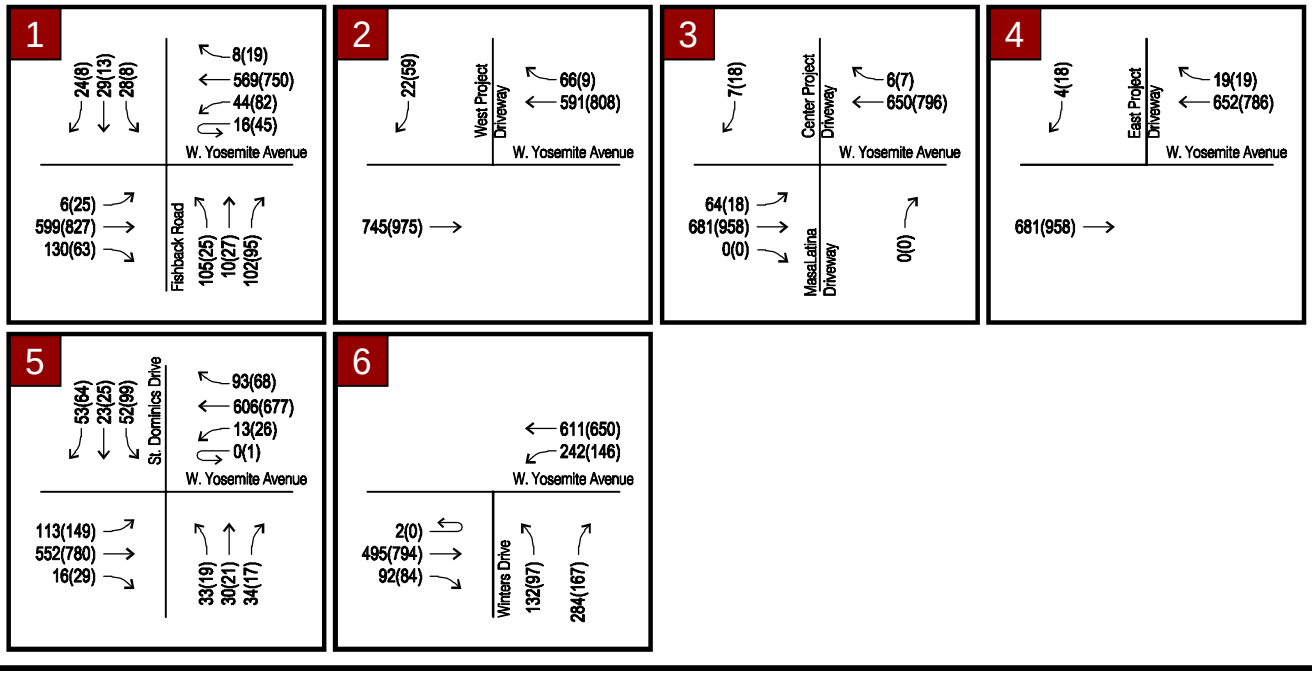
The peak hour turning movement volumes for the Project (**Figure 11**) and the adjusted Cumulative Conditions scenario (**Figure 14**) were combined to develop the peak hour turning movement volumes shown in **Figure 15**.

The Cumulative plus Project volumes reflect the re-assignment of inbound eastbound left and outbound southbound right movements due to the raised median improvement along W. Yosemite Avenue from approximately St. Dominics Drive to Fishback Road. Breaks in the proposed raised median are planned to accommodate eastbound left turn lane pockets into the Center Project Driveway (Study Intersection 3) and at St. Dominics Drive (Study Intersection 5).

Additionally, the Project would construct a portion of the Center Street extension between the 320 N. Airport Way Subdivision Project and the Prose Manteca development. This implementation would complete the City's plan to extend Center Street between Trevino Avenue and N. Airport Way. The Project would also extend St. Dominics Drive and West Project Driveway north to intersect with Center Street. The West Project Driveway connection would permit exit only movements. Cumulative plus Project volumes were appropriately reassigned to reflect traffic diverting from W. Yosemite Avenue to Center Street.







Kimley»Horn

FIGURE 15

CUMULATIVE PLUS PROJECT CONDITIONS PEAK HOUR INTERSECTION TURNING MOVEMENT VOLUMES

CUMULATIVE PLUS PROJECT CONDITIONS INTERSECTION LEVEL OF SERVICE

Traffic operations under Cumulative Conditions were evaluated at the study intersections. The results of the analysis are shown in **Table 9**. Analysis worksheets are available in **Appendix G**.

All study intersections function within acceptable LOS standards under Cumulative plus Project Conditions.

Table 9 – Cumulative plus Project Conditions Intersection Level of Service Summary

#	Intersection	Control[1]	Cumulative				Cumulative + Project					
			AM Peak		PM Peak		AM Peak			PM Peak		
			LOS	Delay (sec)[2]	LOS	Delay (sec)[2]	LOS	Delay (sec)[2]	Var	LOS	Delay (sec)[2]	Var
1	W. Yosemite Ave. / Fishback Rd.	RAB	A	6.6	A	6.8	A	6.6	0.0	A	6.7	-0.1
2	W. Yosemite Ave. / West Project Dwy.	SSSC	B	11.4	B	12.7	B	11.1	-0.3	B	12.0	-0.7
3	W. Yosemite Ave. / Central Project Dwy.	SSSC	C	19.3	C	18.7	B	10.9	-8.4	B	11.4	-7.3
4	W. Yosemite Ave. / East Project Dwy.	SSSC	B	13.0	C	15.0	B	10.9	-2.1	B	11.4	-3.6
5	W. Yosemite Ave. / St. Dominics Dr.	Signal	A	9.0	B	12.7	B	13.3	+4.3	B	12.7	0.0
6	W. Yosemite Ave. / Winters Dr.	Signal	C	24.0	B	15.6	C	23.9	-0.1	B	15.2	-0.4

Notes: Locations operating at unacceptable LOS or worse are in **red**.

1. RAB = roundabout; SSSC = side-street stop control
2. The weighted average control delay is reported for signalized and roundabout intersections. The delay for the worst movement is reported for SSSC intersections.

5. SIGNAL WARRANTS ANALYSIS

This section discusses the results of a signal warrant analysis conducted for the unsignalized study intersections evaluated in this study. The unsignalized study intersections include the following:

- W. Yosemite Avenue & Fishback Road (Study Intersection 1)
- W. Yosemite Avenue & West Project Driveway (Study Intersection 2)
- W. Yosemite Avenue & Central Project Driveway (Study Intersection 3)
- W. Yosemite Avenue & East Project Driveway (Study Intersection 4)
- W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5)

Signal warrant analyses of the unsignalized study intersections were conducted for all study scenarios to provide comparisons with the results under the plus Project conditions. The comparisons would provide insight as to whether traffic conditions before Project implementation warrant signalization or if the Project itself triggers the need for signalization.

This traffic study assesses the need for signalization solely using Warrant 3 (Peak Hour Warrant) as described in the *2014 California Manual on Uniform Traffic Control Devices, Revision 8,* (CA MUTCD)[3]. The Peak Hour Warrant is satisfied when the sum of traffic volumes on each of the major street approaches and traffic volumes on the highest volume minor approach exceed established thresholds for one hour of the day. The thresholds for the Peak Hour Warrant are depicted in Figure 4C-3 and Figure 4C-4 in Chapter 4C of the CA MUTCD.

The results of the analysis are shown in **Figure 16**, **Figure 17**, **Figure 18**, **Figure 19,** and **Figure 20**. The results are additionally tabulated in **Table 10**.

Table 10 – Peak Hour Warrants

#	Intersection	Peak Hour	Warranted?				
			Existing Conditions	Background Conditions		Cumulative Conditions	
				Without Project	With Project	Without Project	With Project
1	W. Yosemite Ave. / Fishback Rd.	AM	x	x	x	x	x
		PM	x	x	x	x	x
2	W. Yosemite Ave. / West Project Dwy.	AM					
		PM	x	x		x	
3	W. Yosemite Ave. / Center Project Dwy.	AM					
		PM					
4	W. Yosemite Ave. / East Project Dwy.	AM					
		PM					
5	W. Yosemite Ave. / St. Dominics Dr.	AM				x	x
		PM	x	x	x	x	x

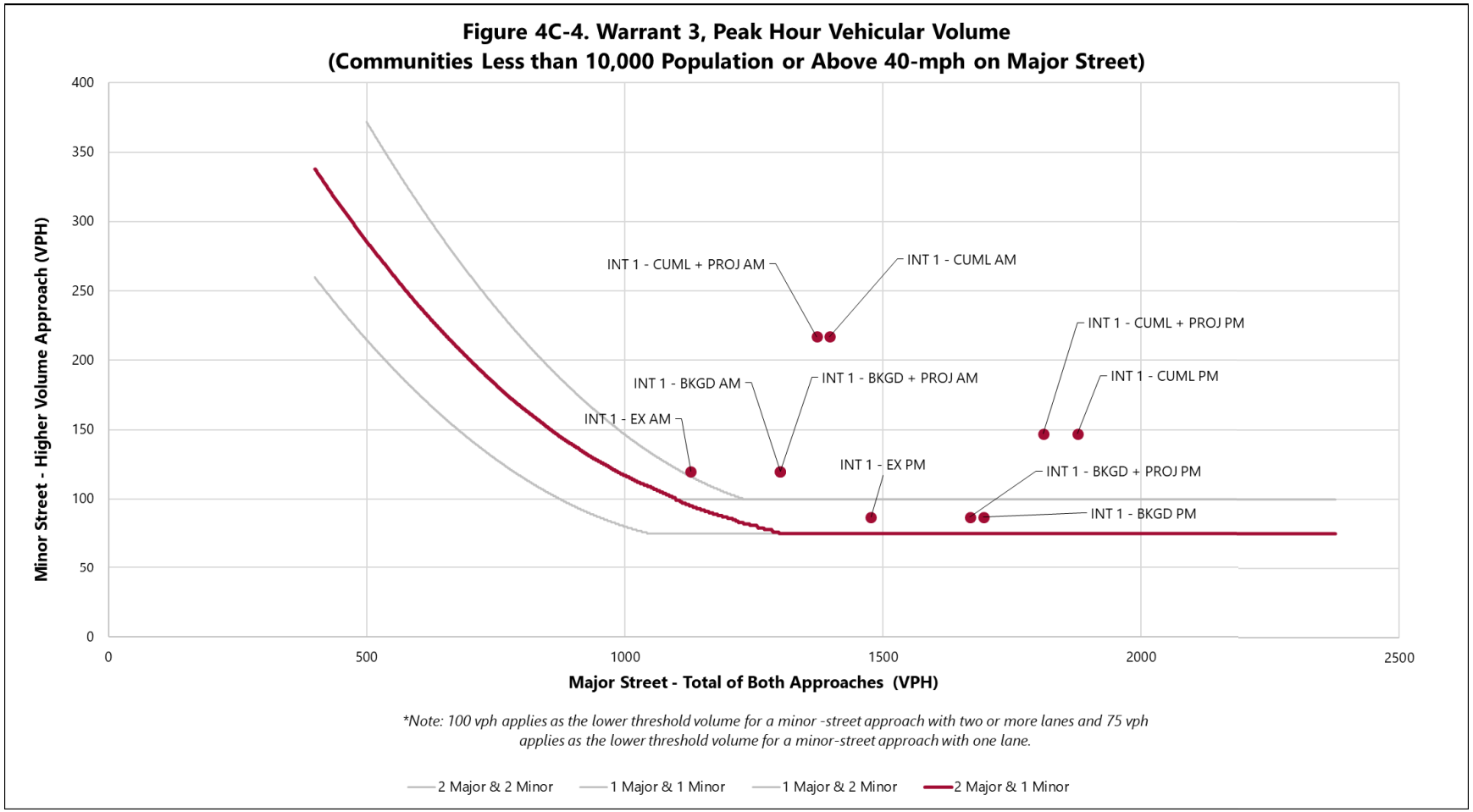
Note: "x" indicates that a signal is warranted.

[3] *2014 California Manual on Uniform Traffic Control Devices, Revision 8,* (FHWA's MUTCD 2009 Edition, as amended for use in California), January 11, 2024

Note that the satisfaction of a peak hour warrant does not in itself require the installation of a traffic control signal and other warrants and factors should be considered. Traffic signals are warranted (though not necessarily recommended) at the following locations:

- W. Yosemite Avenue & Fishback Road (Study Intersection 1) during all analysis conditions. A signal is not recommended because there are City plans to convert the intersection to a roundabout.
- W. Yosemite Avenue & West Project Driveway (Study Intersection 2) during the p.m. peak hour of Existing, Background (with no Project), and Cumulative (with no Project) analysis conditions. A signal is not recommended because there are City plans to add a raised median through the intersection and to convert the adjacent W. Yosemite Avenue & Fishback Road (Study Intersection 1) to a roundabout, either of which would restrict movements at W. Yosemite Avenue & West Project Driveway (Study Intersection 2) to right-in-right-out. The Project proposes to construct the raised median improvement.
- W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5) during the a.m. peak hours of Cumulative (with no Project) Conditions and Cumulative plus Project Conditions and the p.m. peak hours of all analysis conditions. A signal is recommended as there are City plans to signalize the intersection. The Project proposes to construct this signal. Note that signalization at this location is warranted before the addition of Project-related traffic and thus improves a pre-existing deficiency. The Project should contribute its fair share toward signalization.

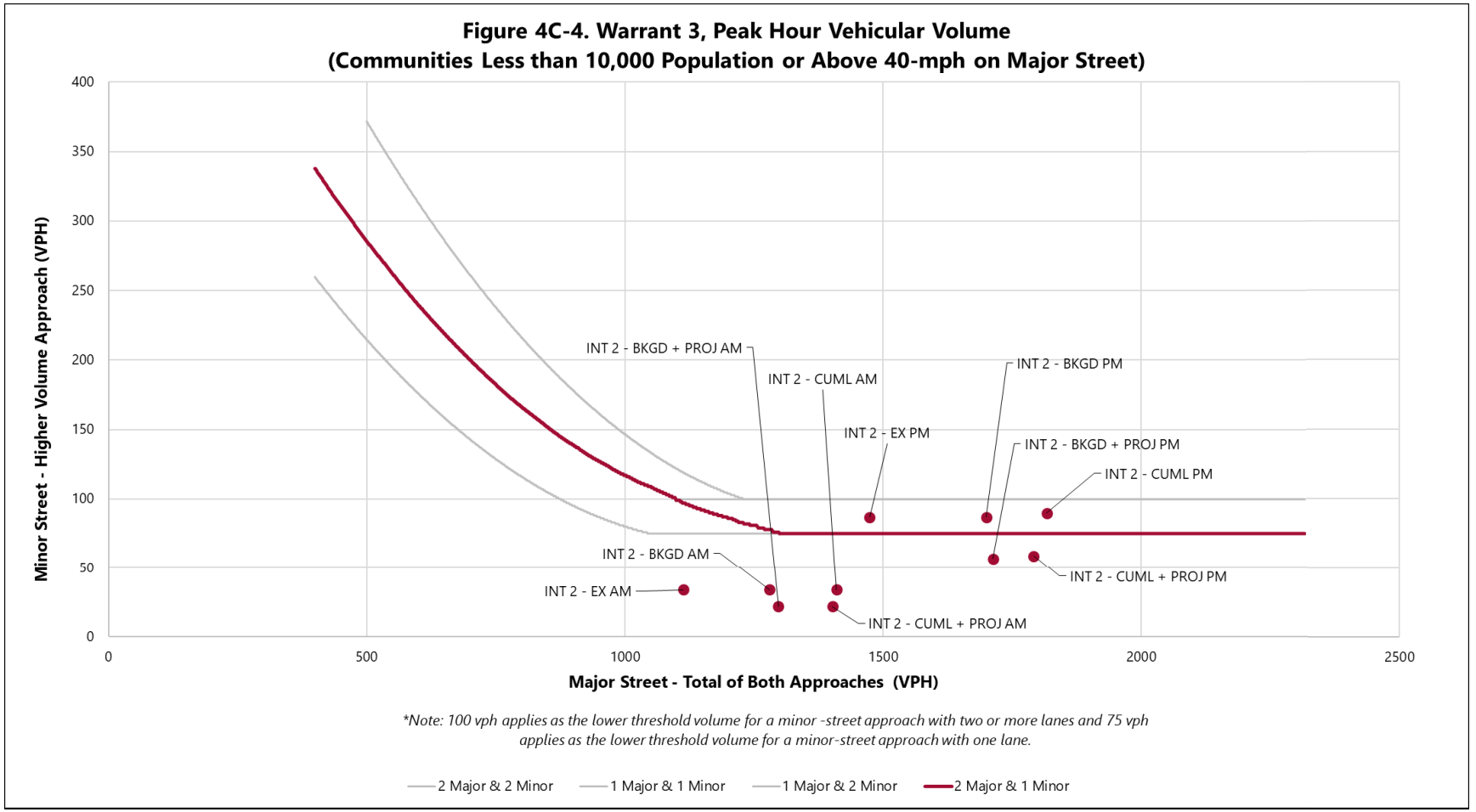
Figure 16 – Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & Fishback Road (Study Intersection 1)



Source: CA MUTCD, 2024

Note: Upper threshold = highlighted line

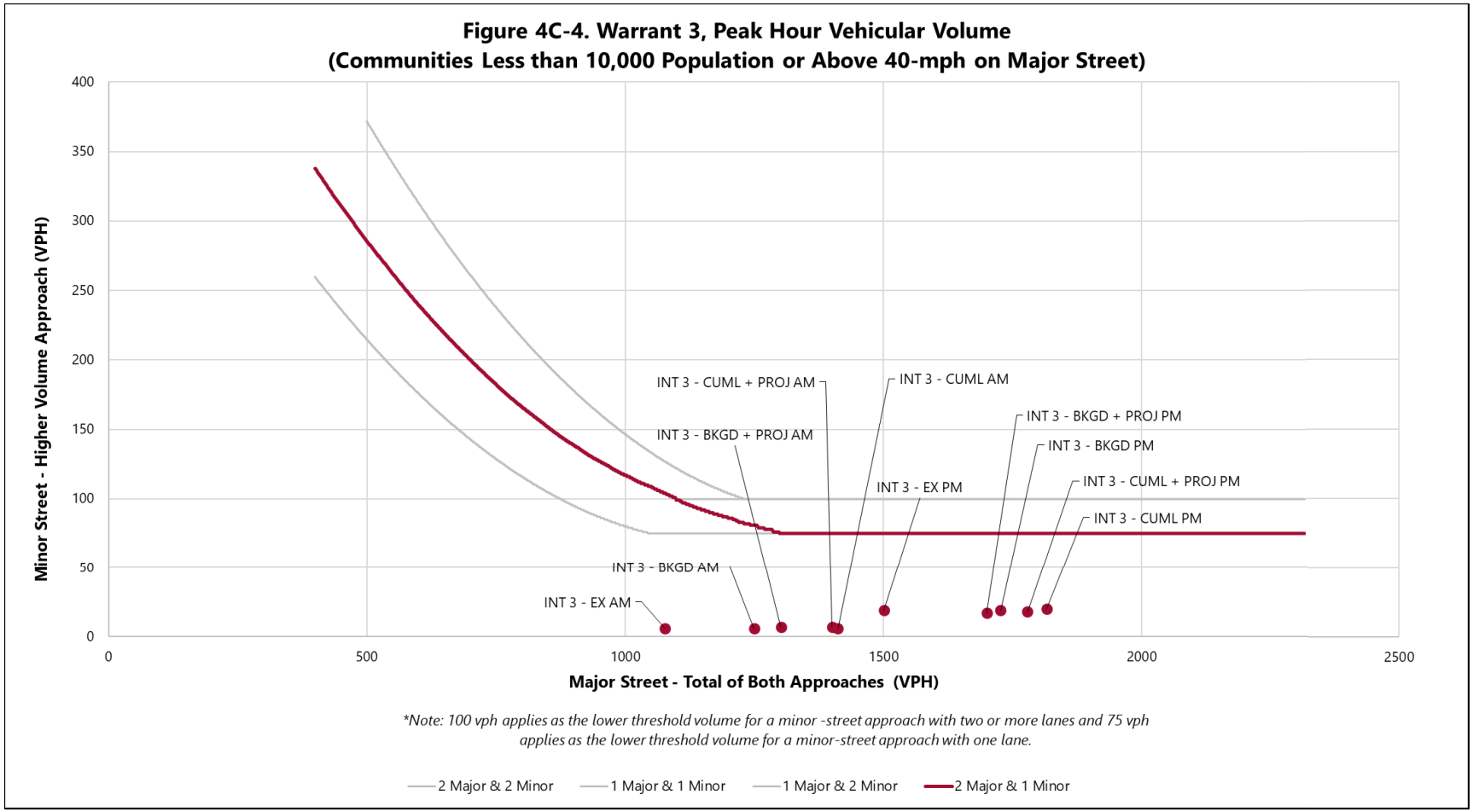
Figure 17 – Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & West Project Driveway (Study Intersection 2)



Source: CA MUTCD, 2024

Note: Upper threshold = highlighted line

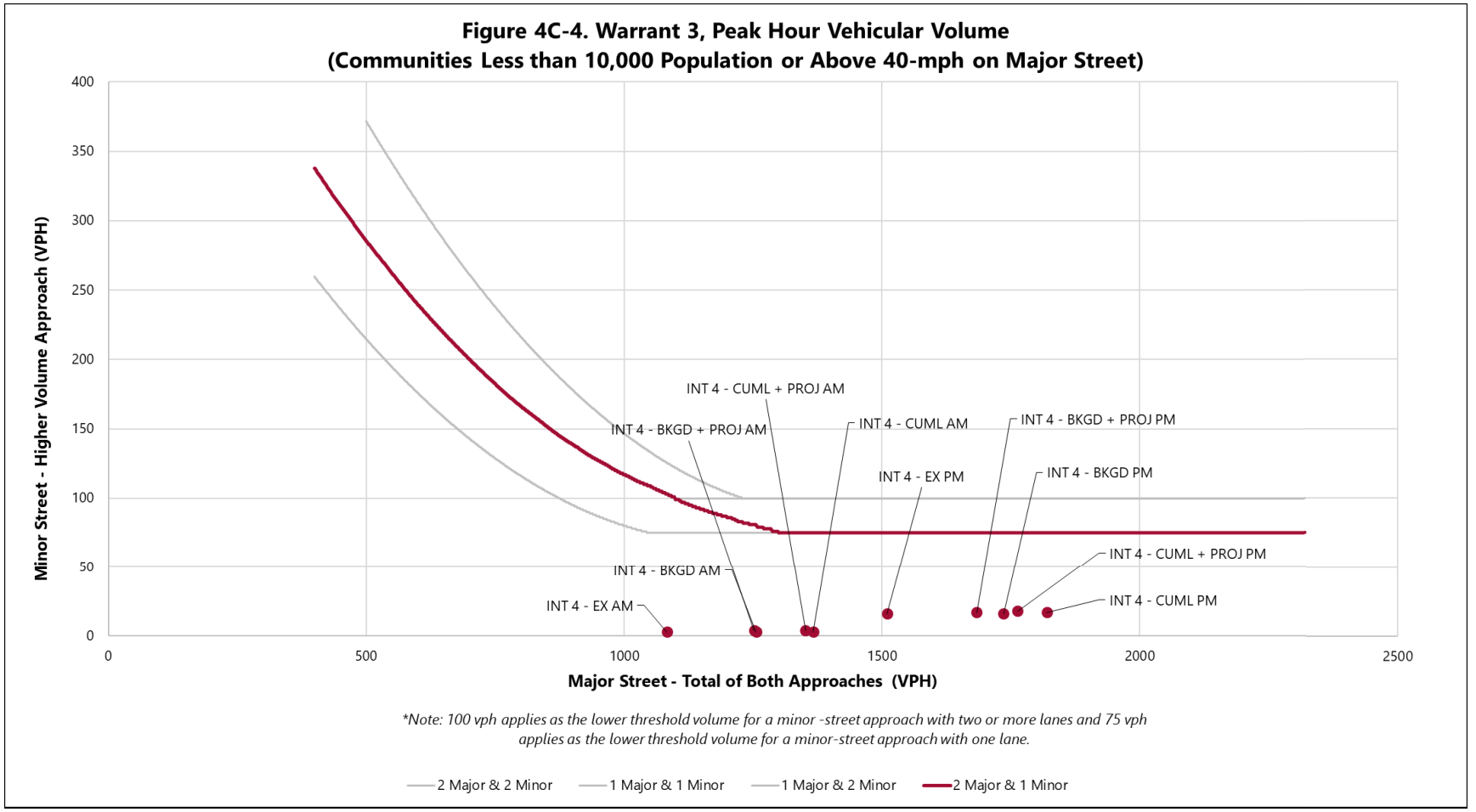
Figure 18 – Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & Central Project Driveway (Study Intersection 3)



Source: CA MUTCD, 2024

Note: Upper threshold = highlighted line

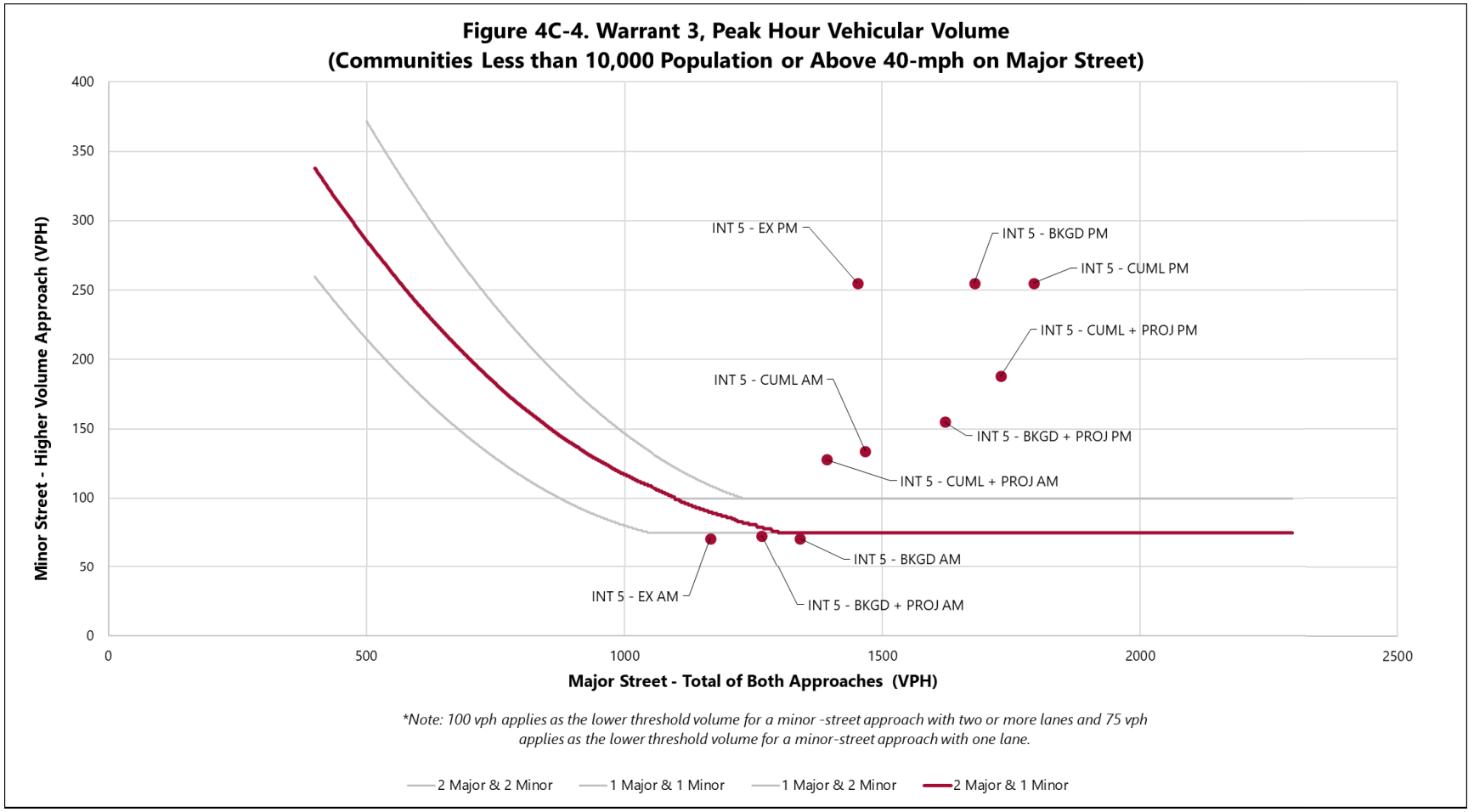
Figure 19 – Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & East Project Driveway (Study Intersection 4)



Source: CA MUTCD, 2024

Note: Upper threshold = highlighted line

Figure 20 - Peak Hour Warrant Volumes and Thresholds: W. Yosemite Avenue & St. Dominics Dr (Study Intersection 5)



Source: CA MUTCD, 2024

Note: Upper threshold = highlighted line

6. QUEUEING ANALYSIS

A queueing analysis assesses the adequacy of storage bay (or "turn pocket") lengths at intersection approaches by simulating queue lengths. As congestion increases, traffic typically forms lines of stopped vehicles (i.e., queues) at intersection approaches. Inadequate turn pocket lengths may contribute to inefficient operating conditions and safety issues as traffic could extend beyond turn pocket lengths into mainline lanes and block traffic and increase the risk of rear-end collisions.

Although the City of Manteca does not establish standards to assess vehicular queue lengths at intersections, the *Transportation Impact Analysis Guidelines* establishes the 95th percentile queue as the standard measure to assess vehicular queues at freeway ramp facilities.

For the purposes of this analysis, the 95th percentile queue length was used to represent the standard intersection queue length in accordance with HCM methodology, which refers to the 95th percentile as a benchmark in the transportation engineering practice. The 95th percentile queue represents a maximum queue length that is formed by fluctuating traffic volumes during peak periods 95 percent of the time.

A typical vehicular length of 25 feet was assumed for the analysis. An operational deficiency was considered to occur if a queue exceeds its turn pocket length and Project-related traffic causes the queue to increase by one (1) or more vehicles (i.e., 25 feet or more).

The results are shown in **Table 11** and **Table 12**.

Existing, Background, and Background plus Project Conditions Queues

Operational deficiencies occur at the westbound left turn pocket at W. Yosemite Avenue & Winters Drive (Study Intersection 6) during the p.m. peak hours under Existing, Background, and Background plus Project Conditions.

The operational deficiencies at the westbound left turn pocket at W. Yosemite Avenue & Winters Drive (Study Intersection 6) during the p.m. peak hours under Existing and Background Conditions occur without the addition of Project-related traffic and thus are not considered Project deficiencies. Additionally, the queue length increases by less than 25 feet from Background Conditions to Background plus Project Conditions. There is no Project-related queueing deficiency at this location.

Cumulative and Cumulative plus Project Conditions Queues

Operational deficiencies occur during both a.m. and p.m. peak hours under Cumulative and Cumulative plus Project Conditions. The queue length does not change with the addition of Project-related traffic. Thus, as the queue length does not increase by 25 feet or more, it is not considered as a Project queueing deficiency.

Table 11 – Study Intersection Turn Pocket Queueing Analysis – Existing, Background, and Background plus Project Conditions

#	Intersection	Movement	Without Project		With Project		Existing		Background				Background Plus Project			
											Difference				Difference	
			Control	Storage Length (ft)	Control	Storage Length (ft)	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	W. Yosemite Ave. & Fishback Rd.	WBL	SSSC	50	SSSC	50	3	5	8	18	+5	+13	8	18	0	0
2	W. Yosemite Ave. & West Project Dwy.	EBL	SSSC	50	SSSC	-	5	0	0	0	-5	0	-	-	-	-
3	W. Yosemite Ave. & Central Project Dwy.	EBL	SSSC	50	SSSC	50	0	0	8	3	+8	+3	8	3	0	0
		WBL		50		-	0	0	0	0	0	0	-	-	-	-
4	W. Yosemite Ave. & East Project Dwy.	EBL	SSSC	50	SSSC	-	0	0	0	0	0	0	-	-	-	-
5	W. Yosemite Ave. & St. Dominics Dr.	EBL	SSSC	50	Signal	200	10	5	13	13	+3	+8	68	99	+55	+86
		WBU		50		170	0	0	0	0	0	0	0	4	0	+4
		SBL		-		100	-	-	18	63	-	-	26	52	-	-
6	W. Yosemite Ave. & Winters Dr.	NBR	Signal	80	Signal	80	52	48	53	48	+1	0	53	48	0	0
		EBU		170		170	9	0	9	0	0	0	9	0	0	0
		WBL		95		95	**205**	114	**209**	114	+4	0	**210**	114	+1	0

Note:

- Queues exceeding available storage length by greater than 25 feet are shaded.
- Differences in queues greater than 25 feet due to Project-related traffic for queues exceeding available storage length by greater than 25 feet are shown in **red**.

Table 12 – Study Intersection Turn Pocket Queueing Analysis – Cumulative and Cumulative plus Project Conditions

#	Intersection	Movement	Without Project		With Project		Cumulative		Cumulative Plus Project			
			Control	Storage Length (ft)	Control	Storage Length (ft)	AM Peak	PM Peak	AM Peak	PM Peak	Difference	
											AM Peak	PM Peak
1	W. Yosemite Ave. & Fishback Rd.	NB	Roundabout	-	Roundabout	-	44	27	44	27	0	0
		SB		-		-	15	5	15	5	0	0
		EB		-		-	45	53	45	54	0	+1
		WB		-		-	41	57	38	51	-3	-6
2	W. Yosemite Ave. & West Project Dwy.	EBL	SSSC	50	SSSC	-	0	0	0	0	0	0
3	W. Yosemite Ave. & Central Project Dwy.	EBL	SSSC	50	SSSC	120	8	3	-	-	-	-
		WBL		50		-	0	0	-	-	-	-
4	W. Yosemite Ave. & East Project Dwy.	EBL	SSSC	50	SSSC	-	0	0	-	-	-	-
5	W. Yosemite Ave. & St. Dominics Dr.	NBL	Signal	50	Signal	50	29	34	48	32	+19	-2
		SBL		265		265	49	131	65	100	+16	-31
		SBR		265		265	5	24	0	0	-5	-24
		EBL		250		250	68	97	114	140	+46	+43
		WBL		170		170	12	31	18	30	+6	-1
6	W. Yosemite Ave. & Winters Dr.	NBR	Signal	80	Signal	80	61	52	61	52	0	0
		EBU		170		170	9	0	9	0	0	0
		WBL		95		95	**251**	**147**	**251**	**147**	0	0

Note:
- Queues exceeding available storage length by greater than 25 feet are shaded.
- Differences in queues greater than 25 feet due to Project-related traffic for queues exceeding available storage length by greater than 25 feet are shown in **red**.
- The City of Manteca plans to signalize W. Yosemite Avenue & St. Dominics Drive in the long-term with or without the Project.

7. MULTIMODAL EVALUATION

The Project was evaluated to determine if it would potentially conflict with adopted policies, plans, or programs supporting alternative transportation modes (e.g., bus turnouts, bicycle racks) or generate pedestrian, bicycle, or transit travel demand that would not be accommodated by existing transit, bicycle, or pedestrian facilities and plans.

Employees and visitors traveling to and from the Project would have the option of driving, taking transit, walking, or bicycling to and from the Project Site.

7.1 TRANSIT FACILITIES

Transit services that operate along W. Yosemite Avenue near the Project Site are provided by Manteca Transit. Route 1 (the "Red" route) operates in the westbound direction along W. Yosemite Avenue and stops at the W. Yosemite Avenue at St. Dominics Drive bus stop. Route 4 (the "Blue" route) approaches the study area northbound along Winters Drive and then proceeds westbound along W. Yosemite Avenue. Route 4 additionally stops at the W. Yosemite Avenue at St. Dominics Drive bus stop.

The Project proposes to construct a raised median along W. Yosemite Avenue from approximately St. Dominics Drive to approximately Fishback Road. As Route 1 and Route 4 do not perform turning movements along the segment of W. Yosemite Avenue with the planned raised median, the Project does not appear to conflict with existing transit circulation. The Project Site additionally does not include the existing W. Yosemite Avenue at St. Dominics Drive bus stop within its limits and therefore the Project is not expected to conflict with existing transit facilities.

7.2 BICYCLE FACILITIES

The Site Development Area plan in **Appendix A** shows a Class II bike lane would be implemented along the Project Site's frontage with W. Yosemite Avenue. The proposed raised median along W. Yosemite Avenue from approximately Fishback Road to St. Dominics Drive would not conflict with the planned Class II bike lane or with the existing bike facilities in the study area discussed in **Section 2.4**. Thus, the Project does not appear to conflict with existing or planned bike facilities, plans, programs, or policies.

7.3 PEDESTRIAN FACILITIES

The Site Development Area plan in **Appendix A** shows that the Project would preserve the existing concrete sidewalks on the north side of W. Yosemite Avenue abutting the Project Site. Additionally, concrete sidewalks are planned according to the Manteca Active Transportation Plan for implementation on both sides of W. Yosemite Avenue within the study area where concrete sidewalks do not already exist. The Project does not conflict with these planned improvements and therefore is not expected to conflict with applicable or adopted policies, plans, or programs.

8. PROJECT SITE EVALUATION

This section evaluates the off-street parking requirements and the proposed on-site vehicular circulation of the Project.

8.1 OFF-STREET PARKING

The off-street parking requirements of the Project were calculated using minimum parking rates from the *City of Manteca Municipal Code*. The results are shown in **Table 13**.

Table 13 – Project Off-Street Parking Requirements

Land Use	Size	Minimum Rate[1]	Parking Requirements[2]
Kaiser Manteca			
Emergency Department Expansion	27,450 KSF	1 space / 200 SF	137 spaces

Source: *City of Manteca Municipal Code*, Section 17.52.050, Table 17.52.050-1

Note: The minimum parking rate for General Medical Services was utilized.

1. The minimum parking rate for General Medical Services was utilized.
2. The calculated number of parking spaces was rounded in accordance with guidance from the City of Manteca Municipal Code.

The Project proposes 112 new parking spaces within the Site Development Area, which would be less than the City's minimum parking requirement of 137 parking spaces. However, the existing Kaiser Manteca inventory is 534 parking spaces. The addition of the parking within the Site Development Area would increase the total Kaiser Manteca parking inventory to 646 spaces. The City's minimum parking inventory for Kaiser Manteca with the Project would be 566 spaces. Kaiser Manteca with the Project would exceed the minimum required inventory by 80 spaces. Thus, the Project, combined with Kaiser Manteca, would be consistent with City of Manteca parking standards.

8.2 ON-SITE CIRCULATION

Vehicular circulation in the Site Development Area would occur in two parking areas: one to the west and one to the east of the new emergency department building, respectively. The western parking area would include bi-directional aisles that provide direct access to 36 planned parking spaces as well as ambulance parking areas and service bays directly west of the proposed emergency department building. The western parking area would be accessible by two bi-directional driveways along W. Yosemite Avenue. The western parking area would provide access to additional existing parking areas north of the Site Development Area.

The eastern parking area would additionally include bi-directional aisles that provide direct access to 76 planned parking spaces as well as canopy protected vehicular pull-up area for ambulances. The eastern parking area would be accessible by two bi-directional driveways: one located along W. Yosemite Avenue and the other located along St. Dominics Drive. The eastern parking area would additionally provide access to existing parking areas located north of the Site Development Area.

Vehicles that enter both parking areas from the planned driveways would have multiple bi-directional aisles to proceed through. A queuing analysis additionally revealed that no westbound right queues would occur at the Project driveways along W. Yosemite Avenue. Therefore, the Project's parking areas are not expected to result in queues of entering vehicles that would extend onto W. Yosemite Avenue or onto St. Dominics Drive.

The Site Development Area would accommodate pedestrians by including multiple paths that lead to the planned emergency department building and to Kaiser Manteca from existing concrete sidewalks along W. Yosemite Avenue and St. Dominics Drive. Additionally, the Project would provide ten short-term bicycle parking spaces to accommodate bike traffic. Therefore, the Project would accommodate bike and pedestrian modes consistent with General Plan Circulation Element policies.

The Project would thus neither lead to unsafe conditions nor would fail to accommodate vehicular, pedestrian, and bike modes.

9. IMPROVEMENTS AND RECOMMENDATIONS

This section discusses improvements and recommendations based on the results of intersection level of service, queueing, and signal warrant analyses.

9.1 INTERSECTION LEVEL OF SERVICE

Based on the results of the traffic analysis and evaluation of the proposed site plan, there would be no expected deficiencies due to Project-related traffic.

9.2 INTERSECTION QUEUING

Based on the results of the queueing analysis, there would no expected Project queueing deficiencies.

9.3 SIGNAL WARRANT

It is recommended that W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5) be signalized. Signalization at W. Yosemite Avenue & St. Dominics Drive (Study Intersection 5) is warranted without the addition of Project-related traffic. Therefore, it is a pre-existing deficiency and the Project should make its fair share contributions toward signalization.

The Project's fair share contribution for the signal was determined using two methods. The first was based on the percentage of plus Project traffic volumes that are attributed to Project trips. The second methodology utilized Caltrans' equitable share equation which determines the percentage of background growth that is attributed to the Project trips. These percentages are shown in **Table 14**.

During the a.m. peak hour, Project trips account for 1.1-1.3% of total intersection volume and 4.7-17.8% of future traffic for the intersection. During the p.m. peak hour, Project trips account for 0.4-0.5% of total intersection volume and 3.0-11.6% of future traffic for the intersection.

Table 14 – Fair Share Project Traffic – W. Yosemite Avenue / St. Dominics Drive #5

Scenario	Peak Hour	Existing Conditions	Future w/out Project	Future w/ Project	Project Trips	% Project	Equitable Share
Background Conditions	AM	1,239	1,412	1,340	18	1.3%	17.8%
	PM	1,708	1,934	1,777	8	0.5%	11.6%
Cumulative Conditions	AM	1,239	1,699	1,618	18	1.1%	4.7%
	PM	1,708	2,106	1,975	8	0.4%	3.0%

APPENDICES

Appendix A – Site Development Area ..... A

Appendix B – Intersection Turning Movement Counts ..... B

Appendix C – Existing Traffic Conditions Worksheets C

Appendix D – Background Traffic Conditions Worksheets ..... D

Appendix E – Background plus Project Traffic Conditions Worksheets ..... E

Appendix F – Cumulative Traffic Conditions Worksheets ..... F

Appendix G – Cumulative plus Project Traffic Conditions Worksheets ..... G

Appendix H – Yosemite Ave. & Fishback Rd. (Study Intersection 1) Roundabout Conceptual Plan ..... H

Appendix I – Yosemite Ave. & St. Dominics Dr. (Study Intersection 5) Signalization Conceptual Plan I

Appendix A – Site Development Area

PARKING SYMBOLS LEGEND

- EXISTING ACCESSIBLE SPACE
- NEW ACCESSIBLE SPACE
- EXISTING VAN ACCESSIBLE SPACE
- NEW VAN ACCESSIBLE SPACE
- EV CAPABLE SPACE
- PARKING SPACE WITH EV CHARGING EQUIPMENT (EVSE)
- PREFERRED PARKING- CLEAN AIR/ EV SPACE

SITE PLAN GRAPHIC LEGEND

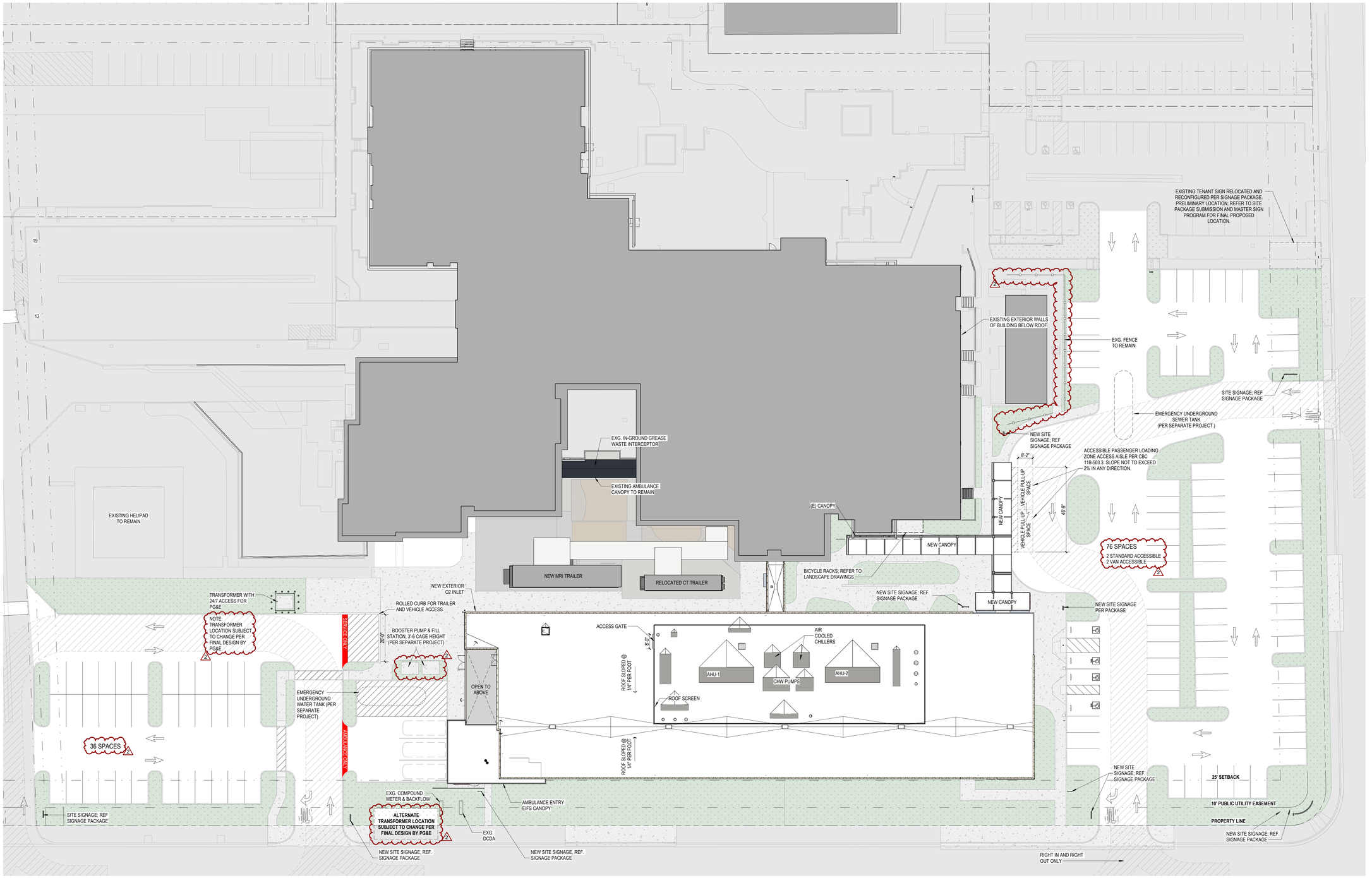
- NOT IN SCOPE
- NEW CONCRETE PAVING
- NEW LANDSCAPE AREA
- FIRE LANE - FIRE APPARATUS ACCESS ROADWAY, ASPHALT OR CONCRETE SURFACE TO COMPLY WITH CFC 503.2.3
- PARKING STRIPES
- DIRECTIONAL ARROWS
- STANDARD 9'x18' PARKING STALL
- ACCESSIBLE PARKING STALL
- EXISTING TREES, REFER TO LANDSCAPE DRAWINGS
- NEW TREES, REFER TO LANDSCAPE DRAWINGS
- EXISTING FIRE LANE
- NEW FIRE LANE
- PROPERTY LINE

SITE NOTES

NOTES:
ACCESSIBLE PATH OF TRAVEL TO COMPLY WITH CBC 11B-402. CLEAR WIDTH OF PATH SHALL BE 48" MIN. RUNNING SLOPE OF WALKING SURFACES SHALL NOT BE STEEPER THAN 1:20 AND THE CROSS SLOPE OF SURFACES SHALL NOT BE STEEPER THAN 1:48.

CURB/RAMP DETECTABLE WARNINGS AS REQUIRED BY CODE TO MAINTAIN A CONTINUOUS ACCESSIBLE PATH OF TRAVEL. DETECTABLE HAZARD WARNINGS (TRUNCATED DOMES) SHALL BE FEDERAL YELLOW FS 33538 STANDARD 595C.

FLAMMABLE OR COMBUSTICLE LIQUIDS AND WASTE OIL LOCATION AND AMOUNT TO BE IDENTIFIED ON FINAL SUBMITTAL CONTRACT DOCUMENTS FOR REVIEW (IF PROPOSED).



1 ENLARGED PROPOSED SITE PLAN
3/64" = 1'-0"

SLAM
The S/L/A/M Collaborative
2290 E. Maple Avenue
El Segundo, CA 90034
Phone: 310 559.4717
www.slamcoll.com

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Drawn: DV, MF
Checked: YP, DV
Agency Approval:

KAISER PERMANENTE®
National Facilities Services
Post Office Box 12916
Oakland, California 94604

CAP027912
MANTECA ED EXPANSION
1777 W YOSEMITE AVE.
MANTECA, CA 95337

ENTITLEMENTS

KEYPLAN

Number	Date	Issued For
2	05/19/2025	BACKCHECK #1
1	08/30/2024	FIRST SUBMISSION

ENLARGED PROPOSED SITE PLAN

Date: 05/08/2025
Drawing Number: ENT-A003
Scale: As indicated
Proj. Number: 22383.10

Autodesk Docs://22383.10 - Manteca ED Expansion/A_22383.10_Manteca EDx 11.02.13.Site_R24.rvt
5/19/2025 2:03:24 AM

Appendix B – Intersection Turning Movement Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fishback Rd & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(NB)

Project ID: 24-090136-007
Date: 11/14/2024

Data - Total

NS/EW Streets:	Fishback Rd				Fishback Rd				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	0	10	0	0	0	0	0	0	55	1	0	5	82	0	0	155
7:15 AM	1	0	3	0	0	0	0	0	0	63	2	0	3	96	0	0	168
7:30 AM	8	0	9	0	0	0	0	0	0	68	4	0	8	124	0	0	221
7:45 AM	8	0	9	0	0	0	0	0	0	119	9	0	5	120	0	0	270
8:00 AM	8	0	9	0	0	0	0	0	0	108	24	0	6	121	0	0	276
8:15 AM	18	0	13	0	0	0	0	0	0	155	37	0	9	127	0	0	359
8:30 AM	32	0	23	0	0	0	0	0	0	125	38	0	12	109	0	0	339
8:45 AM	6	0	5	0	0	0	0	0	0	123	2	0	5	114	0	0	255
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	83	0	81	0	0	0	0	0	0	816	117	0	53	893	0	0	2043
APPROACH %'s :	50.61%	0.00%	49.39%	0.00%					0.00%	87.46%	12.54%	0.00%	5.60%	94.40%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	66	0	54	0	0	0	0	0	0	507	108	0	32	477	0	0	1244
PEAK HR FACTOR :	0.516	0.000	0.587	0.000	0.000	0.000	0.000	0.000	0.000	0.818	0.711	0.000	0.667	0.939	0.000	0.000	0.866
	0.545								0.801				0.936				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	0	16	0	0	0	0	0	0	172	6	0	7	141	0	0	345
4:15 PM	6	0	21	0	0	0	0	0	0	195	4	0	17	137	0	0	380
4:30 PM	1	0	18	0	0	0	0	0	0	168	8	1	11	151	0	0	358
4:45 PM	6	0	14	0	0	0	0	0	0	171	8	0	14	185	0	0	398
5:00 PM	4	0	12	0	0	0	0	0	0	134	8	0	12	197	0	0	367
5:15 PM	4	0	20	0	0	0	0	0	0	150	10	0	12	188	0	0	384
5:30 PM	3	0	19	0	0	0	0	0	0	160	4	0	11	166	0	0	363
5:45 PM	4	0	13	0	0	0	0	0	0	156	11	0	15	131	0	0	330
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	31	0	133	0	0	0	0	0	0	1306	59	1	99	1296	0	0	2925
APPROACH %'s :	18.90%	0.00%	81.10%	0.00%					0.00%	95.61%	4.32%	0.07%	7.10%	92.90%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	17	0	65	0	0	0	0	0	0	615	30	0	49	736	0	0	1512
PEAK HR FACTOR :	0.708	0.000	0.813	0.000	0.000	0.000	0.000	0.000	0.000	0.899	0.750	0.000	0.875	0.934	0.000	0.000	0.950
	0.854								0.901				0.939				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fishback Rd & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(NB)

Project ID: 24-090136-007
Date: 11/14/2024

Data - Cars

NS/EW Streets:	Fishback Rd				Fishback Rd				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	10	0	0	0	0	0	0	53	1	0	5	80	0	0	150
7:15 AM	1	0	3	0	0	0	0	0	0	59	2	0	3	91	0	0	159
7:30 AM	8	0	9	0	0	0	0	0	0	67	4	0	8	116	0	0	212
7:45 AM	8	0	9	0	0	0	0	0	0	115	9	0	5	116	0	0	262
8:00 AM	8	0	9	0	0	0	0	0	0	103	24	0	6	114	0	0	264
8:15 AM	17	0	13	0	0	0	0	0	0	150	37	0	9	114	0	0	340
8:30 AM	32	0	23	0	0	0	0	0	0	117	38	0	12	99	0	0	321
8:45 AM	6	0	5	0	0	0	0	0	0	115	2	0	5	110	0	0	243
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	81	0	81	0	0	0	0	0	0	779	117	0	53	840	0	0	1951
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%					0.00%	86.94%	13.06%	0.00%	5.94%	94.06%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	65	0	54	0	0	0	0	0	0	485	108	0	32	443	0	0	1187
PEAK HR FACTOR :	0.508	0.000	0.587	0.000	0.000	0.000	0.000	0.000	0.000	0.808	0.711	0.000	0.667	0.955	0.000	0.000	0.873
	0.541								0.793				0.965				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	0	16	0	0	0	0	0	0	171	6	0	7	141	0	0	344
4:15 PM	6	0	21	0	0	0	0	0	0	193	4	0	17	135	0	0	376
4:30 PM	1	0	18	0	0	0	0	0	0	165	8	1	11	150	0	0	354
4:45 PM	6	0	14	0	0	0	0	0	0	170	8	0	14	183	0	0	395
5:00 PM	4	0	12	0	0	0	0	0	0	133	8	0	12	197	0	0	366
5:15 PM	4	0	20	0	0	0	0	0	0	149	10	0	12	186	0	0	381
5:30 PM	3	0	19	0	0	0	0	0	0	156	4	0	11	166	0	0	359
5:45 PM	4	0	13	0	0	0	0	0	0	154	11	0	15	128	0	0	325
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	31	0	133	0	0	0	0	0	0	1291	59	1	99	1286	0	0	2900
APPROACH %'s :	18.90%	0.00%	81.10%	0.00%					0.00%	95.56%	4.37%	0.07%	7.15%	92.85%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	17	0	65	0	0	0	0	0	0	608	30	0	49	732	0	0	1501
PEAK HR FACTOR :	0.708	0.000	0.813	0.000	0.000	0.000	0.000	0.000	0.000	0.894	0.750	0.000	0.875	0.929	0.000	0.000	0.950
	0.854								0.896				0.934				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fishback Rd & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(NB)

Project ID: 24-090136-007
Date: 11/14/2024

Data - HT

NS/EW Streets:	Fishback Rd				Fishback Rd				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	0	9
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	8	0	0	9
7:45 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8
8:00 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	7	0	0	12
8:15 AM	1	0	0	0	0	0	0	0	0	5	0	0	0	13	0	0	19
8:30 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	10	0	0	18
8:45 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	0	12
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	0	0	0	0	0	0	0	37	0	0	0	53	0	0	92
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	22	0	0	0	34	0	0	57
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688	0.000	0.000	0.000	0.654	0.000	0.000	0.750
	0.250								0.688				0.654				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	15	0	0	0	10	0	0	25
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	7	0	0	0	4	0	0	11
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.438	0.000	0.000	0.000	0.500	0.000	0.000	0.688
									0.438				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fishback Rd & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(NB)

Project ID: 24-090136-007
Date: 11/14/2024

Data - Bikes

NS/EW Streets:	Fishback Rd				Fishback Rd				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	0	1	0	0	0	10	0	0	12
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.400	0.000	0.000	0.400
														0.400			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	1	0	0	6
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	14	1	0	0	9	0	0	24
APPROACH %'s :									0.00%	93.33%	6.67%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	10	1	0	0	3	0	0	14
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.250	0.000	0.000	0.750	0.000	0.000	0.583
										0.550				0.750			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fishback Rd & W Yosemite Ave
City: Manteca

Project ID: 24-090136-007
Date: 11/14/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Fishback Rd		Fishback Rd		W Yosemite Ave		W Yosemite Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	1	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	2	0	0	0	0	0	2
APPROACH %'s :			100.00%	0.00%					
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	1
PEAK HR FACTOR :			0.250						0.250
			0.250						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	1
5:00 PM	0	0	1	1	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	2	1	0	0	0	0	3
APPROACH %'s :			66.67%	33.33%					
PEAK HR :	**04:45 PM - 05:45 PM**								TOTAL
PEAK HR VOL :	0	0	2	1	0	0	0	0	3
PEAK HR FACTOR :			0.500	0.250					0.375
			0.375						

Prepared by National Data & Surveying Services

Fishback Rd & W Yosemite Ave

Peak Hour Turning Movement Count

ID: 24-090136-007
City: Manteca

Day: Thursday
Date: 11/14/2024

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Fishback Rd)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (W Yosemite Ave)

AM	NOON	PM	
543	0	753	
0	0	0	0
0	0	0	0
507	0	615	2
108	0	30	0

WESTBOUND (W Yosemite Ave)

	PM	NOON	AM
0	0	0	0
2	736	0	477
0	49	0	32
0	0	0	0
	680	0	561

NORTHBOUND (Fishback Rd)

PM	79	0	17	0	65	PM
NOON	0	0	0	0	0	NOON
AM	140	0	66	0	54	AM

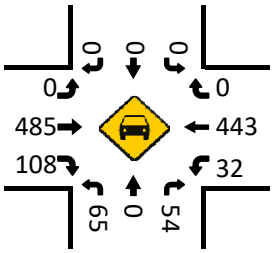
0	0	1	0

CONTROL

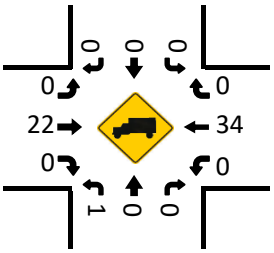
1-Way Stop(NB)

TEV	1244	0	1512
	AM	NOON	PM
PHF	0.87		0.95

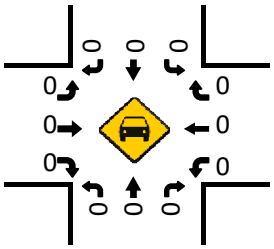
Cars (AM)



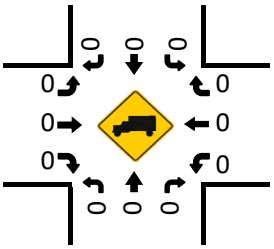
HT (AM)



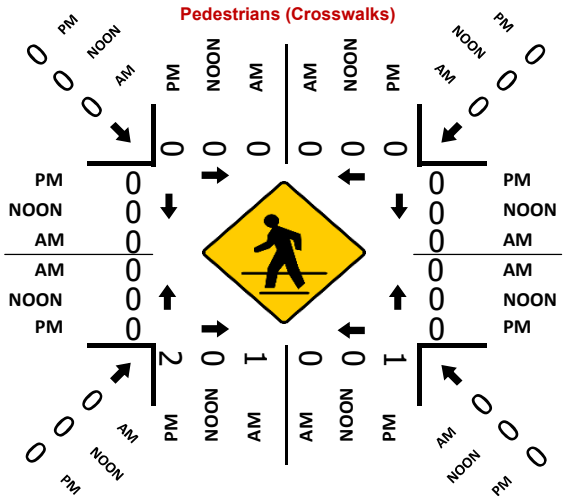
Cars (NOON)



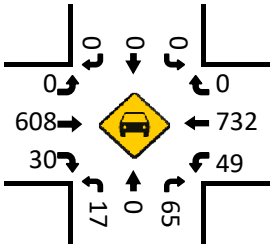
HT (NOON)



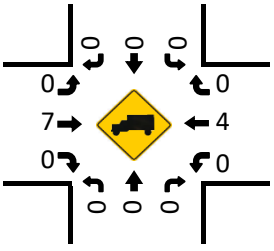
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente West Project Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-002
Date: 11/14/2024

Data - Total

NS/EW Streets:	Kaiser Permanente West Project Dwy				Kaiser Permanente West Project Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	1	0	1	0	8	60	0	0	0	86	6	0	162
7:15 AM	0	0	0	0	6	0	1	0	7	58	0	0	0	98	3	0	173
7:30 AM	0	0	0	0	5	0	12	0	5	71	0	0	0	120	3	0	216
7:45 AM	0	0	0	0	6	0	5	0	8	121	0	0	0	120	13	0	273
8:00 AM	0	0	0	0	4	0	5	0	12	105	0	0	0	122	14	0	262
8:15 AM	0	0	0	0	1	0	4	0	17	150	0	0	0	137	22	0	331
8:30 AM	0	0	0	0	3	0	6	0	15	132	0	0	0	110	10	0	276
8:45 AM	0	0	0	0	1	0	5	0	12	119	0	0	0	114	7	0	258
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	27	0	39	0	84	816	0	0	0	907	78	0	1951
APPROACH %'s :					40.91%	0.00%	59.09%	0.00%	9.33%	90.67%	0.00%	0.00%	0.00%	92.08%	7.92%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	14	0	20	0	52	508	0	0	0	489	59	0	1142
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.583	0.000	0.833	0.000	0.765	0.847	0.000	0.000	0.000	0.892	0.670	0.000	0.863
					0.773				0.838				0.862				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	5	0	4	0	2	187	0	0	0	144	2	0	344
4:15 PM	0	0	0	0	8	0	4	0	5	211	0	0	0	150	1	0	379
4:30 PM	0	0	0	0	11	0	10	0	2	182	0	0	0	152	5	0	362
4:45 PM	0	0	0	0	3	0	10	0	0	185	0	0	0	190	1	0	389
5:00 PM	0	0	0	0	14	0	23	0	0	147	0	0	0	185	1	0	370
5:15 PM	0	0	0	0	3	0	5	0	0	171	0	0	0	195	0	0	374
5:30 PM	0	0	0	0	4	0	9	0	0	175	0	1	0	167	0	0	356
5:45 PM	0	0	0	0	3	0	6	0	5	165	0	0	0	140	2	0	321
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	51	0	71	0	14	1423	0	1	0	1323	12	0	2895
APPROACH %'s :					41.80%	0.00%	58.20%	0.00%	0.97%	98.96%	0.00%	0.07%	0.00%	99.10%	0.90%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	36	0	47	0	7	725	0	0	0	677	8	0	1500
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.643	0.000	0.511	0.000	0.350	0.859	0.000	0.000	0.000	0.891	0.400	0.000	0.964
					0.561				0.847				0.897				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente West Project Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-002
Date: 11/14/2024

Data - Cars

NS/EW Streets:	Kaiser Permanente West Project Dwy				Kaiser Permanente West Project Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	1	0	1	0	8	58	0	0	0	84	6	0	158
7:15 AM	0	0	0	0	6	0	0	0	7	54	0	0	0	94	3	0	164
7:30 AM	0	0	0	0	5	0	8	0	5	70	0	0	0	116	3	0	207
7:45 AM	0	0	0	0	6	0	5	0	8	117	0	0	0	116	13	0	265
8:00 AM	0	0	0	0	4	0	4	0	10	102	0	0	0	116	13	0	249
8:15 AM	0	0	0	0	1	0	2	0	16	146	0	0	0	126	22	0	313
8:30 AM	0	0	0	0	3	0	2	0	14	125	0	0	0	104	10	0	258
8:45 AM	0	0	0	0	1	0	4	0	11	112	0	0	0	111	7	0	246
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	27	0	26	0	79	784	0	0	0	867	77	0	1860
APPROACH %'s :					50.94%	0.00%	49.06%	0.00%	9.15%	90.85%	0.00%	0.00%	0.00%	91.84%	8.16%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	14	0	13	0	48	490	0	0	0	462	58	0	1085
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.583	0.000	0.650	0.000	0.750	0.839	0.000	0.000	0.000	0.917	0.659	0.000	0.867
					0.614				0.830				0.878				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	5	0	4	0	2	186	0	0	0	144	2	0	343
4:15 PM	0	0	0	0	8	0	4	0	5	209	0	0	0	148	1	0	375
4:30 PM	0	0	0	0	11	0	10	0	2	179	0	0	0	151	5	0	358
4:45 PM	0	0	0	0	3	0	10	0	0	184	0	0	0	188	1	0	386
5:00 PM	0	0	0	0	14	0	23	0	0	146	0	0	0	185	1	0	369
5:15 PM	0	0	0	0	3	0	5	0	0	170	0	0	0	193	0	0	371
5:30 PM	0	0	0	0	4	0	9	0	0	171	0	1	0	167	0	0	352
5:45 PM	0	0	0	0	3	0	6	0	5	163	0	0	0	137	2	0	316
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	51	0	71	0	14	1408	0	1	0	1313	12	0	2870
APPROACH %'s :					41.80%	0.00%	58.20%	0.00%	0.98%	98.95%	0.00%	0.07%	0.00%	99.09%	0.91%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	36	0	47	0	7	718	0	0	0	672	8	0	1488
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.643	0.000	0.511	0.000	0.350	0.859	0.000	0.000	0.000	0.894	0.400	0.000	0.964
					0.561				0.847				0.899				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente West Project Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-002
Date: 11/14/2024

Data - HT

NS/EW Streets:	Kaiser Permanente West Project Dwy				Kaiser Permanente West Project Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
7:15 AM	0	0	0	0	0	0	1	0	0	4	0	0	0	4	0	0	9
7:30 AM	0	0	0	0	0	0	4	0	0	1	0	0	0	4	0	0	9
7:45 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8
8:00 AM	0	0	0	0	0	0	1	0	2	3	0	0	0	6	1	0	13
8:15 AM	0	0	0	0	0	0	2	0	1	4	0	0	0	11	0	0	18
8:30 AM	0	0	0	0	0	0	4	0	1	7	0	0	0	6	0	0	18
8:45 AM	0	0	0	0	0	0	1	0	1	7	0	0	0	3	0	0	12
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	13	0	5	32	0	0	0	40	1	0	91
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	13.51%	86.49%	0.00%	0.00%	0.00%	97.56%	2.44%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	7	0	4	18	0	0	0	27	1	0	57
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.438	0.000	0.500	0.643	0.000	0.000	0.000	0.614	0.250	0.000	0.792
							0.438				0.688				0.636		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	15	0	0	0	10	0	0	25
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0	0	12
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.000	0.000	0.625	0.000	0.000	0.750
											0.583				0.625		

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente West Project Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-002
Date: 11/14/2024

Data - Bikes

NS/EW Streets:	Kaiser Permanente West Project Dwy				Kaiser Permanente West Project Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	4	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	0	1	0	0	0	9	0	0	11
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	0	0	7	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.438	0.000	0.000	0.400
					0.250								0.438				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	14	0	0	0	9	0	0	23
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	7	0	0	0	4	0	0	11
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.438	0.000	0.000	0.000	0.500	0.000	0.000	0.688
									0.438				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente West Project Dwy & W Yosemite Ave **Project ID:** 24-090136-002
City: Manteca **Date:** 11/14/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Kaiser Permanente West Project Dwy		Kaiser Permanente West Project Dwy		W Yosemite Ave		W Yosemite Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	0	1
8:15 AM	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	1	0	0	0	0	0	0	3
APPROACH %'s :	66.67%	33.33%							
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	1	1	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.250	0.250							0.500
	0.500								

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	0	0	1
5:00 PM	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	2	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	2	0	0	0	0	0	0	5
APPROACH %'s :	60.00%	40.00%							
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.500								0.500
	0.500								

Prepared by National Data & Surveying Services

Kaiser Permanente West Project Dwy & W Yosemite Ave

Peak Hour Turning Movement Count

ID: 24-090136-002
City: Manteca

Day: Thursday
Date: 11/14/2024

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	7:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	4:00 PM - 06:00 PM

CONTROL: 1-Way Stop(SB)

	AM	NOON	PM
TEV	1142	0	1500
PHF	0.86		0.96

SOUTHBOUND — Kaiser Permanente West Project Dwy

	Left	Thru	Right	U-Turn	Total
AM	20	0	14	0	111
NOON	0	0	0	0	0
PM	47	0	36	0	15

EASTBOUND — W Yosemite Ave

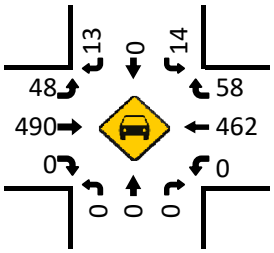
	Left	Thru	Right	U-Turn	Total
AM	509	0	724		
NOON	0	0	0	0	0
PM	52	0	7	0	0
AM	508	0	725	2	761
NOON	0	0	0	0	0
PM	0	0	0	0	0

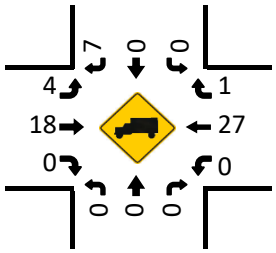
WESTBOUND — W Yosemite Ave

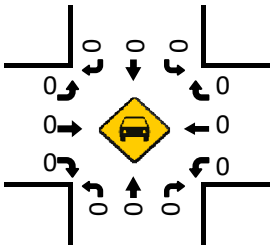
	Left	Thru	Right	U-Turn	Total
PM	8	0	59	0	0
NOON	677	0	489	2	522
AM	0	0	0	0	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

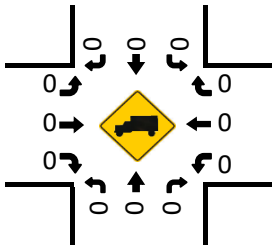
NORTHBOUND — Kaiser Permanente West Project Dwy

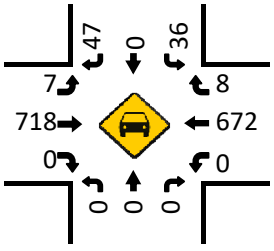
	Left	Thru	Right	U-Turn	Total
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

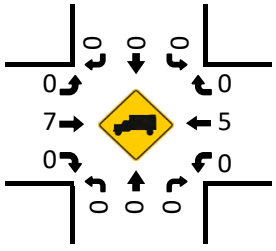


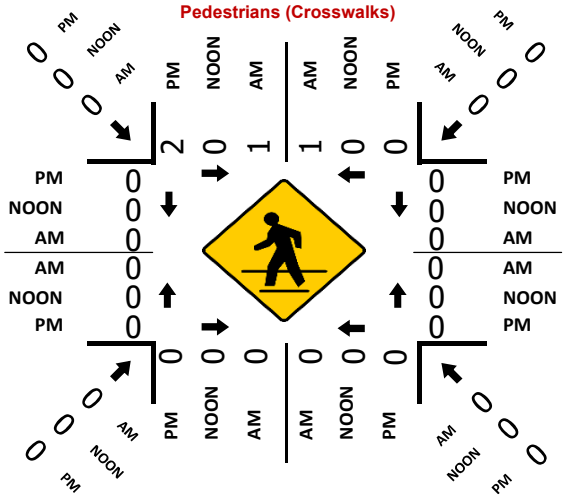












National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente Center Project Dwy/MasaLatina Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-003
Date: 11/14/2024

Data - Total

NS/EW Streets:	Kaiser Permanente Center Project Dwy/MasaLatina Dwy				Kaiser Permanente Center Project Dwy/MasaLatina Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	2	0	1	0	2	59	0	0	0	93	0	0	157
7:15 AM	0	0	0	0	3	0	3	0	2	63	0	0	0	98	0	1	170
7:30 AM	0	0	0	0	3	0	0	0	0	76	0	0	0	121	0	0	200
7:45 AM	0	0	0	0	1	0	0	0	2	125	0	0	0	133	1	0	262
8:00 AM	0	0	0	0	3	0	0	0	0	109	0	0	0	136	0	0	248
8:15 AM	0	0	0	0	0	0	1	0	4	147	0	0	0	158	0	0	310
8:30 AM	0	0	0	0	1	0	0	0	4	131	0	0	0	120	2	0	258
8:45 AM	0	0	0	0	2	0	0	0	4	115	0	0	0	121	4	0	246
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	15	0	5	0	18	825	0	0	0	980	7	1	1851
APPROACH %'s :					75.00%	0.00%	25.00%	0.00%	2.14%	97.86%	0.00%	0.00%	0.00%	99.19%	0.71%	0.10%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	5	0	1	0	10	512	0	0	0	547	3	0	1078
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.417	0.000	0.250	0.000	0.625	0.871	0.000	0.000	0.000	0.866	0.375	0.000	0.869
					0.500				0.864				0.870				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	1	0	3	0	6	0	4	185	0	0	0	141	2	0	342
4:15 PM	0	0	0	0	1	0	0	0	3	217	0	0	0	150	2	0	373
4:30 PM	0	0	0	0	2	0	3	0	3	188	0	0	0	156	2	0	354
4:45 PM	0	0	0	0	3	0	3	0	3	183	0	0	0	186	2	0	380
5:00 PM	0	0	0	0	5	0	0	0	0	162	0	0	0	188	1	0	356
5:15 PM	0	0	0	0	1	0	2	0	3	173	0	0	0	193	1	0	373
5:30 PM	0	0	0	0	4	0	2	0	0	176	0	0	0	171	0	0	353
5:45 PM	1	0	1	0	3	0	1	0	4	165	0	0	0	136	2	0	313
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	2	0	22	0	17	0	20	1449	0	0	0	1321	12	0	2844
APPROACH %'s :	33.33%	0.00%	66.67%	0.00%	56.41%	0.00%	43.59%	0.00%	1.36%	98.64%	0.00%	0.00%	0.00%	99.10%	0.90%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	11	0	8	0	9	706	0	0	0	723	6	0	1463
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.550	0.000	0.667	0.000	0.750	0.939	0.000	0.000	0.000	0.937	0.750	0.000	0.963
					0.792				0.936				0.939				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente Center Project Dwy/MasaLatina Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-003
Date: 11/14/2024

Data - Cars

NS/EW Streets:	Kaiser Permanente Center Project Dwy/MasaLatina Dwy				Kaiser Permanente Center Project Dwy/MasaLatina Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	1	0	1	0	2	56	0	0	0	91	0	0	151
7:15 AM	0	0	0	0	3	0	3	0	2	59	0	0	0	94	0	1	162
7:30 AM	0	0	0	0	3	0	0	0	0	75	0	0	0	117	0	0	195
7:45 AM	0	0	0	0	1	0	0	0	2	121	0	0	0	129	1	0	254
8:00 AM	0	0	0	0	2	0	0	0	0	106	0	0	0	129	0	0	237
8:15 AM	0	0	0	0	0	0	1	0	4	143	0	0	0	147	0	0	295
8:30 AM	0	0	0	0	1	0	0	0	4	124	0	0	0	114	2	0	245
8:45 AM	0	0	0	0	2	0	0	0	4	108	0	0	0	118	4	0	236
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	13	0	5	0	18	792	0	0	0	939	7	1	1775
APPROACH %'s :					72.22%	0.00%	27.78%	0.00%	2.22%	97.78%	0.00%	0.00%	0.00%	99.16%	0.74%	0.11%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	4	0	1	0	10	494	0	0	0	519	3	0	1031
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.500	0.000	0.250	0.000	0.625	0.864	0.000	0.000	0.000	0.883	0.375	0.000	0.874
					0.625				0.857				0.888				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	1	0	2	0	6	0	4	184	0	0	0	141	2	0	340
4:15 PM	0	0	0	0	1	0	0	0	3	215	0	0	0	148	2	0	369
4:30 PM	0	0	0	0	2	0	3	0	3	185	0	0	0	155	2	0	350
4:45 PM	0	0	0	0	3	0	3	0	3	182	0	0	0	184	2	0	377
5:00 PM	0	0	0	0	4	0	0	0	0	161	0	0	0	188	0	0	353
5:15 PM	0	0	0	0	1	0	2	0	3	172	0	0	0	191	1	0	370
5:30 PM	0	0	0	0	3	0	2	0	0	172	0	0	0	171	0	0	348
5:45 PM	1	0	1	0	3	0	1	0	4	163	0	0	0	133	2	0	308
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	2	0	19	0	17	0	20	1434	0	0	0	1311	11	0	2815
APPROACH %'s :	33.33%	0.00%	66.67%	0.00%	52.78%	0.00%	47.22%	0.00%	1.38%	98.62%	0.00%	0.00%	0.00%	99.17%	0.83%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	10	0	8	0	9	700	0	0	0	718	5	0	1450
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.625	0.000	0.667	0.000	0.750	0.946	0.000	0.000	0.000	0.940	0.625	0.000	0.962
					0.750				0.943				0.941				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente Center Project Dwy/MasaLatina Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-003
Date: 11/14/2024

Data - HT

NS/EW Streets: Kaiser Permanente Center Project Dwy/MasaLatina Dwy | Kaiser Permanente Center Project Dwy/MasaLatina Dwy | W Yosemite Ave | W Yosemite Ave

AM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	2	0	0	6
7:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8
8:00 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	7	0	0	11
8:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	11	0	0	15
8:30 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	6	0	0	13
8:45 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	3	0	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	0	0	0	0	33	0	0	0	41	0	0	76
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	18	0	0	0	28	0	0	47
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.643	0.000	0.000	0.000	0.636	0.000	0.000	0.783
					0.250				0.643				0.636				

PM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:00 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:30 PM	0	0	0	0	1	0	0	0	0	4	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	3	0	0	0	0	15	0	0	0	10	1	0	29
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	90.91%	9.09%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	6	0	0	0	5	1	0	13
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.625	0.250	0.000	0.813
					0.250				0.500				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente Center Project Dwy/MasaLatina Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-003
Date: 11/14/2024

Data - Bikes

NS/EW Streets:	Kaiser Permanente Center Project Dwy/MasaLatina Dwy				Kaiser Permanente Center Project Dwy/MasaLatina Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
8:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	1	0	0	1	0	0	0	9	0	0	12
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	0	0	0	0	0	7	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.438	0.000	0.000	0.500
	0.250												0.438				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	14	0	0	0	9	0	0	23
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	6	0	0	0	4	0	0	10
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.500	0.000	0.000	0.625
									0.375				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente Center Project Dwy/MasaLatina Dwy & W Yosem **Project ID:** 24-090136-003
City: Manteca **Date:** 11/14/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Kaiser Permanente Center Project Dwy/MasaLatina		Kaiser Permanente Center Project Dwy/MasaLatina		W Yosemite Ave		W Yosemite Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	2	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0	1
8:00 AM	0	0	1	0	0	0	0	0	1
8:15 AM	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	0	4	0	0	0	0	0	5
APPROACH %'s :	100.00%	0.00%	100.00%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	1	0	2	0	0	0	0	0	3
PEAK HR FACTOR :	0.250		0.500						0.750
	0.250		0.500						

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	3	0	0	0	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	1	0	0	0	0	0	2
5:00 PM	1	0	1	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	2	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	5	2	0	0	0	0	0	10
APPROACH %'s :	37.50%	62.50%	100.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	2	0	2	0	0	0	0	0	4
PEAK HR FACTOR :	0.500		0.500						0.500
	0.500		0.500						

Prepared by National Data & Surveying Services

Kaiser Permanente Center Project Dwy/MasaLatina Dwy & W Yosemite Ave

Peak Hour Turning Movement Count

ID: 24-090136-003
City: Manteca

Day: Thursday
Date: 11/14/2024

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

CONTROL: 1-Way Stop(SB)

	AM	NOON	PM
TEV	1078	0	1463
PHF	0.87		0.96

SOUTHBOUND — Kaiser Permanente Center Project Dwy/MasaLatina Dwy

	Left	Thru	Right	U-Turn	Total	
AM	1	0	5	0	13	AM
NOON	0	0	0	0	0	NOON
PM	8	0	11	0	15	PM
	0	1	0	0		

EASTBOUND — W Yosemite Ave

AM	NOON	PM	
548	0	731	
0	0	0	0
10	0	9	0
512	0	706	2
0	0	0	0
AM	NOON	PM	

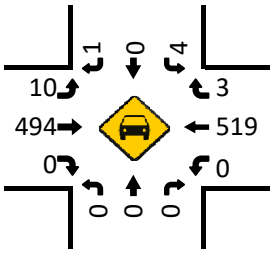
WESTBOUND — W Yosemite Ave

PM	NOON	AM	
6	0	3	0
723	0	547	2
0	0	0	0
0	0	0	0
717	0	517	
PM	NOON	AM	

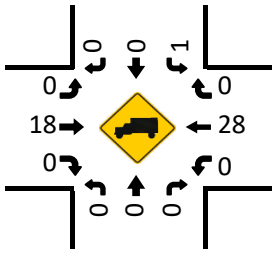
NORTHBOUND — Kaiser Permanente Center Project Dwy/MasaLatina Dwy

	Left	Thru	Right	U-Turn	Total	
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM
	0	0	1	0		

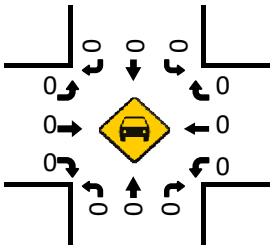
Cars (AM)



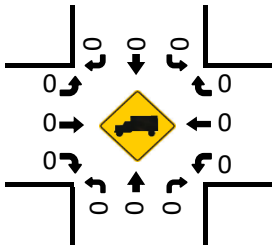
HT (AM)



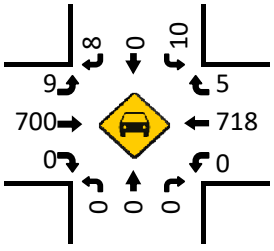
Cars (NOON)



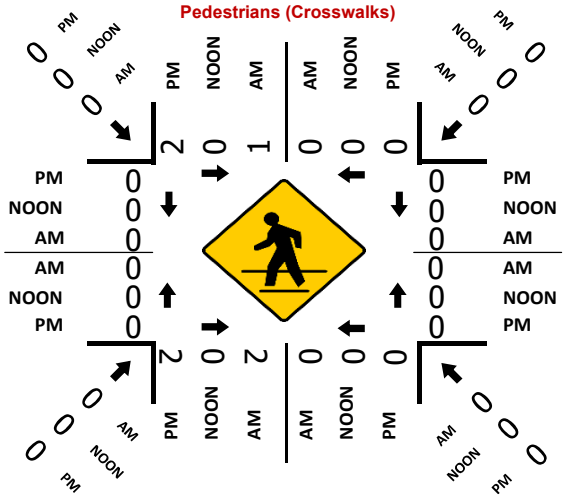
HT (NOON)



Cars (PM)



Pedestrians (Crosswalks)


PM
NOON
AM
0
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2
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National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente East Project Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-004
Date: 11/14/2024

Data - Total

NS/EW Streets:	Kaiser Permanente East Project Dwy				Kaiser Permanente East Project Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	1	0	1	0	4	59	0	0	0	90	5	0	160
7:15 AM	0	0	0	0	0	0	3	0	2	64	0	0	0	96	2	0	167
7:30 AM	0	0	0	0	0	0	0	0	1	79	0	0	0	122	0	0	202
7:45 AM	0	0	0	0	0	0	0	0	2	124	0	0	0	134	2	0	262
8:00 AM	0	0	0	0	0	0	1	0	0	112	0	0	0	134	3	0	250
8:15 AM	0	0	0	0	1	0	0	0	0	147	0	0	0	158	5	0	311
8:30 AM	0	0	0	0	0	0	1	0	0	132	0	0	0	121	3	0	257
8:45 AM	0	0	0	0	1	0	0	0	2	115	0	0	0	125	3	0	246
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	3	0	6	0	11	832	0	0	0	980	23	0	1855
APPROACH %'s :					33.33%	0.00%	66.67%	0.00%	1.30%	98.70%	0.00%	0.00%	0.00%	97.71%	2.29%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	2	0	2	515	0	0	0	547	13	0	1080
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.876	0.000	0.000	0.000	0.866	0.650	0.000	0.868
					0.750				0.879				0.859				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	2	0	0	0	1	187	0	0	0	143	4	0	337
4:15 PM	0	0	0	0	4	0	2	0	0	219	0	0	0	151	6	0	382
4:30 PM	0	0	0	0	0	0	1	0	2	188	0	0	0	156	2	0	349
4:45 PM	0	0	0	0	1	0	2	0	0	186	0	0	0	186	7	0	382
5:00 PM	0	0	0	0	1	0	4	0	1	164	0	0	0	186	3	0	359
5:15 PM	0	0	0	0	2	0	1	0	0	176	0	0	0	192	3	0	374
5:30 PM	0	0	0	0	2	0	0	0	0	180	0	0	0	171	1	0	354
5:45 PM	0	0	0	0	1	0	2	0	1	167	0	0	0	136	1	0	308
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	13	0	12	0	5	1467	0	0	0	1321	27	0	2845
APPROACH %'s :					52.00%	0.00%	48.00%	0.00%	0.34%	99.66%	0.00%	0.00%	0.00%	98.00%	2.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	6	0	9	0	3	757	0	0	0	679	18	0	1472
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.375	0.000	0.563	0.000	0.375	0.864	0.000	0.000	0.000	0.913	0.643	0.000	0.963
					0.625				0.868				0.903				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente East Project Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-004
Date: 11/14/2024

Data - Cars

NS/EW Streets:	Kaiser Permanente East Project Dwy				Kaiser Permanente East Project Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	1	0	1	0	4	55	0	0	0	88	5	0	154
7:15 AM	0	0	0	0	0	0	3	0	2	60	0	0	0	92	2	0	159
7:30 AM	0	0	0	0	0	0	0	0	1	78	0	0	0	118	0	0	197
7:45 AM	0	0	0	0	0	0	0	0	2	120	0	0	0	130	2	0	254
8:00 AM	0	0	0	0	0	0	1	0	0	108	0	0	0	127	2	0	238
8:15 AM	0	0	0	0	1	0	0	0	0	143	0	0	0	147	5	0	296
8:30 AM	0	0	0	0	0	0	1	0	0	125	0	0	0	115	3	0	244
8:45 AM	0	0	0	0	1	0	0	0	2	108	0	0	0	122	2	0	235
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	3	0	6	0	11	797	0	0	0	939	21	0	1777
APPROACH %'s :					33.33%	0.00%	66.67%	0.00%	1.36%	98.64%	0.00%	0.00%	0.00%	97.81%	2.19%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	2	0	2	496	0	0	0	519	12	0	1032
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.867	0.000	0.000	0.000	0.883	0.600	0.000	0.872
					0.750				0.871				0.873				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	2	0	0	0	1	185	0	0	0	143	3	0	334
4:15 PM	0	0	0	0	4	0	2	0	0	217	0	0	0	149	6	0	378
4:30 PM	0	0	0	0	0	0	1	0	2	185	0	0	0	155	2	0	345
4:45 PM	0	0	0	0	1	0	2	0	0	185	0	0	0	184	7	0	379
5:00 PM	0	0	0	0	1	0	4	0	1	162	0	0	0	185	2	0	355
5:15 PM	0	0	0	0	2	0	1	0	0	175	0	0	0	190	3	0	371
5:30 PM	0	0	0	0	2	0	0	0	0	175	0	0	0	171	1	0	349
5:45 PM	0	0	0	0	1	0	2	0	1	165	0	0	0	133	1	0	303
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	13	0	12	0	5	1449	0	0	0	1310	25	0	2814
APPROACH %'s :					52.00%	0.00%	48.00%	0.00%	0.34%	99.66%	0.00%	0.00%	0.00%	98.13%	1.87%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	6	0	9	0	3	749	0	0	0	673	17	0	1457
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.375	0.000	0.563	0.000	0.375	0.863	0.000	0.000	0.000	0.909	0.607	0.000	0.961
					0.625				0.866				0.903				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente East Project Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-004
Date: 11/14/2024

Data - HT

NS/EW Streets: Kaiser Permanente East Project Dwy | Kaiser Permanente East Project Dwy | W Yosemite Ave | W Yosemite Ave

AM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
7:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8
8:00 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	7	1	0	12
8:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	11	0	0	15
8:30 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	6	0	0	13
8:45 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	3	1	0	11
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	35	0	0	0	41	2	0	78
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	95.35%	4.65%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	19	0	0	0	28	1	0	48
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.679	0.000	0.000	0.000	0.636	0.250	0.000	0.800
										0.679				0.659			

PM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	18	0	0	0	11	2	0	31
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	84.62%	15.38%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	8	0	0	0	6	1	0	15
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.750	0.250	0.000	0.938
										0.667				0.875			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente East Project Dwy & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-004
Date: 11/14/2024

Data - Bikes

NS/EW Streets:	Kaiser Permanente East Project Dwy				Kaiser Permanente East Project Dwy				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	9	0	0	11
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	7	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.438	0.000	0.000	0.500
									0.250				0.438				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	1	13	0	0	0	9	0	0	23
APPROACH %'s :									7.14%	92.86%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	6	0	0	0	4	0	0	11
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.688
									0.438				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Kaiser Permanente East Project Dwy & W Yosemite Ave
City: Manteca
Project ID: 24-090136-004
Date: 11/14/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Kaiser Permanente East Project Dwy		Kaiser Permanente East Project Dwy		W Yosemite Ave		W Yosemite Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	0	1
8:15 AM	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	1	0	0	0	0	0	0	3
APPROACH %'s :	66.67%	33.33%							
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	1	1	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.250	0.250							0.500
	0.500								

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	3	0	0	0	0	0	0	4
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	0	0	1
5:00 PM	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	2	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	5	0	0	0	0	0	0	8
APPROACH %'s :	37.50%	62.50%							
PEAK HR :	**04:15 PM - 05:15 PM**								TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.500								0.500
	0.500								

Prepared by National Data & Surveying Services

Kaiser Permanente East Project Dwy & W Yosemite Ave

Peak Hour Turning Movement Count

ID: 24-090136-004
City: Manteca

Day: Thursday
Date: 11/14/2024

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	7:00 AM - 09:00 AM
NONE	NONE
04:15 PM - 05:15 PM	4:00 PM - 06:00 PM

CONTROL: 1-Way Stop(SB)

	AM	NOON	PM	
TEV	1080	0	1472	
PHF	0.87		0.96	

SOUTHBOUND (Kaiser Permanente East Project Dwy)

	Left	Thru	Right	U-Turn	
AM	2	0	1	0	15
NOON	0	0	0	0	0
PM	9	0	6	0	21

EASTBOUND (W Yosemite Ave)

	AM	NOON	PM
Left	0	0	0
Thru	549	0	688
Right	2	0	3
U-Turn	0	0	0
Total	551	0	691

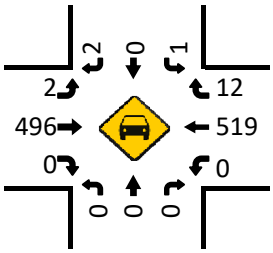
WESTBOUND (W Yosemite Ave)

	PM	NOON	AM
Left	0	0	0
Thru	679	0	547
Right	18	0	13
U-Turn	0	0	0
Total	697	0	560

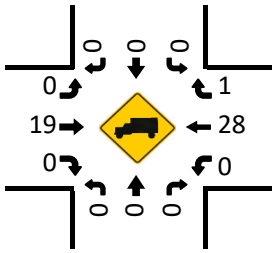
NORTHBOUND (Kaiser Permanente East Project Dwy)

	Left	Thru	Right	U-Turn	
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

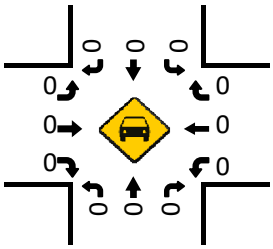
Cars (AM)



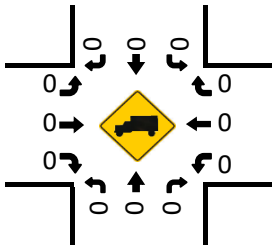
HT (AM)



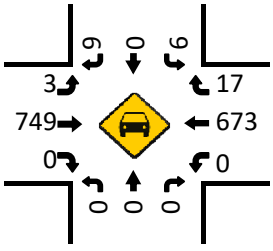
Cars (NOON)



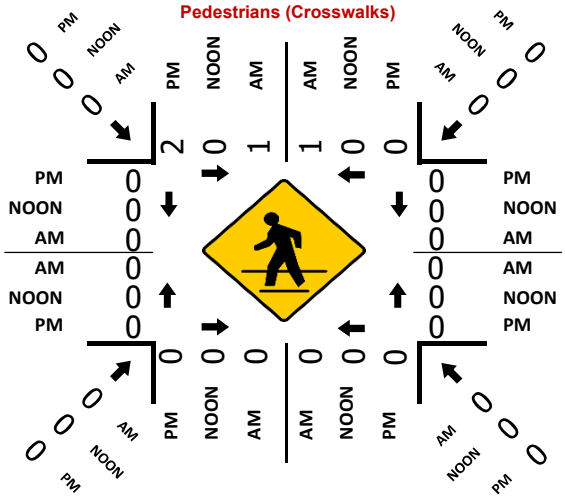
HT (NOON)



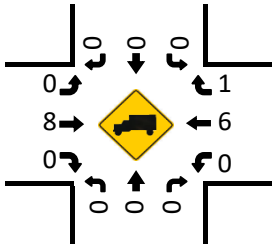
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: St Dominics Dr & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-005
Date: 11/14/2024

Data - Total

NS/EW Streets:	St Dominics Dr				St Dominics Dr				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	3	0	1	0	10	52	0	0	0	91	15	0	172
7:15 AM	0	0	0	0	5	0	7	0	16	48	0	0	0	91	18	0	185
7:30 AM	0	0	0	0	13	0	8	0	14	64	0	0	0	116	12	0	227
7:45 AM	0	0	0	0	9	0	7	0	18	107	0	0	0	135	32	0	308
8:00 AM	0	0	0	0	7	0	8	0	16	96	0	0	0	126	25	0	278
8:15 AM	0	0	0	0	8	0	9	0	26	120	0	0	0	157	32	0	352
8:30 AM	0	0	0	0	12	0	11	0	20	114	0	0	0	112	32	0	301
8:45 AM	0	0	0	0	15	0	16	0	24	91	0	0	0	105	28	0	279
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	72	0	67	0	144	692	0	0	0	933	194	0	2102
APPROACH %'s :					51.80%	0.00%	48.20%	0.00%	17.22%	82.78%	0.00%	0.00%	0.00%	82.79%	17.21%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	36	0	35	0	80	437	0	0	0	530	121	0	1239
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.750	0.000	0.795	0.000	0.769	0.910	0.000	0.000	0.000	0.844	0.945	0.000	0.880
					0.772				0.885				0.861				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	32	0	26	0	15	173	0	0	0	119	22	0	387
4:15 PM	0	0	0	0	24	0	22	0	24	197	0	0	0	135	18	0	420
4:30 PM	0	0	0	0	35	0	29	0	16	171	0	0	0	131	22	0	404
4:45 PM	0	0	0	0	30	0	38	0	10	175	0	0	0	157	16	0	426
5:00 PM	0	0	0	0	35	0	33	0	10	158	0	0	0	153	14	1	404
5:15 PM	0	0	0	0	23	0	22	0	11	170	0	0	0	174	11	0	411
5:30 PM	0	0	0	0	22	0	24	0	7	175	0	0	0	146	15	0	389
5:45 PM	0	0	0	0	22	0	13	0	12	156	0	0	0	125	9	0	337
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	223	0	207	0	105	1375	0	0	0	1140	127	1	3178
APPROACH %'s :					51.86%	0.00%	48.14%	0.00%	7.09%	92.91%	0.00%	0.00%	0.00%	89.91%	10.02%	0.08%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	124	0	122	0	60	701	0	0	0	576	70	1	1654
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.886	0.000	0.803	0.000	0.625	0.890	0.000	0.000	0.000	0.917	0.795	0.250	0.971
					0.904				0.861				0.935				

National Data & Surveying Services

Intersection Turning Movement Count

Location: St Dominics Dr & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-005
Date: 11/14/2024

Data - Cars

NS/EW Streets:	St Dominics Dr				St Dominics Dr				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	3	0	1	0	7	51	0	0	0	89	14	0	165
7:15 AM	0	0	0	0	5	0	6	0	15	45	0	0	0	88	17	0	176
7:30 AM	0	0	0	0	13	0	8	0	14	63	0	0	0	112	12	0	222
7:45 AM	0	0	0	0	9	0	7	0	18	103	0	0	0	131	31	0	299
8:00 AM	0	0	0	0	7	0	6	0	14	94	0	0	0	120	25	0	266
8:15 AM	0	0	0	0	8	0	9	0	25	117	0	0	0	146	31	0	336
8:30 AM	0	0	0	0	12	0	11	0	19	108	0	0	0	106	30	0	286
8:45 AM	0	0	0	0	13	0	16	0	23	86	0	0	0	101	28	0	267
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	70	0	64	0	135	667	0	0	0	893	188	0	2017
APPROACH %'s :					52.24%	0.00%	47.76%	0.00%	16.83%	83.17%	0.00%	0.00%	0.00%	82.61%	17.39%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	36	0	33	0	76	422	0	0	0	503	117	0	1187
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.750	0.000	0.750	0.000	0.760	0.902	0.000	0.000	0.000	0.861	0.944	0.000	0.883
					0.750				0.877				0.876				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	32	0	26	0	15	171	0	0	0	118	22	0	384
4:15 PM	0	0	0	0	24	0	22	0	24	195	0	0	0	133	18	0	416
4:30 PM	0	0	0	0	35	0	29	0	16	168	0	0	0	130	22	0	400
4:45 PM	0	0	0	0	30	0	38	0	10	174	0	0	0	155	16	0	423
5:00 PM	0	0	0	0	35	0	33	0	10	156	0	0	0	151	14	1	400
5:15 PM	0	0	0	0	23	0	22	0	11	169	0	0	0	172	11	0	408
5:30 PM	0	0	0	0	22	0	24	0	7	170	0	0	0	146	15	0	384
5:45 PM	0	0	0	0	22	0	13	0	12	154	0	0	0	122	9	0	332
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	223	0	207	0	105	1357	0	0	0	1127	127	1	3147
APPROACH %'s :					51.86%	0.00%	48.14%	0.00%	7.18%	92.82%	0.00%	0.00%	0.00%	89.80%	10.12%	0.08%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	124	0	122	0	60	693	0	0	0	569	70	1	1639
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.886	0.000	0.803	0.000	0.625	0.888	0.000	0.000	0.000	0.918	0.795	0.250	0.969
					0.904				0.860				0.936				

National Data & Surveying Services

Intersection Turning Movement Count

Location: St Dominics Dr & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-005
Date: 11/14/2024

Data - HT

NS/EW Streets: St Dominics Dr | St Dominics Dr | W Yosemite Ave | W Yosemite Ave

AM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	3	1	0	0	0	2	1	0	7
7:15 AM	0	0	0	0	0	0	1	0	1	3	0	0	0	3	1	0	9
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	1	0	9
8:00 AM	0	0	0	0	0	0	2	0	2	2	0	0	0	6	0	0	12
8:15 AM	0	0	0	0	0	0	0	0	1	3	0	0	0	11	1	0	16
8:30 AM	0	0	0	0	0	0	0	0	1	6	0	0	0	6	2	0	15
8:45 AM	0	0	0	0	2	0	0	0	1	5	0	0	0	4	0	0	12
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	0	3	0	9	25	0	0	0	40	6	0	85
APPROACH %'s :					40.00%	0.00%	60.00%	0.00%	26.47%	73.53%	0.00%	0.00%	0.00%	86.96%	13.04%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	2	0	4	15	0	0	0	27	4	0	52
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.625	0.000	0.000	0.000	0.614	0.500	0.000	0.813
					0.250				0.679				0.646				

PM

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	18	0	0	0	13	0	0	31
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	8	0	0	0	7	0	0	15
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.875	0.000	0.000	0.938
									0.667				0.875				

National Data & Surveying Services

Intersection Turning Movement Count

Location: St Dominics Dr & W Yosemite Ave
City: Manteca
Control: 1-Way Stop(SB)

Project ID: 24-090136-005
Date: 11/14/2024

Data - Bikes

NS/EW Streets:	St Dominics Dr				St Dominics Dr				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	9	1	0	12
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	90.00%	10.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	6	1	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.250	0.000	0.667
									0.250				0.583				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	13	0	0	0	9	0	0	23
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	6	0	0	0	4	0	0	11
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.688
					0.250				0.500				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: St Dominics Dr & W Yosemite Ave
City: Manteca

Project ID: 24-090136-005
Date: 11/14/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	St Dominics Dr		St Dominics Dr		W Yosemite Ave		W Yosemite Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	0	1
8:15 AM	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	1	0	0	0	0	0	0	3
APPROACH %'s :	66.67%	33.33%							
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	1	1	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.250	0.250							0.500
	0.500								

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	2	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	1	0	0	0	0	0	0	0	1
5:00 PM	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	2	0	0	0	0	0	0	2
5:45 PM	0	1	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	4	3	0	0	0	0	0	0	7
APPROACH %'s :	57.14%	42.86%							
PEAK HR :	**04:15 PM - 05:15 PM**								TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.500								0.500
	0.500								

Prepared by National Data & Surveying Services

St Dominics Dr & W Yosemite Ave

Peak Hour Turning Movement Count

ID: 24-090136-005
City: Manteca

Day: Thursday
Date: 11/14/2024

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:15 PM - 05:15 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (St Dominics Dr)

AM	35	0	36	0	201	AM
NOON	0	0	0	0	0	NOON
PM	122	0	124	0	130	PM
	0	1	0	0		

EASTBOUND (W Yosemite Ave)

AM	NOON	PM	
565	0	698	
0	0	0	0
80	0	60	0
437	0	701	2
0	0	0	0
AM	NOON	PM	

WESTBOUND (W Yosemite Ave)

PM	NOON	AM	
70	0	121	0
576	0	530	2
0	0	0	0
1	0	0	0
826	0	473	
PM	NOON	AM	

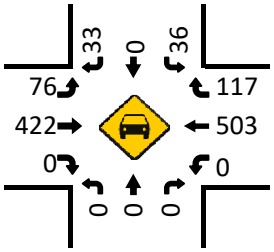
CONTROL: 1-Way Stop(SB)

	AM	NOON	PM
TEV	1239	0	1654
PHF	0.88		0.97

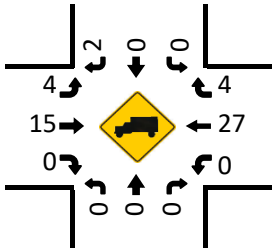
NORTHBOUND (St Dominics Dr)

	0	0	0	0		
PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

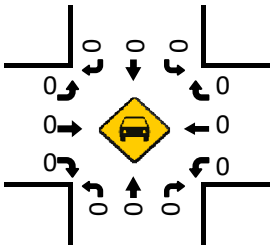
Cars (AM)



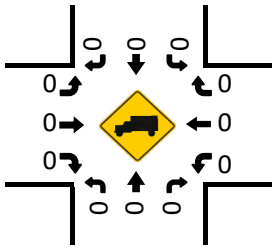
HT (AM)



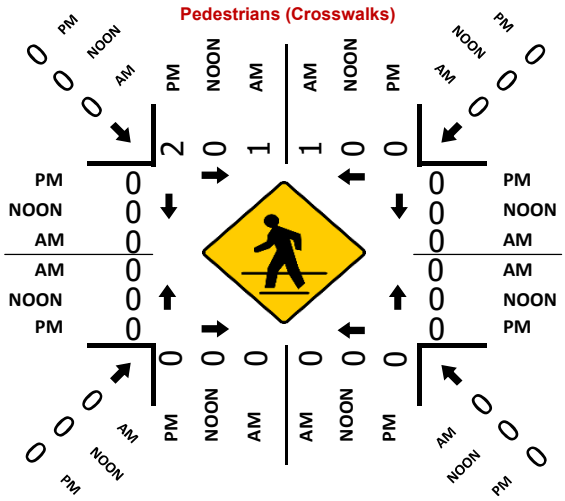
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
2
0
1
1
0
0
0
0
0
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0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Winters Dr & W Yosemite Ave
City: Manteca
Control: Signalized

Project ID: 24-090136-008
Date: 11/14/2024

Data - Total

NS/EW Streets:	Winters Dr				Winters Dr				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	10	0	18	0	0	0	0	0	0	49	2	0	9	99	0	0	187
7:15 AM	4	0	15	0	0	0	0	0	0	54	0	0	11	108	0	0	192
7:30 AM	15	0	24	0	0	0	0	0	0	60	10	0	28	117	0	0	254
7:45 AM	18	0	44	0	0	0	0	0	0	86	15	0	33	149	0	0	345
8:00 AM	14	0	49	0	0	0	0	0	0	82	11	0	50	147	0	0	353
8:15 AM	31	0	49	0	0	0	0	0	0	104	16	1	77	160	0	0	438
8:30 AM	33	0	75	0	0	0	0	0	0	100	15	1	59	112	0	0	395
8:45 AM	10	0	31	0	0	0	0	0	0	97	3	0	22	137	0	0	300
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	135	0	305	0	0	0	0	0	0	632	72	2	289	1029	0	0	2464
APPROACH %'s :	30.68%	0.00%	69.32%	0.00%					0.00%	89.52%	10.20%	0.28%	21.93%	78.07%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	96	0	217	0	0	0	0	0	0	372	57	2	219	568	0	0	1531
PEAK HR FACTOR :	0.727	0.000	0.723	0.000	0.000	0.000	0.000	0.000	0.000	0.894	0.891	0.500	0.711	0.888	0.000	0.000	0.874
	0.725								0.890				0.830				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	13	0	46	0	0	0	0	0	0	194	7	1	30	127	0	0	418
4:15 PM	12	0	39	0	0	0	0	0	0	204	14	1	22	140	0	0	432
4:30 PM	8	0	28	0	0	0	0	0	0	207	8	0	26	147	0	0	424
4:45 PM	11	0	38	0	0	0	0	0	0	193	13	0	15	147	0	1	418
5:00 PM	16	0	34	0	0	0	0	0	0	193	8	0	32	153	0	0	436
5:15 PM	11	0	35	0	0	0	0	0	0	181	11	0	33	174	0	1	446
5:30 PM	17	0	42	0	0	0	0	0	0	193	7	0	28	141	0	0	428
5:45 PM	6	0	28	0	0	0	0	0	0	176	7	0	24	128	0	2	371
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	94	0	290	0	0	0	0	0	0	1541	75	2	210	1157	0	4	3373
APPROACH %'s :	24.48%	0.00%	75.52%	0.00%					0.00%	95.24%	4.64%	0.12%	15.32%	84.39%	0.00%	0.29%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	55	0	149	0	0	0	0	0	0	760	39	0	108	615	0	2	1728
PEAK HR FACTOR :	0.809	0.000	0.887	0.000	0.000	0.000	0.000	0.000	0.000	0.984	0.750	0.000	0.818	0.884	0.000	0.500	0.969
	0.864								0.970				0.871				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Winters Dr & W Yosemite Ave
City: Manteca
Control: Signalized

Project ID: 24-090136-008
Date: 11/14/2024

Data - Cars

NS/EW Streets:	Winters Dr				Winters Dr				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	10	0	17	0	0	0	0	0	0	48	2	0	8	96	0	0	181
7:15 AM	3	0	13	0	0	0	0	0	0	51	0	0	11	105	0	0	183
7:30 AM	13	0	22	0	0	0	0	0	0	59	10	0	28	115	0	0	247
7:45 AM	18	0	43	0	0	0	0	0	0	84	13	0	33	144	0	0	335
8:00 AM	11	0	48	0	0	0	0	0	0	80	11	0	49	144	0	0	343
8:15 AM	25	0	48	0	0	0	0	0	0	102	16	1	77	154	0	0	423
8:30 AM	31	0	72	0	0	0	0	0	0	96	12	1	57	106	0	0	375
8:45 AM	9	0	29	0	0	0	0	0	0	91	3	0	21	134	0	0	287
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	120	0	292	0	0	0	0	0	0	611	67	2	284	998	0	0	2374
APPROACH %'s :	29.13%	0.00%	70.87%	0.00%					0.00%	89.85%	9.85%	0.29%	22.15%	77.85%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	85	0	211	0	0	0	0	0	0	362	52	2	216	548	0	0	1476
PEAK HR FACTOR :	0.685	0.000	0.733	0.000	0.000	0.000	0.000	0.000	0.000	0.887	0.813	0.500	0.701	0.890	0.000	0.000	0.872
	0.718								0.874				0.827				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	0	46	0	0	0	0	0	0	192	7	1	30	127	0	0	415
4:15 PM	11	0	39	0	0	0	0	0	0	202	14	1	21	139	0	0	427
4:30 PM	7	0	28	0	0	0	0	0	0	204	8	0	26	147	0	0	420
4:45 PM	11	0	37	0	0	0	0	0	0	192	13	0	14	145	0	1	413
5:00 PM	16	0	31	0	0	0	0	0	0	191	8	0	32	151	0	0	429
5:15 PM	10	0	35	0	0	0	0	0	0	180	11	0	33	173	0	1	443
5:30 PM	17	0	41	0	0	0	0	0	0	188	7	0	28	141	0	0	422
5:45 PM	6	0	27	0	0	0	0	0	0	174	7	0	24	125	0	2	365
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	90	0	284	0	0	0	0	0	0	1523	75	2	208	1148	0	4	3334
APPROACH %'s :	24.06%	0.00%	75.94%	0.00%					0.00%	95.19%	4.69%	0.13%	15.29%	84.41%	0.00%	0.29%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	54	0	144	0	0	0	0	0	0	751	39	0	107	610	0	2	1707
PEAK HR FACTOR :	0.794	0.000	0.878	0.000	0.000	0.000	0.000	0.000	0.000	0.978	0.750	0.000	0.811	0.882	0.000	0.500	0.963
	0.853								0.963				0.868				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Winters Dr & W Yosemite Ave
City: Manteca
Control: Signalized

Project ID: 24-090136-008
Date: 11/14/2024

Data - HT

NS/EW Streets:	Winters Dr				Winters Dr				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	1	0	0	0	0	0	0	1	0	0	1	3	0	0	6
7:15 AM	1	0	2	0	0	0	0	0	0	3	0	0	0	3	0	0	9
7:30 AM	2	0	2	0	0	0	0	0	0	1	0	0	0	2	0	0	7
7:45 AM	0	0	1	0	0	0	0	0	0	2	2	0	0	5	0	0	10
8:00 AM	3	0	1	0	0	0	0	0	0	2	0	0	1	3	0	0	10
8:15 AM	6	0	1	0	0	0	0	0	0	2	0	0	0	6	0	0	15
8:30 AM	2	0	3	0	0	0	0	0	0	4	3	0	2	6	0	0	20
8:45 AM	1	0	2	0	0	0	0	0	0	6	0	0	1	3	0	0	13
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	15	0	13	0	0	0	0	0	0	21	5	0	5	31	0	0	90
APPROACH %'s :	53.57%	0.00%	46.43%	0.00%					0.00%	80.77%	19.23%	0.00%	13.89%	86.11%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	11	0	6	0	0	0	0	0	0	10	5	0	3	20	0	0	55
PEAK HR FACTOR :	0.458	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.417	0.000	0.375	0.833	0.000	0.000	0.688
	0.607								0.536				0.719				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
4:15 PM	1	0	0	0	0	0	0	0	0	2	0	0	1	1	0	0	5
4:30 PM	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
4:45 PM	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0	0	5
5:00 PM	0	0	3	0	0	0	0	0	0	2	0	0	0	2	0	0	7
5:15 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3
5:30 PM	0	0	1	0	0	0	0	0	0	5	0	0	0	0	0	0	6
5:45 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	3	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	0	6	0	0	0	0	0	0	18	0	0	2	9	0	0	39
APPROACH %'s :	40.00%	0.00%	60.00%	0.00%					0.00%	100.00%	0.00%	0.00%	18.18%	81.82%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	1	0	5	0	0	0	0	0	0	9	0	0	1	5	0	0	21
PEAK HR FACTOR :	0.250	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.450	0.000	0.000	0.250	0.625	0.000	0.000	0.750
	0.500								0.450				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Winters Dr & W Yosemite Ave
City: Manteca
Control: Signalized

Project ID: 24-090136-008
Date: 11/14/2024

Data - Bikes

NS/EW Streets:	Winters Dr				Winters Dr				W Yosemite Ave				W Yosemite Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	4	1	0	0	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	0	2	0	0	7	10	0	0	20
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	41.18%	58.82%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	1	0	0	6	7	0	0	15
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.375	0.875	0.000	0.000	0.625
	0.250				0.000				0.250				0.650				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	4
4:15 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
5:00 PM	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	3	0	0	0	0	0	0	11	3	0	0	7	0	0	24
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	78.57%	21.43%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	0	8	2	0	0	2	0	0	13
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.500	0.000	0.000	0.813
	0.250				0.000				0.625				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Winters Dr & W Yosemite Ave
City: Manteca
Project ID: 24-090136-008
Date: 11/14/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Winters Dr		Winters Dr		W Yosemite Ave		W Yosemite Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	1	0	0	1	0	0	2
7:15 AM	0	0	1	0	0	1	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	1	1	0	4	7
8:15 AM	0	0	1	0	0	2	0	6	9
8:30 AM	0	0	0	0	0	1	0	0	1
8:45 AM	0	0	1	1	0	0	1	0	3
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	5	1	1	6	1	10	24
APPROACH %'s :			83.33%	16.67%	14.29%	85.71%	9.09%	90.91%	
PEAK HR :	**07:45 AM - 08:45 AM**								TOTAL
PEAK HR VOL :	0	0	2	0	1	4	0	10	17
PEAK HR FACTOR :			0.500		0.250	0.500		0.417	0.472
			0.500		0.625		0.417		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	3	1	4
4:15 PM	0	0	1	0	1	1	0	0	3
4:30 PM	0	0	0	0	1	0	0	0	1
4:45 PM	0	0	1	1	0	1	0	0	3
5:00 PM	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	1	0	0	1	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	4	1	2	3	3	1	14
APPROACH %'s :			80.00%	20.00%	40.00%	60.00%	75.00%	25.00%	
PEAK HR :	**04:45 PM - 05:45 PM**								TOTAL
PEAK HR VOL :	0	0	3	1	0	2	0	0	6
PEAK HR FACTOR :			0.750	0.250		0.500			0.500
			0.500		0.500				

Prepared by National Data & Surveying Services

Winters Dr & W Yosemite Ave

Peak Hour Turning Movement Count

ID: 24-090136-008
City: Manteca

Day: Thursday
Date: 11/14/2024

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	7:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SOUTHBOUND (Winters Dr)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM
	0	0	0	0		

EASTBOUND (W Yosemite Ave)

AM	NOON	PM	
666	0	670	
2	0	0	0
0	0	0	0
372	0	760	2
57	0	39	0
AM	NOON	PM	

WESTBOUND (W Yosemite Ave)

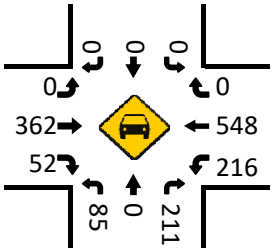
	PM	NOON	AM
0	0	0	0
2	615	0	568
1	108	0	219
0	2	0	0
	911	0	589
	PM	NOON	AM

CONTROL			
Signalized			
TEV	1531	0	1728
	AM	NOON	PM
PHF	0.87		0.97

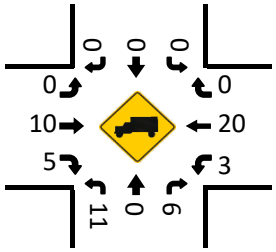
NORTHBOUND (Winters Dr)

PM	147	0	55	0	149	PM
NOON	0	0	0	0	0	NOON
AM	276	0	96	0	217	AM
		0	1	0	1	

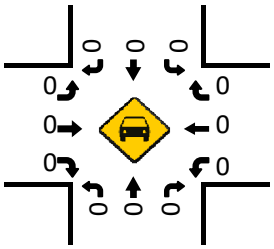
Cars (AM)



HT (AM)



Cars (NOON)



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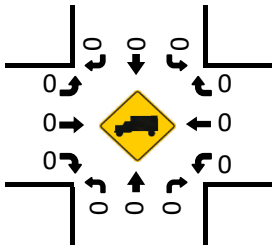

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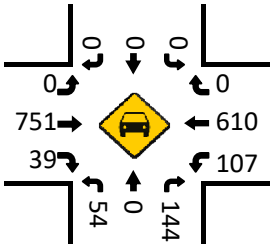
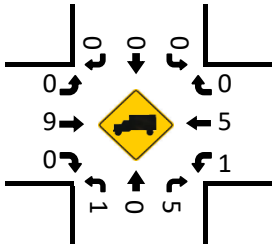
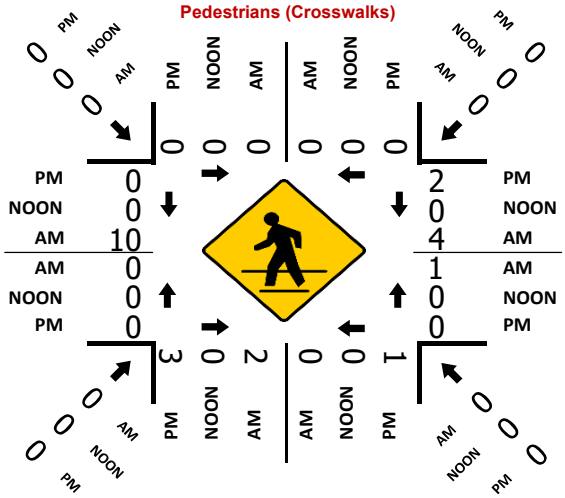


HT (PM)



Pedestrians (Crosswalks)



Appendix C – Existing Traffic Conditions Worksheets

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	507	108	32	481	66	54
Future Vol, veh/h	507	108	32	481	66	54
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	583	124	37	553	76	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	708	0	996	354
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	887	-	241	642
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	684	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	886	-	231	641
Mov Cap-2 Maneuver	-	-	-	-	355	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	656	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.58	16.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	445	-	-	886	-
HCM Lane V/C Ratio	0.31	-	-	0.042	-
HCM Control Delay (s/veh)	16.7	-	-	9.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	509	493	59	14	20
Future Vol, veh/h	52	509	493	59	14	20
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	592	573	69	16	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	644	0	-	0	1026	323
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	417	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	937	-	-	-	230	673
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	633	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	935	-	-	-	215	671
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	632	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.84	0	13.17
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	935	-	-	-	480
HCM Lane V/C Ratio	0.065	-	-	-	0.082
HCM Control Delay (s/veh)	9.1	-	-	-	13.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	513	0	0	551	3	0	0	0	5	0	1
Future Vol, veh/h	10	513	0	0	551	3	0	0	0	5	0	1
Conflicting Peds, #/hr	1	0	2	2	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	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	590	0	0	633	3	0	0	0	6	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	592	0	0	931	1252	297	954	1251	319
Stage 1	-	-	-	-	-	-	615	615	-	636	636	-
Stage 2	-	-	-	-	-	-	317	638	-	318	615	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	942	-	-	980	-	-	222	171	699	213	171	676
Stage 1	-	-	-	-	-	-	445	481	-	433	470	-
Stage 2	-	-	-	-	-	-	669	469	-	668	481	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	941	-	-	978	-	-	218	168	698	211	169	676
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	289	-	328	292	-
Stage 1	-	-	-	-	-	-	439	474	-	432	470	-
Stage 2	-	-	-	-	-	-	668	469	-	660	474	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.17	0	0	15.24
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	941	-	-	978	-	-	358
HCM Lane V/C Ratio	-	0.012	-	-	-	-	-	0.019
HCM Control Delay (s/veh)	0	8.9	-	-	0	-	-	15.2
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	516	552	13	1	2
Future Vol, veh/h	2	516	552	13	1	2
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	593	634	15	1	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	651	0	-	0	945	327
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	931	-	-	-	260	669
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	724	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	929	-	-	-	259	668
Mov Cap-2 Maneuver	-	-	-	-	374	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.03	0	11.85
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	929	-	-	-	529
HCM Lane V/C Ratio	0.002	-	-	-	0.007
HCM Control Delay (s/veh)	8.9	-	-	-	11.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	80	437	0	530	121	36	35
Future Vol, veh/h	80	437	0	530	121	36	35
Conflicting Peds, #/hr	2	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	50	-	170	-	-	0	-
Veh in Median Storage, #	-	0	-	0	-	1	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	91	497	0	602	138	41	40

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	742	0	497	-	0	1103	372
Stage 1	-	-	-	-	-	673	-
Stage 2	-	-	-	-	-	430	-
Critical Hdwy	4.14	-	6.44	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	2.52	-	-	3.52	3.32
Pot Cap-1 Maneuver	861	-	696	-	-	206	625
Stage 1	-	-	-	-	-	468	-
Stage 2	-	-	-	-	-	624	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	859	-	696	-	-	183	624
Mov Cap-2 Maneuver	-	-	-	-	-	307	-
Stage 1	-	-	-	-	-	418	-
Stage 2	-	-	-	-	-	622	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.5	0	15.94
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	859	-	696	-	-	410
HCM Lane V/C Ratio	0.106	-	-	-	-	0.197
HCM Control Delay (s/veh)	9.7	-	0	-	-	15.9
HCM Lane LOS	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	-	0	-	-	0.7

Lane Group	EBU	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2	494	252	653	110	249
v/c Ratio	0.01	0.44	0.51	0.29	0.28	0.47
Control Delay (s/veh)	40.0	21.5	28.8	7.4	28.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.0	21.5	28.8	7.4	28.8	7.3
Queue Length 50th (ft)	1	85	93	52	42	0
Queue Length 95th (ft)	9	163	205	144	98	52
Internal Link Dist (ft)		540		1203	667	
Turn Bay Length (ft)	170		95			80
Base Capacity (vph)	696	2047	696	2351	895	909
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.24	0.36	0.28	0.12	0.27

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	2	372	57	219	568	96	217
Future Volume (veh/h)	2	372	57	219	568	96	217
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)			0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		428	66	252	653	110	249
Peak Hour Factor		0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		990	152	375	2116	467	416
Arrive On Green		0.32	0.32	0.21	0.60	0.26	0.26
Sat Flow, veh/h		3171	471	1781	3647	1781	1585
Grp Volume(v), veh/h		246	248	252	653	110	249
Grp Sat Flow(s),veh/h/ln		1777	1772	1781	1777	1781	1585
Q Serve(g_s), s		6.9	7.0	8.2	5.8	3.1	8.7
Cycle Q Clear(g_c), s		6.9	7.0	8.2	5.8	3.1	8.7
Prop In Lane			0.27	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		572	570	375	2116	467	416
V/C Ratio(X)		0.43	0.44	0.67	0.31	0.24	0.60
Avail Cap(c_a), veh/h		1179	1176	788	2358	1013	901
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		16.9	16.9	23.0	6.3	18.4	20.4
Incr Delay (d2), s/veh		2.4	2.4	9.2	0.4	1.2	6.2
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		5.0	5.0	7.2	2.8	2.4	6.5
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		19.3	19.3	32.2	6.7	19.5	26.7
LnGrp LOS		B	B	C	A	B	C
Approach Vol, veh/h		494			905	359	
Approach Delay, s/veh		19.3			13.8	24.5	
Approach LOS		B			B	C	

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	42.7			17.3	25.4		20.6
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	7.8			10.2	9.0		10.7
Green Ext Time (p_c), s	16.1			3.3	11.3		5.9

Intersection Summary	
HCM 7th Control Delay, s/veh	17.5
HCM 7th LOS	B

Notes

User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	662	30	49	736	17	70
Future Vol, veh/h	662	30	49	736	17	70
Conflicting Peds, #/hr	0	3	3	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	697	32	52	775	18	74

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	731	0	1206	370
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	491	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	869	-	176	627
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	581	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	866	-	165	623
Mov Cap-2 Maneuver	-	-	-	-	298	-
Stage 1	-	-	-	-	444	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.59	13.52
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	514	-	-	866	-
HCM Lane V/C Ratio	0.178	-	-	0.06	-
HCM Control Delay (s/veh)	13.5	-	-	9.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	725	734	8	36	51
Future Vol, veh/h	7	725	734	8	36	51
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	755	765	8	38	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	775	0	-	0	1163	388
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	392	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	837	-	-	-	188	610
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	652	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	835	-	-	-	186	609
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.09	0	15.47
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	835	-	-	-	434
HCM Lane V/C Ratio	0.009	-	-	-	0.209
HCM Control Delay (s/veh)	9.3	-	-	-	15.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	751	0	0	734	6	0	0	0	11	0	8
Future Vol, veh/h	10	751	0	0	734	6	0	0	0	11	0	8
Conflicting Peds, #/hr	2	0	2	2	0	2	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	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	782	0	0	765	6	0	0	0	11	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	773	0	0	784	0	0	1187	1578	393	1182	1575	387
Stage 1	-	-	-	-	-	-	805	805	-	770	770	-
Stage 2	-	-	-	-	-	-	382	773	-	412	805	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	838	-	-	830	-	-	144	108	606	145	109	611
Stage 1	-	-	-	-	-	-	342	393	-	360	408	-
Stage 2	-	-	-	-	-	-	612	407	-	588	393	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	837	-	-	828	-	-	140	107	605	143	107	610
Mov Cap-2 Maneuver	-	-	-	-	-	-	253	227	-	262	230	-
Stage 1	-	-	-	-	-	-	337	388	-	359	408	-
Stage 2	-	-	-	-	-	-	604	406	-	581	388	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.12	0	0	16.06
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	837	-	-	828	-	-	345
HCM Lane V/C Ratio	-	0.012	-	-	-	-	-	0.057
HCM Control Delay (s/veh)	0	9.4	-	-	0	-	-	16.1
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	759	730	18	6	10
Future Vol, veh/h	3	759	730	18	6	10
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	791	760	19	6	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	781	0	-	0	1173	392
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	832	-	-	-	185	607
Stage 1	-	-	-	-	417	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	831	-	-	-	184	606
Mov Cap-2 Maneuver	-	-	-	-	308	-
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	643	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.04	0	13.41
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	831	-	-	-	445
HCM Lane V/C Ratio	0.004	-	-	-	0.037
HCM Control Delay (s/veh)	9.4	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	61	704	1	617	70	124	131
Future Vol, veh/h	61	704	1	617	70	124	131
Conflicting Peds, #/hr	2	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	50	-	170	-	-	0	-
Veh in Median Storage, #	-	0	-	0	-	1	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	63	726	1	636	72	128	135

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	710	0	726	-	0	1165	356
Stage 1	-	-	-	-	-	676	-
Stage 2	-	-	-	-	-	489	-
Critical Hdwy	4.14	-	6.44	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	2.52	-	-	3.52	3.32
Pot Cap-1 Maneuver	885	-	497	-	-	187	640
Stage 1	-	-	-	-	-	467	-
Stage 2	-	-	-	-	-	582	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	883	-	497	-	-	173	639
Mov Cap-2 Maneuver	-	-	-	-	-	302	-
Stage 1	-	-	-	-	-	433	-
Stage 2	-	-	-	-	-	580	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.75	0.02	27.55
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	883	-	497	-	-	415
HCM Lane V/C Ratio	0.071	-	0.002	-	-	0.634
HCM Control Delay (s/veh)	9.4	-	12.3	-	-	27.6
HCM Lane LOS	A	-	B	-	-	D
HCM 95th %tile Q(veh)	0.2	-	0	-	-	4.2

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	824	113	634	57	154
v/c Ratio	0.49	0.30	0.26	0.16	0.36
Control Delay (s/veh)	16.6	32.9	5.2	30.5	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.6	32.9	5.2	30.5	8.2
Queue Length 50th (ft)	137	48	44	24	0
Queue Length 95th (ft)	269	114	108	61	48
Internal Link Dist (ft)	540		1203	666	
Turn Bay Length (ft)		95			80
Base Capacity (vph)	2103	707	2672	909	876
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.39	0.16	0.24	0.06	0.18

Intersection Summary

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations								
Traffic Volume (veh/h)	0	760	39	110	615	55	149	
Future Volume (veh/h)	0	760	39	110	615	55	149	
Initial Q (Qb), veh		0	0	0	0	0	0	
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00	
Ped-Bike Adj(A_pbT)			0.97	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No			No	No		
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h		784	40	113	634	57	154	
Peak Hour Factor		0.97	0.97	0.97	0.97	0.97	0.97	
Percent Heavy Veh, %		2	2	2	2	2	2	
Cap, veh/h		1725	88	178	2383	313	279	
Arrive On Green		0.50	0.50	0.10	0.67	0.18	0.18	
Sat Flow, veh/h		3528	175	1781	3647	1781	1585	
Grp Volume(v), veh/h		406	418	113	634	57	154	
Grp Sat Flow(s),veh/h/ln		1777	1832	1781	1777	1781	1585	
Q Serve(g_s), s		8.6	8.6	3.6	4.2	1.6	5.2	
Cycle Q Clear(g_c), s		8.6	8.6	3.6	4.2	1.6	5.2	
Prop In Lane			0.10	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		893	921	178	2383	313	279	
V/C Ratio(X)		0.45	0.45	0.63	0.27	0.18	0.55	
Avail Cap(c_a), veh/h		1274	1314	851	2547	1094	974	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh		9.4	9.4	25.3	3.9	20.6	22.0	
Incr Delay (d2), s/veh		1.7	1.6	16.0	0.3	1.3	7.7	
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln		5.0	5.2	3.8	1.4	1.3	4.2	
Unsig. Movement Delay, s/veh								
LnGrp Delay(d), s/veh		11.1	11.0	41.4	4.1	21.8	29.7	
LnGrp LOS		B	B	D	A	C	C	
Approach Vol, veh/h		824			747	211		
Approach Delay, s/veh		11.0			9.8	27.6		
Approach LOS		B			A	C		

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	44.3			9.9	34.4		14.3
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	6.2			5.6	10.6		7.2
Green Ext Time (p_c), s	16.0			1.4	18.8		3.4

Intersection Summary		
HCM 7th Control Delay, s/veh	12.5	
HCM 7th LOS	B	

Notes
User approved ignoring U-Turning movement.

Appendix D – Background Traffic Conditions Worksheets

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	561	108	15	32	579	66	54
Future Vol, veh/h	561	108	15	32	579	66	54
Conflicting Peds, #/hr	0	1	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	-	0	1	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	87	87	92	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	645	124	16	37	666	76	62

Major/Minor	Major1		Major2			Minor1	
Conflicting Flow All	0	0	769	770	0	1147	385
Stage 1	-	-	-	-	-	708	-
Stage 2	-	-	-	-	-	439	-
Critical Hdwy	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	467	840	-	192	613
Stage 1	-	-	-	-	-	449	-
Stage 2	-	-	-	-	-	617	-
Platoon blocked, %	-	-			-		
Mov Cap-1 Maneuver	-	-	642	642	-	176	612
Mov Cap-2 Maneuver	-	-	-	-	-	307	-
Stage 1	-	-	-	-	-	449	-
Stage 2	-	-	-	-	-	566	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.82	18.86
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	396	-	-	642	-
HCM Lane V/C Ratio	0.348	-	-	0.083	-
HCM Control Delay (s/veh)	18.9	-	-	11.1	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	629	600	43	0	22
Future Vol, veh/h	0	629	600	43	0	22
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	731	698	50	0	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	750	0	-	0	1090	376
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	366	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	855	-	-	-	209	622
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	672	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	854	-	-	-	209	621
Mov Cap-2 Maneuver	-	-	-	-	331	-
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	671	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.05
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	854	-	-	-	621
HCM Lane V/C Ratio	-	-	-	-	0.041
HCM Control Delay (s/veh)	0	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	568	0	0	658	2	0	0	0	0	0	5
Future Vol, veh/h	62	568	0	0	658	2	0	0	0	0	0	5
Conflicting Peds, #/hr	1	0	2	2	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	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	653	0	0	756	2	0	0	0	0	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	760	0	0	655	0	0	1176	1557	328	1227	1556	380
Stage 1	-	-	-	-	-	-	797	797	-	758	758	-
Stage 2	-	-	-	-	-	-	378	760	-	469	797	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	848	-	-	928	-	-	147	112	667	134	112	618
Stage 1	-	-	-	-	-	-	346	397	-	365	413	-
Stage 2	-	-	-	-	-	-	615	413	-	544	397	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	847	-	-	926	-	-	133	102	666	123	102	617
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	207	-	246	223	-
Stage 1	-	-	-	-	-	-	316	362	-	365	413	-
Stage 2	-	-	-	-	-	-	610	412	-	498	362	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.95	0	0	10.89
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	847	-	-	926	-	-	617
HCM Lane V/C Ratio	-	0.084	-	-	-	-	-	0.009
HCM Control Delay (s/veh)	0	9.6	-	-	0	-	-	10.9
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	568	641	13	0	3
Future Vol, veh/h	0	568	641	13	0	3
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	653	737	15	0	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	754	0	-	0	1073	378
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	852	-	-	-	215	620
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	851	-	-	-	214	619
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	10.85
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	851	-	-	-	619
HCM Lane V/C Ratio	-	-	-	-	0.006
HCM Control Delay (s/veh)	0	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	99	469	0	580	88	26	43
Future Vol, veh/h	99	469	0	580	88	26	43
Conflicting Peds, #/hr	2	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	50	-	170	-	-	0	-
Veh in Median Storage, #	-	0	-	0	-	1	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	113	533	0	659	100	30	49

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	761	0	533	-	0	1203	382
Stage 1	-	-	-	-	-	711	-
Stage 2	-	-	-	-	-	491	-
Critical Hdwy	4.14	-	6.44	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	2.52	-	-	3.52	3.32
Pot Cap-1 Maneuver	847	-	660	-	-	177	616
Stage 1	-	-	-	-	-	448	-
Stage 2	-	-	-	-	-	580	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	845	-	660	-	-	153	615
Mov Cap-2 Maneuver	-	-	-	-	-	278	-
Stage 1	-	-	-	-	-	387	-
Stage 2	-	-	-	-	-	579	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.73	0	15.47
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	845	-	660	-	-	422
HCM Lane V/C Ratio	0.133	-	-	-	-	0.186
HCM Control Delay (s/veh)	9.9	-	0	-	-	15.5
HCM Lane LOS	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	-	0	-	-	0.7



Lane Group	EBU	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2	519	252	672	110	249
v/c Ratio	0.01	0.45	0.52	0.30	0.29	0.47
Control Delay (s/veh)	41.0	21.6	29.4	7.3	29.5	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.0	21.6	29.4	7.3	29.5	7.4
Queue Length 50th (ft)	1	91	95	54	42	0
Queue Length 95th (ft)	9	172	209	148	100	53
Internal Link Dist (ft)		540		1203	667	
Turn Bay Length (ft)	170		95			80
Base Capacity (vph)	685	2015	685	2347	881	898
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.26	0.37	0.29	0.12	0.28

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	2	394	57	219	585	96	217
Future Volume (veh/h)	2	394	57	219	585	96	217
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)			0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		453	66	252	672	110	249
Peak Hour Factor		0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		1025	148	372	2136	463	412
Arrive On Green		0.33	0.33	0.21	0.60	0.26	0.26
Sat Flow, veh/h		3197	449	1781	3647	1781	1585
Grp Volume(v), veh/h		258	261	252	672	110	249
Grp Sat Flow(s),veh/h/ln		1777	1776	1781	1777	1781	1585
Q Serve(g_s), s		7.4	7.5	8.4	6.0	3.2	8.9
Cycle Q Clear(g_c), s		7.4	7.5	8.4	6.0	3.2	8.9
Prop In Lane			0.25	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		587	587	372	2136	463	412
V/C Ratio(X)		0.44	0.44	0.68	0.31	0.24	0.60
Avail Cap(c_a), veh/h		1154	1153	771	2308	991	882
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		17.0	17.0	23.6	6.3	18.9	21.0
Incr Delay (d2), s/veh		2.4	2.4	9.5	0.4	1.2	6.5
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		5.3	5.4	7.4	2.9	2.4	6.7
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		19.4	19.4	33.1	6.7	20.1	27.5
LnGrp LOS		B	B	C	A	C	C
Approach Vol, veh/h		519			924	359	
Approach Delay, s/veh		19.4			13.9	25.2	
Approach LOS		B			B	C	

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	43.9			17.5	26.4		20.8
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	8.0			10.4	9.5		10.9
Green Ext Time (p_c), s	16.6			3.2	11.9		5.9

Intersection Summary	
HCM 7th Control Delay, s/veh	17.7
HCM 7th LOS	B

Notes

User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	792	30	40	49	754	17	70
Future Vol, veh/h	792	30	40	49	754	17	70
Conflicting Peds, #/hr	0	3	0	3	0	0	3
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	-	0	1	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	95	95	92	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	834	32	43	52	794	18	74

Major/Minor	Major1		Major2			Minor1	
Conflicting Flow All	0	0	865	868	0	1439	439
Stage 1	-	-	-	-	-	852	-
Stage 2	-	-	-	-	-	587	-
Critical Hdwy	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	405	772	-	124	566
Stage 1	-	-	-	-	-	378	-
Stage 2	-	-	-	-	-	519	-
Platoon blocked, %	-	-			-		
Mov Cap-1 Maneuver	-	-	499	499	-	100	563
Mov Cap-2 Maneuver	-	-	-	-	-	227	-
Stage 1	-	-	-	-	-	377	-
Stage 2	-	-	-	-	-	420	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.49	15.43
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	436	-	-	499	-
HCM Lane V/C Ratio	0.21	-	-	0.191	-
HCM Control Delay (s/veh)	15.4	-	-	13.9	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.7	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	908	791	6	0	57
Future Vol, veh/h	0	908	791	6	0	57
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	946	824	6	0	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	832	0	-	0	1302	417
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	473	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	796	-	-	-	152	585
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	593	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	795	-	-	-	152	583
Mov Cap-2 Maneuver	-	-	-	-	279	-
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	592	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.87
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	795	-	-	-	583
HCM Lane V/C Ratio	-	-	-	-	0.102
HCM Control Delay (s/veh)	0	-	-	-	11.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	891	0	0	780	4	0	0	0	0	0	16
Future Vol, veh/h	17	891	0	0	780	4	0	0	0	0	0	16
Conflicting Peds, #/hr	2	0	2	2	0	2	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	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	928	0	0	813	4	0	0	0	0	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	819	0	0	930	0	0	1372	1784	466	1316	1782	410
Stage 1	-	-	-	-	-	-	966	966	-	817	817	-
Stage 2	-	-	-	-	-	-	406	819	-	499	966	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	806	-	-	731	-	-	105	81	543	115	81	590
Stage 1	-	-	-	-	-	-	274	331	-	337	389	-
Stage 2	-	-	-	-	-	-	592	388	-	522	331	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	804	-	-	730	-	-	100	79	542	113	79	589
Mov Cap-2 Maneuver	-	-	-	-	-	-	203	193	-	233	197	-
Stage 1	-	-	-	-	-	-	267	323	-	336	388	-
Stage 2	-	-	-	-	-	-	576	387	-	510	323	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.18	0	0	11.29
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	804	-	-	730	-	-	589
HCM Lane V/C Ratio	-	0.022	-	-	-	-	-	0.028
HCM Control Delay (s/veh)	0	9.6	-	-	0	-	-	11.3
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	891	766	18	0	16
Future Vol, veh/h	0	891	766	18	0	16
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	928	798	19	0	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	819	0	-	0	1273	410
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	464	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	806	-	-	-	159	590
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	599	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	804	-	-	-	159	589
Mov Cap-2 Maneuver	-	-	-	-	286	-
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.29
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	804	-	-	-	589
HCM Lane V/C Ratio	-	-	-	-	0.028
HCM Control Delay (s/veh)	0	-	-	-	11.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	121	770	1	670	51	90	62
Future Vol, veh/h	121	770	1	670	51	90	62
Conflicting Peds, #/hr	2	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	50	-	170	-	-	0	-
Veh in Median Storage, #	-	0	-	0	-	1	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	125	794	1	691	53	93	64

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	745	0	794	-	0	1367	374
Stage 1	-	-	-	-	-	721	-
Stage 2	-	-	-	-	-	646	-
Critical Hdwy	4.14	-	6.44	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	2.52	-	-	3.52	3.32
Pot Cap-1 Maneuver	858	-	450	-	-	138	624
Stage 1	-	-	-	-	-	442	-
Stage 2	-	-	-	-	-	484	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	857	-	450	-	-	117	623
Mov Cap-2 Maneuver	-	-	-	-	-	245	-
Stage 1	-	-	-	-	-	377	-
Stage 2	-	-	-	-	-	481	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.35	0.02	25.87
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBU	WBT	WBR	SBLn1
Capacity (veh/h)	857	-	450	-	-	326
HCM Lane V/C Ratio	0.146	-	0.002	-	-	0.481
HCM Control Delay (s/veh)	9.9	-	13	-	-	25.9
HCM Lane LOS	A	-	B	-	-	D
HCM 95th %tile Q(veh)	0.5	-	0	-	-	2.5



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	856	113	669	57	154
v/c Ratio	0.50	0.31	0.28	0.16	0.36
Control Delay (s/veh)	16.7	33.3	5.2	30.8	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.7	33.3	5.2	30.8	8.2
Queue Length 50th (ft)	144	50	47	25	0
Queue Length 95th (ft)	283	114	115	61	48
Internal Link Dist (ft)	540		1203	666	
Turn Bay Length (ft)		95			80
Base Capacity (vph)	2065	694	2660	892	863
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.41	0.16	0.25	0.06	0.18

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	0	792	39	110	649	55	149
Future Volume (veh/h)	0	792	39	110	649	55	149
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)			0.97	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		816	40	113	669	57	154
Peak Hour Factor		0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		1751	86	177	2399	311	276
Arrive On Green		0.51	0.51	0.10	0.68	0.17	0.17
Sat Flow, veh/h		3536	169	1781	3647	1781	1585
Grp Volume(v), veh/h		421	435	113	669	57	154
Grp Sat Flow(s),veh/h/ln		1777	1834	1781	1777	1781	1585
Q Serve(g_s), s		9.1	9.1	3.6	4.5	1.6	5.3
Cycle Q Clear(g_c), s		9.1	9.1	3.6	4.5	1.6	5.3
Prop In Lane			0.09	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		904	933	177	2399	311	276
V/C Ratio(X)		0.47	0.47	0.64	0.28	0.18	0.56
Avail Cap(c_a), veh/h		1248	1288	834	2495	1072	954
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		9.5	9.5	25.9	3.9	21.1	22.6
Incr Delay (d2), s/veh		1.7	1.7	16.2	0.3	1.3	7.9
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		5.3	5.5	3.9	1.5	1.3	4.3
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		11.2	11.1	42.1	4.2	22.4	30.5
LnGrp LOS		B	B	D	A	C	C
Approach Vol, veh/h		856			782	211	
Approach Delay, s/veh		11.2			9.7	28.3	
Approach LOS		B			A	C	

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	45.4			10.0	35.4		14.4
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	6.5			5.6	11.1		7.3
Green Ext Time (p_c), s	16.9			1.4	19.3		3.4

Intersection Summary	
HCM 7th Control Delay, s/veh	12.5
HCM 7th LOS	B

Notes

User approved ignoring U-Turning movement.

Appendix E – Background plus Project Traffic Conditions Worksheets

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	565	108	16	32	580	66	54
Future Vol, veh/h	565	108	16	32	580	66	54
Conflicting Peds, #/hr	0	1	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	-	0	1	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	649	124	18	37	667	76	62

Major/Minor	Major1		Major2			Minor1	
Conflicting Flow All	0	0	774	775	0	1156	388
Stage 1	-	-	-	-	-	712	-
Stage 2	-	-	-	-	-	444	-
Critical Hdwy	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	464	837	-	190	611
Stage 1	-	-	-	-	-	447	-
Stage 2	-	-	-	-	-	614	-
Platoon blocked, %	-	-			-		
Mov Cap-1 Maneuver	-	-	626	626	-	173	610
Mov Cap-2 Maneuver	-	-	-	-	-	304	-
Stage 1	-	-	-	-	-	447	-
Stage 2	-	-	-	-	-	560	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.86	19.04
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	393	-	-	626	-
HCM Lane V/C Ratio	0.351	-	-	0.088	-
HCM Control Delay (s/veh)	19	-	-	11.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	634	602	61	0	22
Future Vol, veh/h	0	634	602	61	0	22
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	737	700	71	0	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	387
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	611
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	610
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.16
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	610
HCM Lane V/C Ratio	-	-	-	0.042
HCM Control Delay (s/veh)	-	-	-	11.2
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	571	0	0	661	6	0	0	0	0	0	7
Future Vol, veh/h	64	571	0	0	661	6	0	0	0	0	0	7
Conflicting Peds, #/hr	1	0	2	2	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	50	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	656	0	0	760	7	0	0	0	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	768	0	0	-	-	0	-	-	330	-	-	384
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	842	-	-	0	-	-	0	0	666	0	0	614
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	841	-	-	-	-	-	-	-	664	-	-	613
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.98	0	0	10.95
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	841	-	-	-	-	613
HCM Lane V/C Ratio	-	0.087	-	-	-	-	0.013
HCM Control Delay (s/veh)	0	9.7	-	-	-	-	10.9
HCM Lane LOS	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	-	0.3	-	-	-	-	0

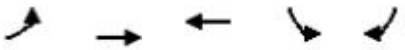
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	571	663	18	0	4
Future Vol, veh/h	0	571	663	18	0	4
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	656	762	21	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	393
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	606
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	604
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

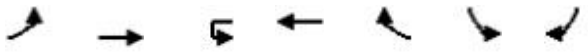
Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	604
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s/veh)	-	-	-	11
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	115	534	791	33	50
v/c Ratio	0.37	0.19	0.41	0.12	0.17
Control Delay (s/veh)	21.4	2.7	9.4	18.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.4	2.7	9.4	18.5	8.5
Queue Length 50th (ft)	25	21	76	7	0
Queue Length 95th (ft)	68	37	120	26	21
Internal Link Dist (ft)		120	540	576	
Turn Bay Length (ft)	50			100	
Base Capacity (vph)	341	2728	2057	818	759
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.20	0.38	0.04	0.07

Intersection Summary



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	101	470	0	606	90	29	44
Future Volume (veh/h)	101	470	0	606	90	29	44
Initial Q (Qb), veh	0	0		0	0	0	0
Lane Width Adj.	1.00	1.00		1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00				0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870		1870	1870	1870	1870
Adj Flow Rate, veh/h	115	534		689	102	33	50
Peak Hour Factor	0.88	0.88		0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	182	2213		1155	171	147	131
Arrive On Green	0.10	0.62		0.37	0.37	0.08	0.08
Sat Flow, veh/h	1781	3647		3185	457	1781	1585
Grp Volume(v), veh/h	115	534		396	395	33	50
Grp Sat Flow(s),veh/h/ln	1781	1777		1777	1772	1781	1585
Q Serve(g_s), s	1.9	2.0		5.5	5.5	0.5	0.9
Cycle Q Clear(g_c), s	1.9	2.0		5.5	5.5	0.5	0.9
Prop In Lane	1.00				0.26	1.00	1.00
Lane Grp Cap(c), veh/h	182	2213		664	662	147	131
V/C Ratio(X)	0.63	0.24		0.60	0.60	0.22	0.38
Avail Cap(c_a), veh/h	437	2733		1221	1218	1049	934
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	2.6		7.7	7.7	13.1	13.3
Incr Delay (d2), s/veh	3.6	0.1		0.9	0.9	0.8	1.8
Initial Q Delay(d3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0		1.9	1.9	0.4	1.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	16.8	2.6		8.6	8.6	13.9	15.1
LnGrp LOS	B	A		A	A	B	B
Approach Vol, veh/h		649		791		83	
Approach Delay, s/veh		5.1		8.6		14.6	
Approach LOS		A		A		B	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		23.5		7.0	7.6	15.9	
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s		23.5		18.0	7.5	21.0	
Max Q Clear Time (g_c+I1), s		4.0		2.9	3.9	7.5	
Green Ext Time (p_c), s		3.1		0.2	0.1	3.8	

Intersection Summary	
HCM 7th Control Delay, s/veh	7.4
HCM 7th LOS	A

Notes

User approved ignoring U-Turning movement.



Lane Group	EBU	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2	525	252	703	111	249
v/c Ratio	0.01	0.45	0.52	0.31	0.29	0.47
Control Delay (s/veh)	41.5	21.5	29.7	7.4	29.8	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.5	21.5	29.7	7.4	29.8	7.4
Queue Length 50th (ft)	1	93	95	57	43	0
Queue Length 95th (ft)	9	174	210	156	101	53
Internal Link Dist (ft)		540		1203	667	
Turn Bay Length (ft)	170		95			80
Base Capacity (vph)	681	2004	681	2351	875	894
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.26	0.37	0.30	0.13	0.28

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	2	399	57	219	612	97	217
Future Volume (veh/h)	2	399	57	219	612	97	217
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)			0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		459	66	252	703	111	249
Peak Hour Factor		0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		1033	148	372	2140	462	411
Arrive On Green		0.33	0.33	0.21	0.60	0.26	0.26
Sat Flow, veh/h		3203	444	1781	3647	1781	1585
Grp Volume(v), veh/h		261	264	252	703	111	249
Grp Sat Flow(s),veh/h/ln		1777	1777	1781	1777	1781	1585
Q Serve(g_s), s		7.5	7.6	8.5	6.4	3.2	9.0
Cycle Q Clear(g_c), s		7.5	7.6	8.5	6.4	3.2	9.0
Prop In Lane			0.25	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		590	590	372	2140	462	411
V/C Ratio(X)		0.44	0.45	0.68	0.33	0.24	0.61
Avail Cap(c_a), veh/h		1147	1148	767	2295	986	877
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		17.0	17.0	23.7	6.4	19.0	21.2
Incr Delay (d2), s/veh		2.4	2.4	9.6	0.4	1.2	6.5
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		5.4	5.5	7.4	3.1	2.5	6.8
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		19.4	19.5	33.3	6.8	20.3	27.6
LnGrp LOS		B	B	C	A	C	C
Approach Vol, veh/h		525			955	360	
Approach Delay, s/veh		19.4			13.8	25.4	
Approach LOS		B			B	C	

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	44.2			17.6	26.6		20.9
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	8.4			10.5	9.6		11.0
Green Ext Time (p_c), s	17.2			3.2	12.0		5.9

Intersection Summary	
HCM 7th Control Delay, s/veh	17.7
HCM 7th LOS	B

Notes
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	794	30	41	49	755	17	70
Future Vol, veh/h	794	30	41	49	755	17	70
Conflicting Peds, #/hr	0	3	0	3	0	0	3
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	-	0	1	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	836	32	43	52	795	18	74

Major/Minor	Major1		Major2			Minor1	
Conflicting Flow All	0	0	867	870	0	1441	440
Stage 1	-	-	-	-	-	855	-
Stage 2	-	-	-	-	-	587	-
Critical Hdwy	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	404	770	-	123	565
Stage 1	-	-	-	-	-	377	-
Stage 2	-	-	-	-	-	519	-
Platoon blocked, %	-	-			-		
Mov Cap-1 Maneuver	-	-	498	498	-	100	562
Mov Cap-2 Maneuver	-	-	-	-	-	226	-
Stage 1	-	-	-	-	-	376	-
Stage 2	-	-	-	-	-	420	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.48	15.45
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	436	-	-	498	-
HCM Lane V/C Ratio	0.21	-	-	0.19	-
HCM Control Delay (s/veh)	15.4	-	-	13.9	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.8	-	-	0.7	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	911	793	9	0	57
Future Vol, veh/h	0	911	793	9	0	57
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	949	826	9	0	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	420
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	582
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	581
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	581
HCM Lane V/C Ratio	-	-	-	0.102
HCM Control Delay (s/veh)	-	-	-	11.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	893	0	0	782	7	0	0	0	0	0	17
Future Vol, veh/h	18	893	0	0	782	7	0	0	0	0	0	17
Conflicting Peds, #/hr	2	0	2	2	0	2	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	50	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	930	0	0	815	7	0	0	0	0	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	824	0	0	-	-	0	-	-	467	-	-	413
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	802	-	-	0	-	-	0	0	542	0	0	588
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	800	-	-	-	-	-	-	-	541	-	-	587
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.19	0	0	11.32
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	800	-	-	-	-	587
HCM Lane V/C Ratio	-	0.023	-	-	-	-	0.03
HCM Control Delay (s/veh)	0	9.6	-	-	-	-	11.3
HCM Lane LOS	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	-	-	0.1

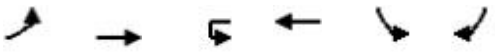
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	893	772	19	0	17
Future Vol, veh/h	0	893	772	19	0	17
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	930	804	20	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	414
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	587
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	586
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.33
HCM LOS			B

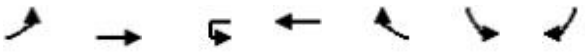
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	586
HCM Lane V/C Ratio	-	-	-	0.03
HCM Control Delay (s/veh)	-	-	-	11.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Lane Group	EBL	EBT	WBU	WBT	SBL	SBR
Lane Group Flow (vph)	126	795	1	751	96	64
v/c Ratio	0.51	0.44	0.00	0.58	0.27	0.17
Control Delay (s/veh)	30.5	7.7	18.0	12.4	17.1	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.5	7.7	18.0	12.4	17.1	6.6
Queue Length 50th (ft)	28	40	0	68	19	0
Queue Length 95th (ft)	#99	130	4	120	52	22
Internal Link Dist (ft)		120		540	576	
Turn Bay Length (ft)	50		170		100	
Base Capacity (vph)	245	2105	245	1802	885	823
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.38	0.00	0.42	0.11	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	122	771	1	677	51	93	62
Future Volume (veh/h)	122	771	1	677	51	93	62
Initial Q (Qb), veh	0	0		0	0	0	0
Lane Width Adj.	1.00	1.00		1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00				0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870		1870	1870	1870	1870
Adj Flow Rate, veh/h	126	795		698	53	96	64
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2		2	2	2	2
Cap, veh/h	185	2046		1121	85	270	240
Arrive On Green	0.10	0.58		0.34	0.34	0.15	0.15
Sat Flow, veh/h	1781	3647		3433	253	1781	1585
Grp Volume(v), veh/h	126	795		371	380	96	64
Grp Sat Flow(s),veh/h/ln	1781	1777		1777	1816	1781	1585
Q Serve(g_s), s	2.3	4.0		5.8	5.8	1.6	1.2
Cycle Q Clear(g_c), s	2.3	4.0		5.8	5.8	1.6	1.2
Prop In Lane	1.00				0.14	1.00	1.00
Lane Grp Cap(c), veh/h	185	2046		596	610	270	240
V/C Ratio(X)	0.68	0.39		0.62	0.62	0.36	0.27
Avail Cap(c_a), veh/h	270	2046		996	1018	972	865
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	3.8		9.2	9.2	12.6	12.4
Incr Delay (d2), s/veh	4.4	0.1		1.1	1.0	0.8	0.6
Initial Q Delay(d3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.4		2.5	2.5	1.0	2.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh	18.6	3.9		10.3	10.3	13.3	13.0
LnGrp LOS	B	A		B	B	B	B
Approach Vol, veh/h		921		751		160	
Approach Delay, s/veh		6.0		10.3		13.2	
Approach LOS		A		B		B	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		23.5		9.5	7.9	15.6	
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	
Max Green Setting (Gmax), s		18.5		18.0	5.0	18.5	
Max Q Clear Time (g_c+I1), s		6.0		3.6	4.3	7.8	
Green Ext Time (p_c), s		4.0		0.4	0.0	3.1	

Intersection Summary	
HCM 7th Control Delay, s/veh	8.4
HCM 7th LOS	A

Notes
User approved ignoring U-Turning movement.



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	861	113	676	57	154
v/c Ratio	0.50	0.31	0.28	0.16	0.36
Control Delay (s/veh)	16.7	33.3	5.2	30.8	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.7	33.3	5.2	30.8	8.2
Queue Length 50th (ft)	146	50	48	25	0
Queue Length 95th (ft)	284	114	116	61	48
Internal Link Dist (ft)	540		1203	666	
Turn Bay Length (ft)		95			80
Base Capacity (vph)	2063	693	2660	891	862
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.16	0.25	0.06	0.18

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	0	796	39	110	656	55	149
Future Volume (veh/h)	0	796	39	110	656	55	149
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)			0.97	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		821	40	113	676	57	154
Peak Hour Factor		0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		1755	85	177	2402	310	276
Arrive On Green		0.51	0.51	0.10	0.68	0.17	0.17
Sat Flow, veh/h		3537	168	1781	3647	1781	1585
Grp Volume(v), veh/h		424	437	113	676	57	154
Grp Sat Flow(s),veh/h/ln		1777	1834	1781	1777	1781	1585
Q Serve(g_s), s		9.2	9.2	3.7	4.6	1.6	5.3
Cycle Q Clear(g_c), s		9.2	9.2	3.7	4.6	1.6	5.3
Prop In Lane			0.09	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		905	935	177	2402	310	276
V/C Ratio(X)		0.47	0.47	0.64	0.28	0.18	0.56
Avail Cap(c_a), veh/h		1244	1284	831	2487	1069	951
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		9.5	9.5	26.0	3.9	21.1	22.7
Incr Delay (d2), s/veh		1.7	1.7	16.2	0.3	1.3	7.9
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		5.4	5.6	3.9	1.5	1.3	4.4
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		11.2	11.2	42.2	4.2	22.4	30.6
LnGrp LOS		B	B	D	A	C	C
Approach Vol, veh/h		861			789	211	
Approach Delay, s/veh		11.2			9.6	28.4	
Approach LOS		B			A	C	

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	45.6			10.0	35.6		14.5
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	6.6			5.7	11.2		7.3
Green Ext Time (p_c), s	17.1			1.4	19.4		3.4

Intersection Summary	
HCM 7th Control Delay, s/veh	12.5
HCM 7th LOS	B

Notes
User approved ignoring U-Turning movement.

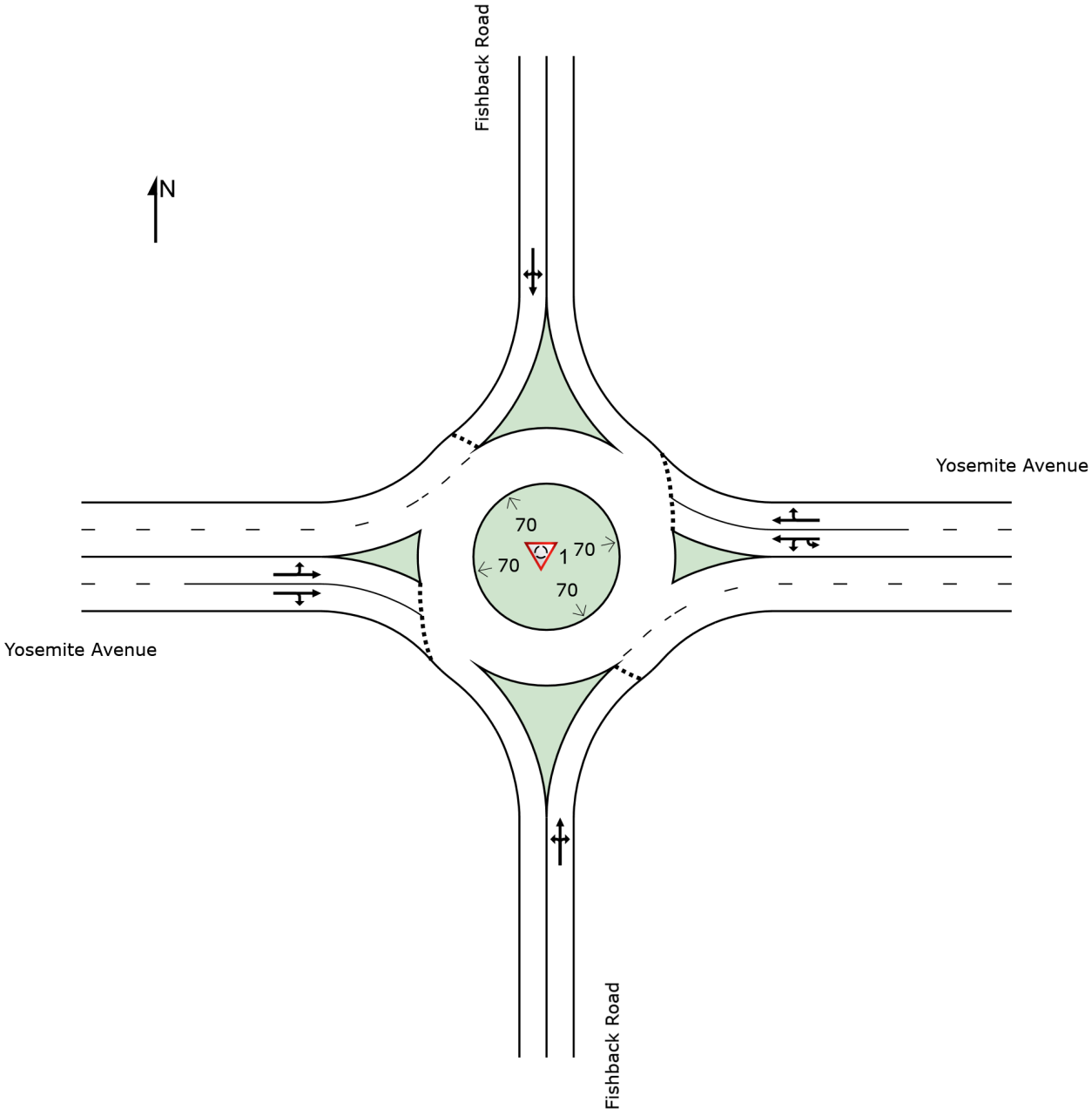
Appendix F – Cumulative Traffic Conditions Worksheets

SITE LAYOUT

Site: 1 [07-Cumulative AM (Site Folder: Kaiser Manteca)]

NA
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 1 [07-Cumulative AM (Site Folder: Kaiser Manteca)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Fishback Road															
3	L2	All MCs	121	2.0	121	2.0	0.370	10.3	LOS B	1.7	43.5	0.67	0.66	0.81	20.1
		LV	118		118		0.370	10.0	LOS B	1.7	43.5	NA	NA	NA	20.2
8	T1	All MCs	11	2.0	11	2.0	0.370	10.3	LOS B	1.7	43.5	0.67	0.66	0.81	20.9
		LV	11		11		0.370	10.0	LOS B	1.7	43.5	NA	NA	NA	21.1
18	R2	All MCs	117	2.0	117	2.0	0.370	10.3	LOS B	1.7	43.5	0.67	0.66	0.81	16.9
		LV	115		115		0.370	10.0	LOS B	1.7	43.5	NA	NA	NA	17.0
Approach			249	2.0	249	2.0	0.370	10.3	LOS B	1.7	43.5	0.67	0.66	0.81	18.8
East: Yosemite Avenue															
1u	U	All MCs	16	2.0	16	2.0	0.314	5.8	LOS A	1.6	40.6	0.33	0.17	0.33	12.1
		LV	16		16		0.314	5.7	LOS A	1.6	40.6	NA	NA	NA	12.2
1	L2	All MCs	51	2.0	51	2.0	0.314	5.8	LOS A	1.6	40.6	0.33	0.17	0.33	22.3
		LV	50		50		0.314	5.7	LOS A	1.6	40.6	NA	NA	NA	22.4
6	T1	All MCs	690	2.0	690	2.0	0.314	5.8	LOS A	1.6	40.6	0.33	0.17	0.33	23.2
		LV	676		676		0.314	5.7	LOS A	1.6	40.6	NA	NA	NA	23.3
16	R2	All MCs	9	2.0	9	2.0	0.314	5.8	LOS A	1.6	40.6	0.33	0.17	0.33	23.4
		LV	9		9		0.314	5.7	LOS A	1.6	40.6	NA	NA	NA	23.5
Approach			766	2.0	766	2.0	0.314	5.8	LOS A	1.6	40.6	0.33	0.17	0.33	22.9
North: Fishback Road															
7	L2	All MCs	32	2.0	32	2.0	0.164	8.4	LOS A	0.6	15.2	0.64	0.62	0.64	14.4
		LV	32		32		0.164	8.1	LOS A	0.6	15.2	NA	NA	NA	14.5
4	T1	All MCs	33	2.0	33	2.0	0.164	8.4	LOS A	0.6	15.2	0.64	0.62	0.64	22.2
		LV	33		33		0.164	8.1	LOS A	0.6	15.2	NA	NA	NA	22.4
14	R2	All MCs	28	2.0	28	2.0	0.164	8.4	LOS A	0.6	15.2	0.64	0.62	0.64	21.7
		LV	27		27		0.164	8.1	LOS A	0.6	15.2	NA	NA	NA	21.9
Approach			93	2.0	93	2.0	0.164	8.4	LOS A	0.6	15.2	0.64	0.62	0.64	19.4
West: Yosemite Avenue															
5	L2	All MCs	7	2.0	7	2.0	0.341	6.0	LOS A	1.8	44.6	0.33	0.16	0.33	25.2
		LV	7		7		0.341	5.9	LOS A	1.8	44.6	NA	NA	NA	25.3
2	T1	All MCs	684	2.0	684	2.0	0.341	6.0	LOS A	1.8	44.6	0.33	0.16	0.33	20.5
		LV	670		670		0.341	5.9	LOS A	1.8	44.6	NA	NA	NA	20.6
12	R2	All MCs	149	2.0	149	2.0	0.341	6.0	LOS A	1.8	44.6	0.33	0.16	0.33	25.6
		LV	146		146		0.341	5.9	LOS A	1.8	44.6	NA	NA	NA	25.7
Approach			840	2.0	840	2.0	0.341	6.0	LOS A	1.8	44.6	0.33	0.16	0.33	21.7
All Vehicles			1948	2.0	1948	2.0	0.370	6.6	LOS A	1.8	44.6	0.39	0.25	0.41	21.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	739	607	64	0	34
Future Vol, veh/h	0	739	607	64	0	34
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	859	706	74	0	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	782	0	-	0	1175	392
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	430	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	831	-	-	-	185	607
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	830	-	-	-	184	606
Mov Cap-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	623	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.36
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	830	-	-	-	606
HCM Lane V/C Ratio	-	-	-	-	0.065
HCM Control Delay (s/veh)	0	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	677	0	0	670	3	0	0	0	5	0	1
Future Vol, veh/h	62	677	0	0	670	3	0	0	0	5	0	1
Conflicting Peds, #/hr	1	0	2	2	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	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	778	0	0	770	3	0	0	0	6	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	775	0	0	780	0	0	1308	1697	391	1304	1696	388
Stage 1	-	-	-	-	-	-	923	923	-	773	773	-
Stage 2	-	-	-	-	-	-	385	775	-	532	923	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	837	-	-	833	-	-	117	91	608	118	92	611
Stage 1	-	-	-	-	-	-	290	347	-	358	407	-
Stage 2	-	-	-	-	-	-	610	406	-	499	347	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	836	-	-	831	-	-	107	83	607	108	84	610
Mov Cap-2 Maneuver	-	-	-	-	-	-	203	187	-	231	200	-
Stage 1	-	-	-	-	-	-	265	317	-	358	407	-
Stage 2	-	-	-	-	-	-	609	406	-	457	317	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.81	0	0	19.34
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	836	-	-	831	-	-	258
HCM Lane V/C Ratio	-	0.085	-	-	-	-	-	0.027
HCM Control Delay (s/veh)	0	9.7	-	-	0	-	-	19.3
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	680	671	14	1	2
Future Vol, veh/h	2	680	671	14	1	2
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	782	771	16	1	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	789	0	-	0	1177	396
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	826	-	-	-	184	604
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	825	-	-	-	183	602
Mov Cap-2 Maneuver	-	-	-	-	306	-
Stage 1	-	-	-	-	410	-
Stage 2	-	-	-	-	648	-

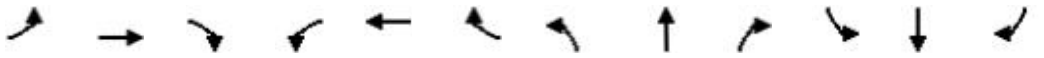
Approach	EB	WB	SB
HCM Control Delay, s/v	0.03	0	12.96
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	825	-	-	-	455
HCM Lane V/C Ratio	0.003	-	-	-	0.008
HCM Control Delay (s/veh)	9.4	-	-	-	13
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	105	669	15	880	38	73	76	26	50
v/c Ratio	0.35	0.27	0.04	0.46	0.14	0.20	0.30	0.07	0.13
Control Delay (s/veh)	23.2	4.3	10.3	10.6	18.5	12.0	20.9	17.5	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	23.2	4.3	10.3	10.6	18.5	12.0	20.9	17.5	1.6
Queue Length 50th (ft)	26	33	2	94	9	8	18	6	0
Queue Length 95th (ft)	68	64	12	156	29	34	49	22	5
Internal Link Dist (ft)		120		540		256		576	
Turn Bay Length (ft)	250		170		50		265		265
Base Capacity (vph)	327	2392	418	1959	611	782	585	826	762
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.28	0.04	0.45	0.06	0.09	0.13	0.03	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	573	16	13	649	125	33	30	34	67	23	44
Future Volume (veh/h)	92	573	16	13	649	125	33	30	34	67	23	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	105	651	18	15	738	142	38	34	39	76	26	50
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	2115	58	495	1125	216	382	117	134	348	275	233
Arrive On Green	0.09	0.60	0.60	0.38	0.38	0.38	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	3532	98	767	2957	569	1323	795	912	1327	1870	1585
Grp Volume(v), veh/h	105	327	342	15	443	437	38	0	73	76	26	50
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	767	1777	1748	1323	0	1706	1327	1870	1585
Q Serve(g_s), s	2.0	3.2	3.2	0.4	7.3	7.3	0.9	0.0	1.3	1.9	0.4	1.0
Cycle Q Clear(g_c), s	2.0	3.2	3.2	0.4	7.3	7.3	1.3	0.0	1.3	3.3	0.4	1.0
Prop In Lane	1.00		0.05	1.00		0.33	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	162	1064	1109	495	676	665	382	0	251	348	275	233
V/C Ratio(X)	0.65	0.31	0.31	0.03	0.66	0.66	0.10	0.00	0.29	0.22	0.09	0.21
Avail Cap(c_a), veh/h	378	1180	1230	659	1054	1038	861	0	868	828	951	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	3.5	3.5	6.9	9.0	9.0	13.6	0.0	13.5	14.9	13.1	13.3
Incr Delay (d2), s/veh	4.3	0.2	0.2	0.0	1.1	1.1	0.1	0.0	0.6	0.3	0.1	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.4	0.4	0.1	3.1	3.0	0.4	0.0	0.8	0.9	0.3	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.8	3.7	3.6	6.9	10.1	10.2	13.7	0.0	14.1	15.2	13.2	13.8
LnGrp LOS	B	A	A	A	B	B	B		B	B	B	B
Approach Vol, veh/h		774			895			111			152	
Approach Delay, s/veh		5.8			10.1			14.0			14.4	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	7.7	18.0		9.7		25.7		9.7				
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s	7.5	21.0		18.0		23.5		18.0				
Max Q Clear Time (g_c+I1), s	4.0	9.3		5.3		5.2		3.3				
Green Ext Time (p_c), s	0.1	4.1		0.4		3.5		0.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			9.0									
HCM 7th LOS			A									



Lane Group	EBU	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2	715	278	790	151	326
v/c Ratio	0.02	0.54	0.60	0.33	0.41	0.56
Control Delay (s/veh)	47.0	23.4	37.0	7.5	36.7	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.0	23.4	37.0	7.5	36.7	8.1
Queue Length 50th (ft)	1	158	138	78	76	0
Queue Length 95th (ft)	9	242	251	177	143	61
Internal Link Dist (ft)		540		1203	667	
Turn Bay Length (ft)	170		95			80
Base Capacity (vph)	575	1691	575	2368	740	839
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.42	0.48	0.33	0.20	0.39

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	2	530	92	242	687	131	284
Future Volume (veh/h)	2	530	92	242	687	131	284
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)			0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		609	106	278	790	151	326
Peak Hour Factor		0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		1074	186	366	2163	510	454
Arrive On Green		0.36	0.36	0.21	0.61	0.29	0.29
Sat Flow, veh/h		3108	523	1781	3647	1781	1585
Grp Volume(v), veh/h		358	357	278	790	151	326
Grp Sat Flow(s),veh/h/ln		1777	1761	1781	1777	1781	1585
Q Serve(g_s), s		14.0	14.0	12.6	9.6	5.7	15.9
Cycle Q Clear(g_c), s		14.0	14.0	12.6	9.6	5.7	15.9
Prop In Lane			0.30	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		633	627	366	2163	510	454
V/C Ratio(X)		0.57	0.57	0.76	0.37	0.30	0.72
Avail Cap(c_a), veh/h		870	862	581	2163	747	665
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		22.3	22.3	32.1	8.5	23.9	27.5
Incr Delay (d2), s/veh		3.6	3.7	13.7	0.5	1.5	9.4
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		9.9	9.9	10.6	5.5	4.5	11.2
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		25.9	26.0	45.8	8.9	25.3	36.9
LnGrp LOS		C	C	D	A	C	D
Approach Vol, veh/h		715			1068	477	
Approach Delay, s/veh		26.0			18.5	33.2	
Approach LOS		C			B	C	

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	57.2			21.6	35.6		28.6
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	11.6			14.6	16.0		17.9
Green Ext Time (p_c), s	18.1			3.1	14.5		6.7

Intersection Summary	
HCM 7th Control Delay, s/veh	24.0
HCM 7th LOS	C

Notes

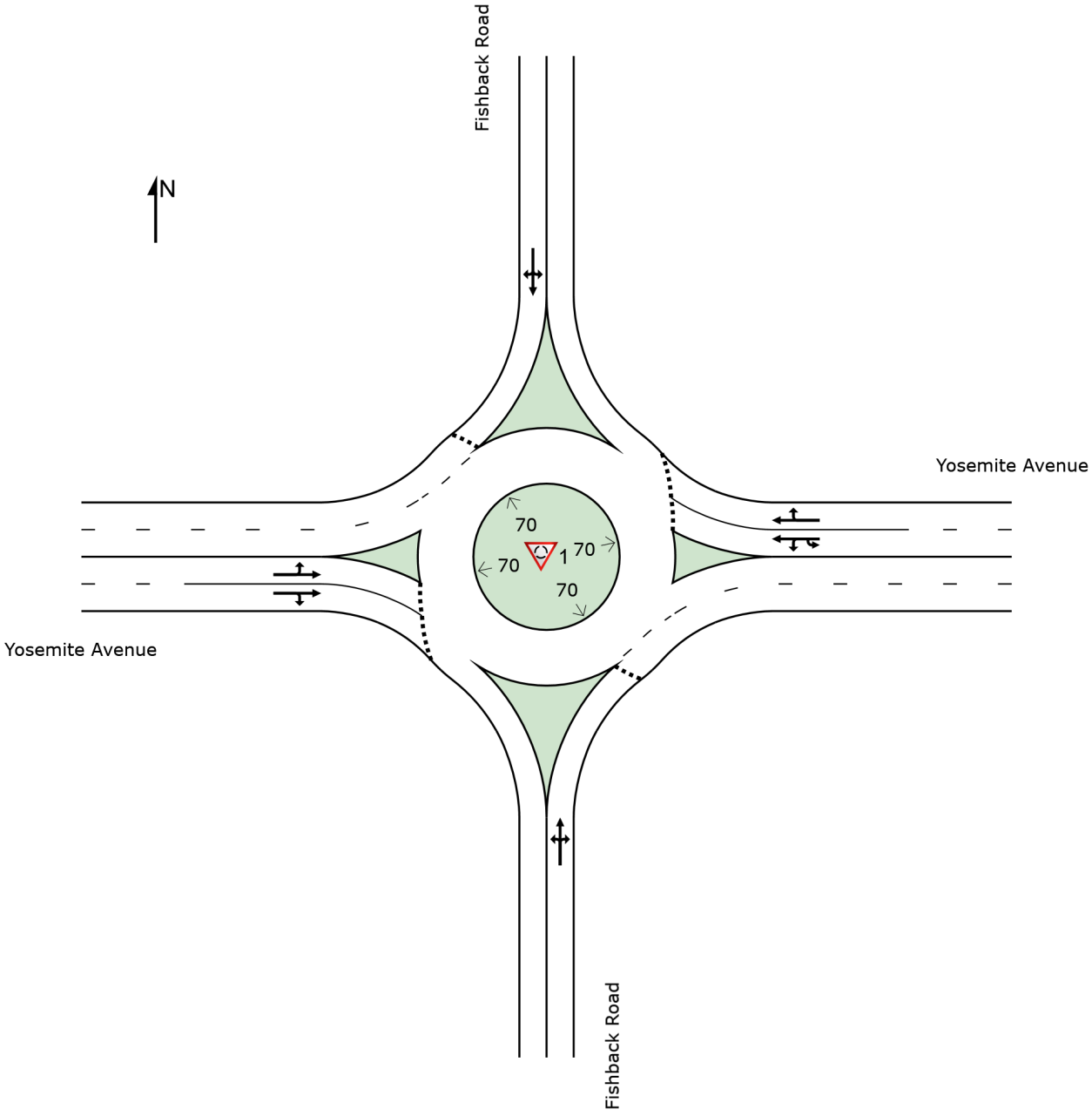
User approved ignoring U-Turning movement.

SITE LAYOUT

Site: 1 [08-Cumulative PM (Site Folder: Kaiser Manteca)]

NA
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 1 [08-Cumulative PM (Site Folder: Kaiser Manteca)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Fishback Road															
3	L2	All MCs	26	2.0	26	2.0	0.280	10.4	LOS B	1.1	26.9	0.67	0.68	0.71	20.5
		LV	26		26		0.280	10.1	LOS B	1.1	26.9	NA	NA	NA	20.7
8	T1	All MCs	28	2.0	28	2.0	0.280	10.4	LOS B	1.1	26.9	0.67	0.68	0.71	21.4
		LV	28		28		0.280	10.1	LOS B	1.1	26.9	NA	NA	NA	21.6
18	R2	All MCs	100	2.0	100	2.0	0.280	10.4	LOS B	1.1	26.9	0.67	0.68	0.71	17.3
		LV	98		98		0.280	10.1	LOS B	1.1	26.9	NA	NA	NA	17.4
Approach			155	2.0	155	2.0	0.280	10.4	LOS B	1.1	26.9	0.67	0.68	0.71	18.8
East: Yosemite Avenue															
1u	U	All MCs	41	2.0	41	2.0	0.393	6.3	LOS A	2.2	56.9	0.27	0.11	0.27	11.7
		LV	40		40		0.393	6.2	LOS A	2.2	56.9	NA	NA	NA	11.8
1	L2	All MCs	86	2.0	86	2.0	0.393	6.3	LOS A	2.2	56.9	0.27	0.11	0.27	21.6
		LV	85		85		0.393	6.2	LOS A	2.2	56.9	NA	NA	NA	21.7
6	T1	All MCs	867	2.0	867	2.0	0.393	6.3	LOS A	2.2	56.9	0.27	0.11	0.27	22.5
		LV	850		850		0.393	6.2	LOS A	2.2	56.9	NA	NA	NA	22.6
16	R2	All MCs	20	2.0	20	2.0	0.393	6.3	LOS A	2.2	56.9	0.27	0.11	0.27	22.9
		LV	20		20		0.393	6.2	LOS A	2.2	56.9	NA	NA	NA	23.0
Approach			1015	2.0	1015	2.0	0.393	6.3	LOS A	2.2	56.9	0.27	0.11	0.27	22.0
North: Fishback Road															
7	L2	All MCs	8	2.0	8	2.0	0.061	8.0	LOS A	0.2	5.2	0.64	0.64	0.64	14.6
		LV	8		8		0.061	7.7	LOS A	0.2	5.2	NA	NA	NA	14.8
4	T1	All MCs	14	2.0	14	2.0	0.061	8.0	LOS A	0.2	5.2	0.64	0.64	0.64	22.6
		LV	13		13		0.061	7.7	LOS A	0.2	5.2	NA	NA	NA	22.8
14	R2	All MCs	8	2.0	8	2.0	0.061	8.0	LOS A	0.2	5.2	0.64	0.64	0.64	22.1
		LV	8		8		0.061	7.7	LOS A	0.2	5.2	NA	NA	NA	22.3
Approach			31	2.0	31	2.0	0.061	8.0	LOS A	0.2	5.2	0.64	0.64	0.64	20.3
West: Yosemite Avenue															
5	L2	All MCs	26	2.0	26	2.0	0.394	6.7	LOS A	2.1	53.4	0.36	0.19	0.36	24.6
		LV	26		26		0.394	6.6	LOS A	2.1	53.4	NA	NA	NA	24.7
2	T1	All MCs	868	2.0	868	2.0	0.394	6.7	LOS A	2.1	53.4	0.36	0.19	0.36	19.8
		LV	851		851		0.394	6.6	LOS A	2.1	53.4	NA	NA	NA	19.9
12	R2	All MCs	66	2.0	66	2.0	0.394	6.7	LOS A	2.1	53.4	0.36	0.19	0.36	25.1
		LV	65		65		0.394	6.6	LOS A	2.1	53.4	NA	NA	NA	25.2
Approach			961	2.0	961	2.0	0.394	6.7	LOS A	2.1	53.4	0.36	0.19	0.36	20.4
All Vehicles			2161	2.0	2161	2.0	0.394	6.8	LOS A	2.2	56.9	0.35	0.19	0.35	20.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	967	842	8	0	90
Future Vol, veh/h	0	967	842	8	0	90
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1007	877	8	0	94

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	887	0	-	0	1387	445
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	504	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	759	-	-	-	134	561
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	757	-	-	-	133	560
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	571	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	12.72
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	757	-	-	-	560
HCM Lane V/C Ratio	-	-	-	-	0.167
HCM Control Delay (s/veh)	0	-	-	-	12.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	951	0	0	842	6	0	0	0	12	0	8
Future Vol, veh/h	17	951	0	0	842	6	0	0	0	12	0	8
Conflicting Peds, #/hr	2	0	2	2	0	2	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	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	991	0	0	877	6	0	0	0	13	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	885	0	0	993	0	0	1467	1913	497	1413	1910	444
Stage 1	-	-	-	-	-	-	1028	1028	-	882	882	-
Stage 2	-	-	-	-	-	-	439	885	-	531	1028	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	760	-	-	692	-	-	89	67	518	98	67	562
Stage 1	-	-	-	-	-	-	251	310	-	307	362	-
Stage 2	-	-	-	-	-	-	567	361	-	500	310	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	759	-	-	691	-	-	86	65	517	95	66	561
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	176	-	213	180	-
Stage 1	-	-	-	-	-	-	244	302	-	307	362	-
Stage 2	-	-	-	-	-	-	559	360	-	488	302	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.17	0	0	18.74
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	759	-	-	691	-	-	283
HCM Lane V/C Ratio	-	0.023	-	-	-	-	-	0.074
HCM Control Delay (s/veh)	0	9.9	-	-	0	-	-	18.7
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	960	839	18	7	10
Future Vol, veh/h	3	960	839	18	7	10
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1000	874	19	7	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	895	0	-	0	1392	448
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	506	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	754	-	-	-	133	558
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	570	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	753	-	-	-	132	557
Mov Cap-2 Maneuver	-	-	-	-	258	-
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	569	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.03	0	15.02
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	753	-	-	-	377
HCM Lane V/C Ratio	0.004	-	-	-	0.047
HCM Control Delay (s/veh)	9.8	-	-	-	15
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	91	906	28	825	20	40	135	26	102
v/c Ratio	0.33	0.46	0.12	0.61	0.10	0.18	0.41	0.07	0.25
Control Delay (s/veh)	34.6	9.8	19.4	20.4	36.6	26.3	33.5	29.8	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	34.6	9.8	19.4	20.4	36.6	26.3	33.5	29.8	4.4
Queue Length 50th (ft)	35	111	8	151	8	9	52	9	0
Queue Length 95th (ft)	97	197	31	270	34	44	131	36	24
Internal Link Dist (ft)		120		540		258		576	
Turn Bay Length (ft)	250		170		50		265		265
Base Capacity (vph)	503	2899	427	2530	584	585	698	735	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.31	0.07	0.33	0.03	0.07	0.19	0.04	0.14

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	88	850	29	1	26	707	93	19	21	17	131	25
Future Volume (veh/h)	88	850	29	1	26	707	93	19	21	17	131	25
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.97	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
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	876	30		27	729	96	20	22	18	135	26
Peak Hour Factor	0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	132	1849	63		374	1124	148	103	55	45	224	236
Arrive On Green	0.07	0.53	0.53		0.36	0.36	0.36	0.06	0.06	0.06	0.13	0.13
Sat Flow, veh/h	1781	3505	120		615	3145	414	1781	952	779	1781	1870
Grp Volume(v), veh/h	91	444	462		27	412	413	20	0	40	135	26
Grp Sat Flow(s),veh/h/ln	1781	1777	1848		615	1777	1782	1781	0	1730	1781	1870
Q Serve(g_s), s	2.3	7.4	7.4		1.4	9.1	9.1	0.5	0.0	1.0	3.4	0.6
Cycle Q Clear(g_c), s	2.3	7.4	7.4		1.4	9.1	9.1	0.5	0.0	1.0	3.4	0.6
Prop In Lane	1.00		0.06		1.00		0.23	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	132	937	975		374	635	637	103	0	100	224	236
V/C Ratio(X)	0.69	0.47	0.47		0.07	0.65	0.65	0.19	0.00	0.40	0.60	0.11
Avail Cap(c_a), veh/h	590	2127	2212		758	1747	1752	685	0	666	819	859
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
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	7.0	7.0		10.1	12.6	12.6	21.0	0.0	21.3	19.3	18.1
Incr Delay (d2), s/veh	6.3	0.4	0.4		0.1	1.1	1.1	0.9	0.0	2.6	2.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	2.9	3.1		0.3	5.0	5.0	0.4	0.0	0.8	2.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.4	7.3	7.3		10.2	13.7	13.7	21.9	0.0	23.8	21.9	18.3
LnGrp LOS	C	A	A		B	B	B	C		C	C	B
Approach Vol, veh/h		997				852			60			263
Approach Delay, s/veh		9.2				13.6			23.2			21.2
Approach LOS		A				B			C			C

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.0	21.2		10.4		29.2		7.2				
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s	15.5	46.0		21.5		56.0		18.0				
Max Q Clear Time (g_c+I1), s	4.3	11.1		5.4		9.4		3.0				
Green Ext Time (p_c), s	0.1	5.6		0.7		6.0		0.1				

Intersection Summary			
HCM 7th Control Delay, s/veh		12.7	
HCM 7th LOS		B	

Notes
User approved ignoring U-Turning movement.



Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	99
Future Volume (veh/h)	99
Initial Q (Qb), veh	0
Lane Width Adj.	1.00
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	102
Peak Hour Factor	0.97
Percent Heavy Veh, %	2
Cap, veh/h	200
Arrive On Green	0.13
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	102
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	2.8
Cycle Q Clear(g_c), s	2.8
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	200
V/C Ratio(X)	0.51
Avail Cap(c_a), veh/h	728
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	19.1
Incr Delay (d2), s/veh	2.0
Initial Q Delay(d3), s/veh	0.0
%ile BackOfQ(95%),veh/ln	1.9
Unsig. Movement Delay, s/veh	
LnGrp Delay(d), s/veh	21.1
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1011	151	727	100	172
v/c Ratio	0.62	0.43	0.29	0.30	0.40
Control Delay (s/veh)	20.8	36.0	5.3	34.4	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.8	36.0	5.3	34.4	8.2
Queue Length 50th (ft)	202	73	60	49	0
Queue Length 95th (ft)	367	147	125	99	52
Internal Link Dist (ft)	540		1203	666	
Turn Bay Length (ft)		95			80
Base Capacity (vph)	1710	578	2518	742	754
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.26	0.29	0.13	0.23

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations								
Traffic Volume (veh/h)	0	896	84	146	705	97	167	
Future Volume (veh/h)	0	896	84	146	705	97	167	
Initial Q (Qb), veh		0	0	0	0	0	0	
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00	
Ped-Bike Adj(A_pbT)			0.97	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No			No	No		
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h		924	87	151	727	100	172	
Peak Hour Factor		0.97	0.97	0.97	0.97	0.97	0.97	
Percent Heavy Veh, %		2	2	2	2	2	2	
Cap, veh/h		1637	154	229	2434	336	299	
Arrive On Green		0.50	0.50	0.13	0.68	0.19	0.19	
Sat Flow, veh/h		3366	308	1781	3647	1781	1585	
Grp Volume(v), veh/h		502	509	151	727	100	172	
Grp Sat Flow(s),veh/h/ln		1777	1804	1781	1777	1781	1585	
Q Serve(g_s), s		14.0	14.0	5.7	5.8	3.4	7.0	
Cycle Q Clear(g_c), s		14.0	14.0	5.7	5.8	3.4	7.0	
Prop In Lane			0.17	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		889	902	229	2434	336	299	
V/C Ratio(X)		0.56	0.56	0.66	0.30	0.30	0.58	
Avail Cap(c_a), veh/h		1050	1066	702	2434	902	803	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh		12.4	12.4	29.5	4.4	24.8	26.3	
Incr Delay (d2), s/veh		2.6	2.6	14.0	0.3	2.3	7.9	
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln		8.7	8.8	5.6	2.4	2.8	1.2	
Unsig. Movement Delay, s/veh								
LnGrp Delay(d), s/veh		15.0	14.9	43.4	4.8	27.1	34.1	
LnGrp LOS		B	B	D	A	C	C	
Approach Vol, veh/h		1011			878	272		
Approach Delay, s/veh		14.9			11.4	31.5		
Approach LOS		B			B	C		

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	53.7			13.1	40.5		17.4
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	7.8			7.7	16.0		9.0
Green Ext Time (p_c), s	18.0			1.9	19.6		4.4

Intersection Summary	
HCM 7th Control Delay, s/veh	15.6
HCM 7th LOS	B

Notes
User approved ignoring U-Turning movement.

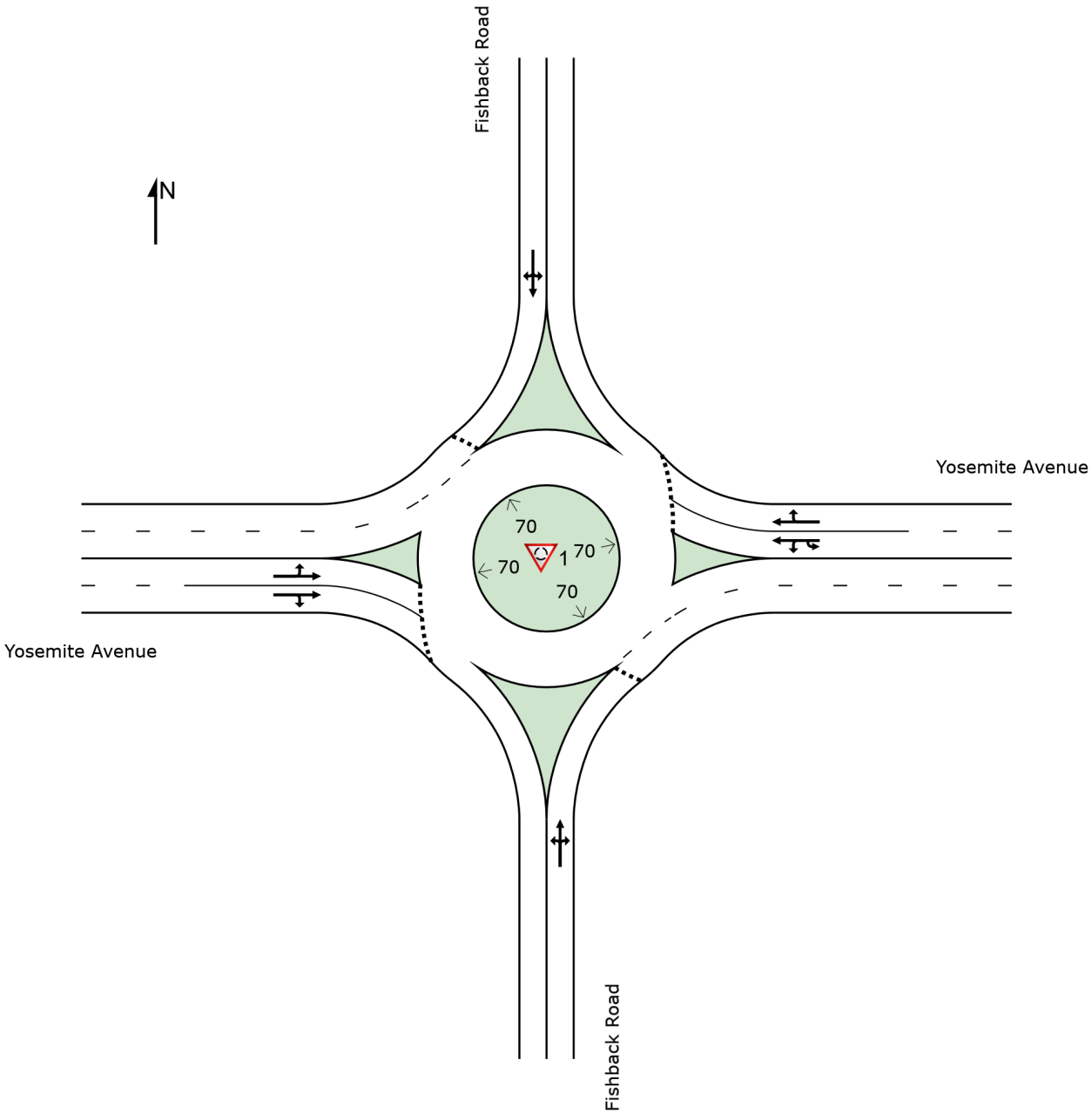
Appendix G – Cumulative plus Project Traffic Conditions Worksheets

SITE LAYOUT

Site: 1 [09-Cumulative plus Project AM (Site Folder: Kaiser Manteca)]

NA
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 1 [09-Cumulative plus Project AM (Site Folder: Kaiser Manteca)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Fishback Road															
3	L2	All MCs	121	2.0	121	2.0	0.372	10.4	LOS B	1.7	43.9	0.67	0.67	0.81	20.0
		LV	118		118		0.372	10.1	LOS B	1.7	43.9	NA	NA	NA	20.1
8	T1	All MCs	11	2.0	11	2.0	0.372	10.4	LOS B	1.7	43.9	0.67	0.67	0.81	20.9
		LV	11		11		0.372	10.1	LOS B	1.7	43.9	NA	NA	NA	21.0
18	R2	All MCs	117	2.0	117	2.0	0.372	10.4	LOS B	1.7	43.9	0.67	0.67	0.81	16.8
		LV	115		115		0.372	10.1	LOS B	1.7	43.9	NA	NA	NA	17.0
Approach			249	2.0	249	2.0	0.372	10.4	LOS B	1.7	43.9	0.67	0.67	0.81	18.8
East: Yosemite Avenue															
1u	U	All MCs	18	2.0	18	2.0	0.300	5.6	LOS A	1.5	38.2	0.33	0.16	0.33	12.2
		LV	18		18		0.300	5.5	LOS A	1.5	38.2	NA	NA	NA	12.3
1	L2	All MCs	51	2.0	51	2.0	0.300	5.6	LOS A	1.5	38.2	0.33	0.16	0.33	22.4
		LV	50		50		0.300	5.5	LOS A	1.5	38.2	NA	NA	NA	22.5
6	T1	All MCs	654	2.0	654	2.0	0.300	5.6	LOS A	1.5	38.2	0.33	0.16	0.33	23.3
		LV	641		641		0.300	5.5	LOS A	1.5	38.2	NA	NA	NA	23.4
16	R2	All MCs	9	2.0	9	2.0	0.300	5.6	LOS A	1.5	38.2	0.33	0.16	0.33	23.6
		LV	9		9		0.300	5.5	LOS A	1.5	38.2	NA	NA	NA	23.7
Approach			732	2.0	732	2.0	0.300	5.6	LOS A	1.5	38.2	0.33	0.16	0.33	23.0
North: Fishback Road															
7	L2	All MCs	32	2.0	32	2.0	0.159	8.1	LOS A	0.6	14.8	0.63	0.60	0.63	14.5
		LV	32		32		0.159	7.8	LOS A	0.6	14.8	NA	NA	NA	14.6
4	T1	All MCs	33	2.0	33	2.0	0.159	8.1	LOS A	0.6	14.8	0.63	0.60	0.63	22.4
		LV	33		33		0.159	7.8	LOS A	0.6	14.8	NA	NA	NA	22.6
14	R2	All MCs	28	2.0	28	2.0	0.159	8.1	LOS A	0.6	14.8	0.63	0.60	0.63	21.9
		LV	27		27		0.159	7.8	LOS A	0.6	14.8	NA	NA	NA	22.0
Approach			93	2.0	93	2.0	0.159	8.1	LOS A	0.6	14.8	0.63	0.60	0.63	19.6
West: Yosemite Avenue															
5	L2	All MCs	7	2.0	7	2.0	0.343	6.1	LOS A	1.8	45.0	0.33	0.16	0.33	25.2
		LV	7		7		0.343	6.0	LOS A	1.8	45.0	NA	NA	NA	25.3
2	T1	All MCs	689	2.0	689	2.0	0.343	6.1	LOS A	1.8	45.0	0.33	0.16	0.33	20.5
		LV	675		675		0.343	6.0	LOS A	1.8	45.0	NA	NA	NA	20.5
12	R2	All MCs	149	2.0	149	2.0	0.343	6.1	LOS A	1.8	45.0	0.33	0.16	0.33	25.5
		LV	146		146		0.343	6.0	LOS A	1.8	45.0	NA	NA	NA	25.6
Approach			845	2.0	845	2.0	0.343	6.1	LOS A	1.8	45.0	0.33	0.16	0.33	21.6
All Vehicles			1920	2.0	1920	2.0	0.372	6.6	LOS A	1.8	45.0	0.39	0.25	0.41	21.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	745	591	66	0	22
Future Vol, veh/h	0	745	591	66	0	22
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	866	687	77	0	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	384
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	614
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	613
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.13
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	613
HCM Lane V/C Ratio	-	-	-	0.042
HCM Control Delay (s/veh)	-	-	-	11.1
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	681	0	0	650	6	0	0	0	0	0	7
Future Vol, veh/h	64	681	0	0	650	6	0	0	0	0	0	7
Conflicting Peds, #/hr	1	0	2	2	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	120	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	783	0	0	747	7	0	0	0	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	755	0	0	-	-	0	-	-	393	-	-	378
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	851	-	-	0	-	-	0	0	606	0	0	620
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	850	-	-	-	-	-	-	-	604	-	-	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.83	0	0	10.89
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	850	-	-	-	-	619
HCM Lane V/C Ratio	-	0.087	-	-	-	-	0.013
HCM Control Delay (s/veh)	0	9.6	-	-	-	-	10.9
HCM Lane LOS	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	-	0.3	-	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	681	652	19	0	4
Future Vol, veh/h	0	681	652	19	0	4
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	783	749	22	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	388
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	611
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	610
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

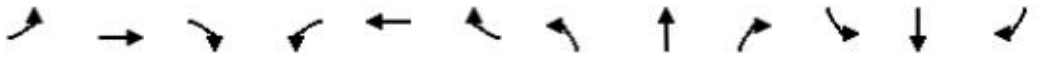
Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	10.95
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	610
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s/veh)	-	-	-	10.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	128	645	15	795	38	73	59	26	60
v/c Ratio	0.33	0.28	0.04	0.48	0.13	0.24	0.19	0.08	0.16
Control Delay (s/veh)	31.0	7.6	17.7	19.2	32.8	20.5	32.7	31.7	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.0	7.6	17.7	19.2	32.8	20.5	32.7	31.7	0.8
Queue Length 50th (ft)	47	64	4	137	14	13	22	10	0
Queue Length 95th (ft)	114	111	18	240	48	56	65	36	0
Internal Link Dist (ft)		120		540		256		576	
Turn Bay Length (ft)	250		170		50		265		265
Base Capacity (vph)	687	3019	549	2509	717	718	768	808	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.21	0.03	0.32	0.05	0.10	0.08	0.03	0.08

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	552	16	13	606	93	33	30	34	52	23	53
Future Volume (veh/h)	113	552	16	13	606	93	33	30	34	52	23	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	627	18	15	689	106	38	34	39	59	26	60
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	1894	54	425	1060	163	146	65	75	162	170	144
Arrive On Green	0.10	0.54	0.54	0.34	0.34	0.34	0.08	0.08	0.08	0.09	0.09	0.09
Sat Flow, veh/h	1781	3528	101	784	3073	472	1781	795	912	1781	1870	1585
Grp Volume(v), veh/h	128	316	329	15	398	397	38	0	73	59	26	60
Grp Sat Flow(s),veh/h/ln	1781	1777	1852	784	1777	1769	1781	0	1706	1781	1870	1585
Q Serve(g_s), s	3.3	4.7	4.7	0.6	8.8	8.8	0.9	0.0	1.9	1.4	0.6	1.7
Cycle Q Clear(g_c), s	3.3	4.7	4.7	0.6	8.8	8.8	0.9	0.0	1.9	1.4	0.6	1.7
Prop In Lane	1.00		0.05	1.00		0.27	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	169	954	994	425	613	610	146	0	140	162	170	144
V/C Ratio(X)	0.76	0.33	0.33	0.04	0.65	0.65	0.26	0.00	0.52	0.36	0.15	0.42
Avail Cap(c_a), veh/h	632	2197	2290	931	1758	1749	690	0	660	785	825	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	6.1	6.1	10.2	12.9	12.9	20.0	0.0	20.5	19.9	19.5	20.0
Incr Delay (d2), s/veh	6.7	0.2	0.2	0.0	1.2	1.2	0.9	0.0	3.0	1.4	0.4	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	1.8	1.8	0.1	4.9	4.9	0.7	0.0	1.4	1.1	0.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.2	6.3	6.3	10.2	14.0	14.0	21.0	0.0	23.5	21.2	19.9	21.9
LnGrp LOS	C	A	A	B	B	B	C		C	C	B	C
Approach Vol, veh/h		773			810			111			145	
Approach Delay, s/veh		9.7			14.0			22.6			21.3	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	8.9	20.5		8.7		29.5		8.3				
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s	16.5	46.0		20.5		57.5		18.0				
Max Q Clear Time (g_c+I1), s	5.3	10.8		3.7		6.7		3.9				
Green Ext Time (p_c), s	0.2	5.2		0.4		3.9		0.3				

Intersection Summary												
HCM 7th Control Delay, s/veh			13.3									
HCM 7th LOS			B									



Lane Group	EBU	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	2	675	278	702	152	326
v/c Ratio	0.02	0.52	0.60	0.30	0.41	0.56
Control Delay (s/veh)	46.5	23.2	36.1	7.3	35.9	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.5	23.2	36.1	7.3	35.9	8.0
Queue Length 50th (ft)	1	144	133	67	74	0
Queue Length 95th (ft)	9	226	251	155	144	61
Internal Link Dist (ft)		540		1203	667	
Turn Bay Length (ft)	170		95			80
Base Capacity (vph)	587	1722	587	2350	755	849
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.39	0.47	0.30	0.20	0.38

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (veh/h)	2	495	92	242	611	132	284
Future Volume (veh/h)	2	495	92	242	611	132	284
Initial Q (Qb), veh		0	0	0	0	0	0
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)			0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No	No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		569	106	278	702	152	326
Peak Hour Factor		0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		1035	192	369	2142	516	459
Arrive On Green		0.35	0.35	0.21	0.60	0.29	0.29
Sat Flow, veh/h		3072	553	1781	3647	1781	1585
Grp Volume(v), veh/h		339	336	278	702	152	326
Grp Sat Flow(s),veh/h/ln		1777	1755	1781	1777	1781	1585
Q Serve(g_s), s		12.9	12.9	12.3	8.2	5.5	15.4
Cycle Q Clear(g_c), s		12.9	12.9	12.3	8.2	5.5	15.4
Prop In Lane			0.32	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		617	610	369	2142	516	459
V/C Ratio(X)		0.55	0.55	0.75	0.33	0.29	0.71
Avail Cap(c_a), veh/h		892	881	596	2142	766	682
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		22.0	22.0	31.1	8.2	23.1	26.6
Incr Delay (d2), s/veh		3.5	3.6	13.2	0.4	1.4	9.0
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		9.3	9.3	10.4	4.7	4.4	10.9
Unsig. Movement Delay, s/veh							
LnGrp Delay(d), s/veh		25.5	25.6	44.4	8.6	24.5	35.5
LnGrp LOS		C	C	D	A	C	D
Approach Vol, veh/h		675			980	478	
Approach Delay, s/veh		25.6			18.8	32.0	
Approach LOS		C			B	C	

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	55.4			21.4	34.1		28.2
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	10.2			14.3	14.9		17.4
Green Ext Time (p_c), s	16.7			3.1	14.1		6.9

Intersection Summary	
HCM 7th Control Delay, s/veh	23.9
HCM 7th LOS	C

Notes

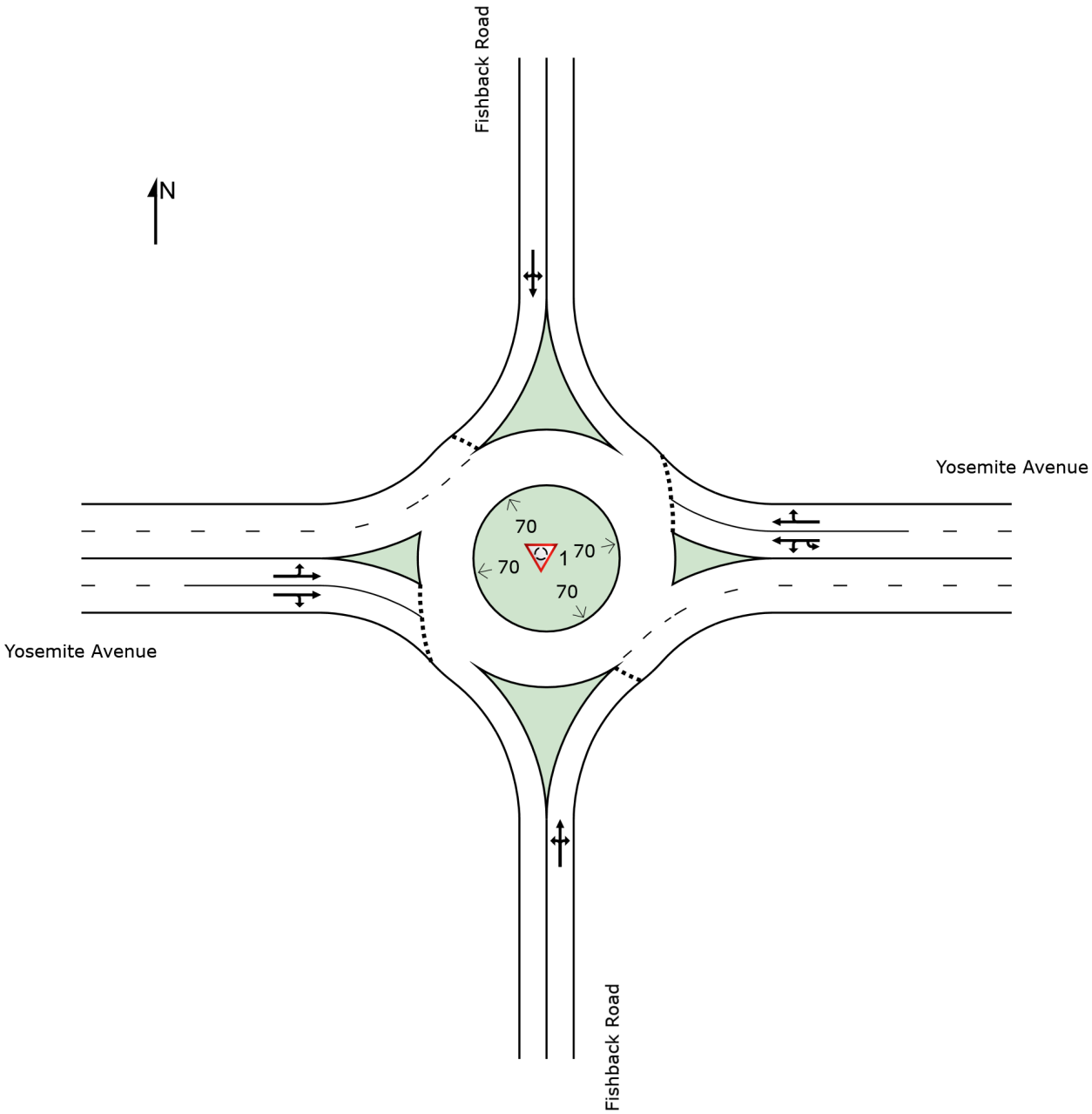
User approved ignoring U-Turning movement.

SITE LAYOUT

Site: 1 [10-Cumulative plus Project PM (Site Folder: Kaiser Manteca)]

NA
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 1 [10-Cumulative plus Project PM (Site Folder: Kaiser Manteca)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] ft	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed mph
South: Fishback Road															
3	L2	All MCs	26	2.0	26	2.0	0.283	10.6	LOS B	1.1	27.2	0.68	0.68	0.72	20.4
		LV	26		26		0.283	10.2	LOS B	1.1	27.2	NA	NA	NA	20.6
8	T1	All MCs	28	2.0	28	2.0	0.283	10.6	LOS B	1.1	27.2	0.68	0.68	0.72	21.3
		LV	28		28		0.283	10.2	LOS B	1.1	27.2	NA	NA	NA	21.5
18	R2	All MCs	100	2.0	100	2.0	0.283	10.6	LOS B	1.1	27.2	0.68	0.68	0.72	17.2
		LV	98		98		0.283	10.2	LOS B	1.1	27.2	NA	NA	NA	17.4
Approach			155	2.0	155	2.0	0.283	10.6	LOS B	1.1	27.2	0.68	0.68	0.72	18.7
East: Yosemite Avenue															
1u	U	All MCs	47	2.0	47	2.0	0.365	6.0	LOS A	2.0	50.9	0.26	0.11	0.26	11.9
		LV	46		46		0.365	5.9	LOS A	2.0	50.9	NA	NA	NA	12.0
1	L2	All MCs	86	2.0	86	2.0	0.365	6.0	LOS A	2.0	50.9	0.26	0.11	0.26	21.7
		LV	85		85		0.365	5.9	LOS A	2.0	50.9	NA	NA	NA	21.8
6	T1	All MCs	789	2.0	789	2.0	0.365	6.0	LOS A	2.0	50.9	0.26	0.11	0.26	22.7
		LV	774		774		0.365	5.9	LOS A	2.0	50.9	NA	NA	NA	22.8
16	R2	All MCs	20	2.0	20	2.0	0.365	6.0	LOS A	2.0	50.9	0.26	0.11	0.26	23.2
		LV	20		20		0.365	5.9	LOS A	2.0	50.9	NA	NA	NA	23.3
Approach			943	2.0	943	2.0	0.365	6.0	LOS A	2.0	50.9	0.26	0.11	0.26	22.2
North: Fishback Road															
7	L2	All MCs	8	2.0	8	2.0	0.057	7.4	LOS A	0.2	4.9	0.62	0.61	0.62	14.9
		LV	8		8		0.057	7.2	LOS A	0.2	4.9	NA	NA	NA	15.0
4	T1	All MCs	14	2.0	14	2.0	0.057	7.4	LOS A	0.2	4.9	0.62	0.61	0.62	23.0
		LV	13		13		0.057	7.2	LOS A	0.2	4.9	NA	NA	NA	23.1
14	R2	All MCs	8	2.0	8	2.0	0.057	7.4	LOS A	0.2	4.9	0.62	0.61	0.62	22.4
		LV	8		8		0.057	7.2	LOS A	0.2	4.9	NA	NA	NA	22.6
Approach			31	2.0	31	2.0	0.057	7.4	LOS A	0.2	4.9	0.62	0.61	0.62	20.6
West: Yosemite Avenue															
5	L2	All MCs	26	2.0	26	2.0	0.397	6.8	LOS A	2.1	53.8	0.37	0.19	0.37	24.6
		LV	26		26		0.397	6.7	LOS A	2.1	53.8	NA	NA	NA	24.7
2	T1	All MCs	871	2.0	871	2.0	0.397	6.8	LOS A	2.1	53.8	0.37	0.19	0.37	19.7
		LV	853		853		0.397	6.7	LOS A	2.1	53.8	NA	NA	NA	19.8
12	R2	All MCs	66	2.0	66	2.0	0.397	6.8	LOS A	2.1	53.8	0.37	0.19	0.37	25.1
		LV	65		65		0.397	6.7	LOS A	2.1	53.8	NA	NA	NA	25.2
Approach			963	2.0	963	2.0	0.397	6.8	LOS A	2.1	53.8	0.37	0.19	0.37	20.4
All Vehicles			2092	2.0	2092	2.0	0.397	6.7	LOS A	2.1	53.8	0.35	0.20	0.35	20.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: Siegloch M1 implied by US HCM 6 Roundabout Capacity Model.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	975	808	9	0	59
Future Vol, veh/h	0	975	808	9	0	59
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1016	842	9	0	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	428
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	575
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	574
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	12.02
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	574
HCM Lane V/C Ratio	-	-	-	0.107
HCM Control Delay (s/veh)	-	-	-	12
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	958	0	0	796	7	0	0	0	0	0	18
Future Vol, veh/h	18	958	0	0	796	7	0	0	0	0	0	18
Conflicting Peds, #/hr	2	0	2	2	0	2	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	120	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	998	0	0	829	7	0	0	0	0	0	19

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	838	0	0	-	-	0	-	-	501	-	-	420
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	792	-	-	0	-	-	0	0	515	0	0	582
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	790	-	-	-	-	-	-	-	515	-	-	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.18	0	0	11.41
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	790	-	-	-	-	581
HCM Lane V/C Ratio	-	0.024	-	-	-	-	0.032
HCM Control Delay (s/veh)	0	9.7	-	-	-	-	11.4
HCM Lane LOS	A	A	-	-	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	958	786	19	0	18
Future Vol, veh/h	0	958	786	19	0	18
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	998	819	20	0	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	421
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	581
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	580
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	11.42
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	580
HCM Lane V/C Ratio	-	-	-	0.032
HCM Control Delay (s/veh)	-	-	-	11.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	154	834	28	768	20	40	102	26	66
v/c Ratio	0.44	0.35	0.12	0.60	0.10	0.18	0.35	0.08	0.17
Control Delay (s/veh)	32.7	7.8	19.9	20.9	34.8	25.2	33.1	30.2	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	32.7	7.8	19.9	20.9	34.8	25.2	33.1	30.2	1.0
Queue Length 50th (ft)	60	94	8	143	8	9	40	10	0
Queue Length 95th (ft)	140	162	30	241	32	41	100	35	0
Internal Link Dist (ft)		120		540		258		576	
Turn Bay Length (ft)	250		170		50		265		265
Base Capacity (vph)	509	2936	466	2577	592	592	707	744	715
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.28	0.06	0.30	0.03	0.07	0.14	0.03	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	149	780	29	1	26	677	68	19	21	17	99	25
Future Volume (veh/h)	149	780	29	1	26	677	68	19	21	17	99	25
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		0.97	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
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	804	30		27	698	70	20	22	18	102	26
Peak Hour Factor	0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	203	1916	71		378	1095	110	104	55	45	179	188
Arrive On Green	0.11	0.55	0.55		0.34	0.34	0.34	0.06	0.06	0.06	0.10	0.10
Sat Flow, veh/h	1781	3493	130		658	3252	326	1781	952	779	1781	1870
Grp Volume(v), veh/h	154	409	425		27	381	387	20	0	40	102	26
Grp Sat Flow(s),veh/h/ln	1781	1777	1847		658	1777	1801	1781	0	1730	1781	1870
Q Serve(g_s), s	3.9	6.2	6.2		1.3	8.3	8.4	0.5	0.0	1.0	2.5	0.6
Cycle Q Clear(g_c), s	3.9	6.2	6.2		1.3	8.3	8.4	0.5	0.0	1.0	2.5	0.6
Prop In Lane	1.00		0.07		1.00		0.18	1.00		0.45	1.00	
Lane Grp Cap(c), veh/h	203	974	1013		378	598	606	104	0	101	179	188
V/C Ratio(X)	0.76	0.42	0.42		0.07	0.64	0.64	0.19	0.00	0.40	0.57	0.14
Avail Cap(c_a), veh/h	599	2159	2244		813	1773	1797	696	0	676	831	873
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
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.8	6.1	6.1		10.6	12.9	12.9	20.7	0.0	20.9	19.8	18.9
Incr Delay (d2), s/veh	5.7	0.3	0.3		0.1	1.1	1.1	0.9	0.0	2.5	2.8	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	2.3	2.4		0.3	4.6	4.7	0.4	0.0	0.8	1.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	25.5	6.4	6.4		10.7	14.0	14.0	21.6	0.0	23.5	22.6	19.2
LnGrp LOS	C	A	A		B	B	B	C		C	C	B
Approach Vol, veh/h		988				795			60			194
Approach Delay, s/veh		9.4				13.9			22.8			21.7
Approach LOS		A				B			C			C

Timer - Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	9.8	20.0		9.1		29.8		7.2				
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s	15.5	46.0		21.5		56.0		18.0				
Max Q Clear Time (g_c+I1), s	5.9	10.4		4.5		8.2		3.0				
Green Ext Time (p_c), s	0.2	5.1		0.5		5.4		0.1				

Intersection Summary			
HCM 7th Control Delay, s/veh		12.7	
HCM 7th LOS		B	

Notes

User approved ignoring U-Turning movement.



Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	64
Future Volume (veh/h)	64
Initial Q (Qb), veh	0
Lane Width Adj.	1.00
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	66
Peak Hour Factor	0.97
Percent Heavy Veh, %	2
Cap, veh/h	159
Arrive On Green	0.10
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	66
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	1.8
Cycle Q Clear(g_c), s	1.8
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	159
V/C Ratio(X)	0.41
Avail Cap(c_a), veh/h	739
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	19.5
Incr Delay (d2), s/veh	1.7
Initial Q Delay(d3), s/veh	0.0
%ile BackOfQ(95%),veh/ln	1.2
Unsig. Movement Delay, s/veh	
LnGrp Delay(d), s/veh	21.2
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	



Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	906	151	670	100	172
v/c Ratio	0.58	0.41	0.27	0.30	0.40
Control Delay (s/veh)	20.1	35.4	5.3	34.0	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	20.1	35.4	5.3	34.0	8.1
Queue Length 50th (ft)	173	73	54	49	0
Queue Length 95th (ft)	318	147	114	99	52
Internal Link Dist (ft)	540		1203	666	
Turn Bay Length (ft)		95			80
Base Capacity (vph)	1762	596	2490	766	773
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.25	0.27	0.13	0.22

Intersection Summary



Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations								
Traffic Volume (veh/h)	0	794	84	146	650	97	167	
Future Volume (veh/h)	0	794	84	146	650	97	167	
Initial Q (Qb), veh		0	0	0	0	0	0	
Lane Width Adj.		1.00	1.00	1.00	1.00	1.00	1.00	
Ped-Bike Adj(A_pbT)			0.97	1.00		1.00	1.00	
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No			No	No		
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h		819	87	151	670	100	172	
Peak Hour Factor		0.97	0.97	0.97	0.97	0.97	0.97	
Percent Heavy Veh, %		2	2	2	2	2	2	
Cap, veh/h		1568	167	232	2398	343	305	
Arrive On Green		0.49	0.49	0.13	0.67	0.19	0.19	
Sat Flow, veh/h		3323	343	1781	3647	1781	1585	
Grp Volume(v), veh/h		451	455	151	670	100	172	
Grp Sat Flow(s),veh/h/ln		1777	1796	1781	1777	1781	1585	
Q Serve(g_s), s		11.8	11.8	5.5	5.1	3.3	6.7	
Cycle Q Clear(g_c), s		11.8	11.8	5.5	5.1	3.3	6.7	
Prop In Lane			0.19	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		863	872	232	2398	343	305	
V/C Ratio(X)		0.52	0.52	0.65	0.28	0.29	0.56	
Avail Cap(c_a), veh/h		1101	1113	736	2398	946	842	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)		1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh		12.0	12.0	28.0	4.4	23.4	24.8	
Incr Delay (d2), s/veh		2.3	2.2	13.4	0.3	2.1	7.3	
Initial Q Delay(d3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln		7.6	7.7	5.3	2.1	2.7	5.3	
Unsig. Movement Delay, s/veh								
LnGrp Delay(d), s/veh		14.3	14.2	41.4	4.7	25.6	32.1	
LnGrp LOS		B	B	D	A	C	C	
Approach Vol, veh/h		906			821	272		
Approach Delay, s/veh		14.3			11.5	29.7		
Approach LOS		B			B	C		

Timer - Assigned Phs	2			5	6		8
Phs Duration (G+Y+Rc), s	50.7			12.8	37.9		17.0
Change Period (Y+Rc), s	5.0			4.0	5.0		4.0
Max Green Setting (Gmax), s	42.0			28.0	42.0		36.0
Max Q Clear Time (g_c+I1), s	7.1			7.5	13.8		8.7
Green Ext Time (p_c), s	16.8			1.9	19.1		4.5

Intersection Summary	
HCM 7th Control Delay, s/veh	15.2
HCM 7th LOS	B

Notes
User approved ignoring U-Turning movement.

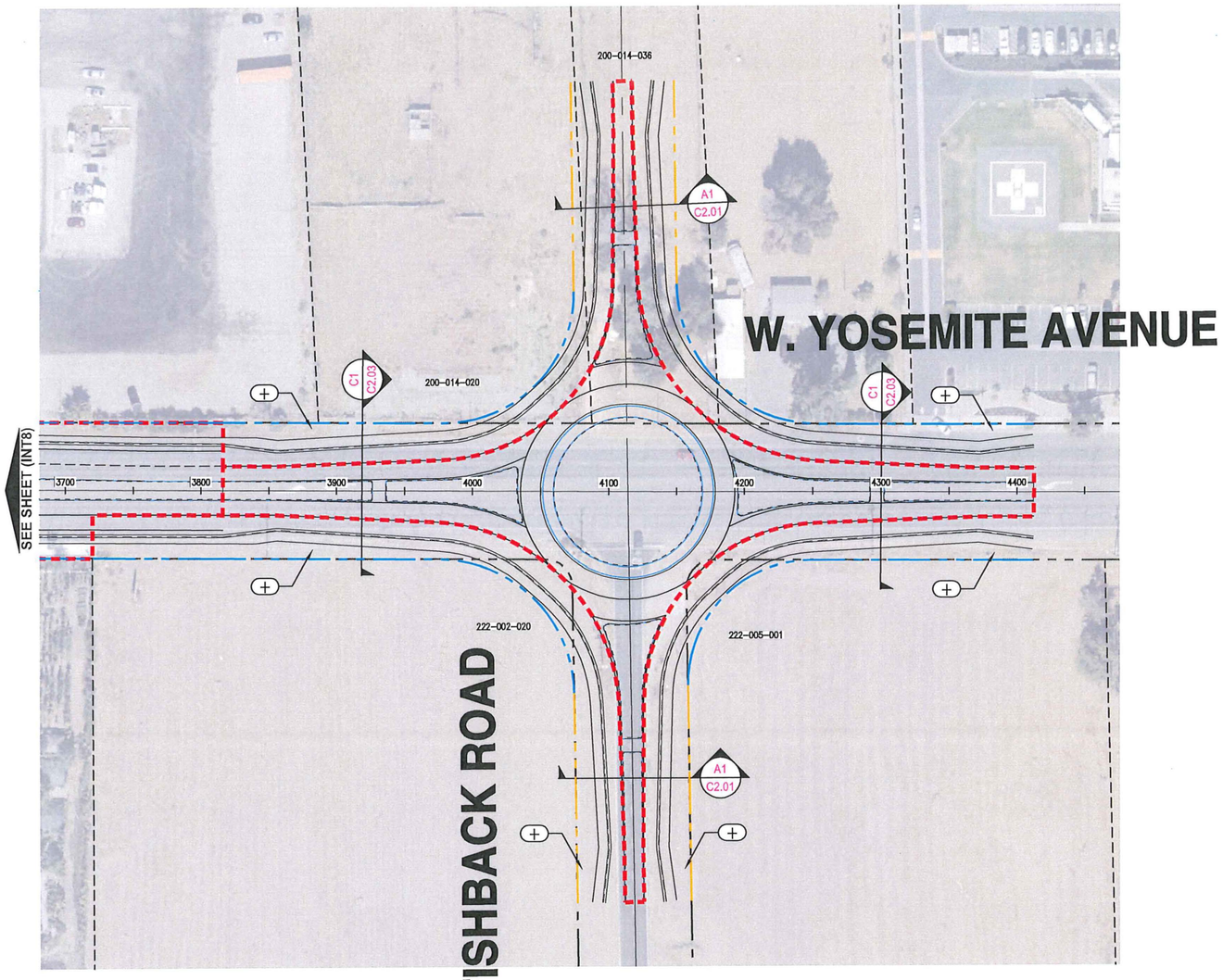
Appendix H – Yosemite Ave. & Fishback Rd. (Study Intersection 1) Roundabout Conceptual Plan

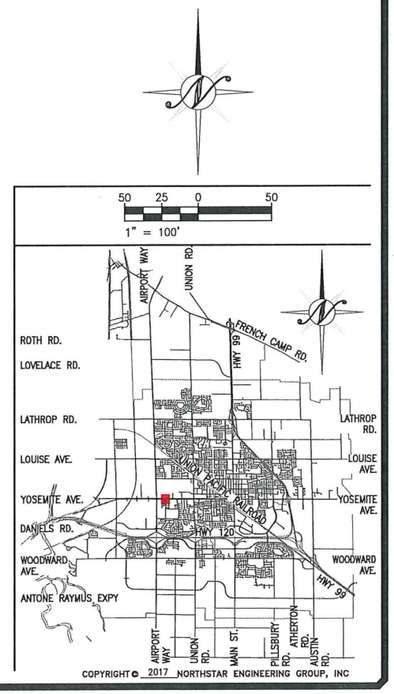
DESCRIPTION OF WORK

(+) –A portion of the required right–of–way and/or improvements are already in place as noted on the plan. No additional right–of–way and/or improvements are required in this area. Contractor shall conform proposed improvements to existing improvements and protect existing curb, gutter, sidewalk, and landscaping throughout the course of construction and repair/replace if damaged.

LEGEND

- CENTERLINE
- EXISTING PROPERTY LINES (PER GIS MAP)
- EXISTING RIGHT–OF–WAY (PER GIS MAP)
- PROPOSED RIGHT–OF–WAY – 2 LANE SEE SHEET C2.01 FOR TYPICAL SECTION
- PROPOSED RIGHT–OF–WAY – 4 LANE SEE SHEET C2.03 FOR TYPICAL SECTION
- PROPOSED RIGHT–OF–WAY – 6 LANE SEE SHEET C2.06 FOR TYPICAL SECTION
- PROPOSED CURB, GUTTER AND SIDEWALK
- PROPOSED MEDIAN CURB
- PROPOSED P.F.I.P. IMPROVEMENT LIMITS
- PROPOSED R/W ACQUISITION AREA





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CALL BEFORE YOU DIG 800-227-2600

REGISTERED PROFESSIONAL ENGINEER TIMOTHY DELLER No. 82347 CIVIL CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS			
NO.	DESCRIPTIONS	DATE	APPROVED

W. YOSEMITE AVE & FISHBACK RD

PRELIMINARY OPINION OF PROBABLE COST

MANTECA, PFIP TRANSPORTATION CALIFORNIA

Northstar Engineering Group, Inc.
• CIVIL ENGINEERING • SURVEYING • PLANNING •
820 12th Street Modesto, CA 95354
(209) 524–3825 Phone (209) 524–3826 Fax

JOB #:	14–1489
DATE:	6/9/2017
SCALE:	AS NOTED
DRAWN:	KM
DESIGN:	KM
CHK'D:	TD

SHEET NUMBER

INT46

PLOTTED: 07/31/17 09:57 PLOTTED BY: kaylor
DWG NAME: P:\14–1489 PFIP Transportation\Planning\CEB–Inter – 42–50.dwg

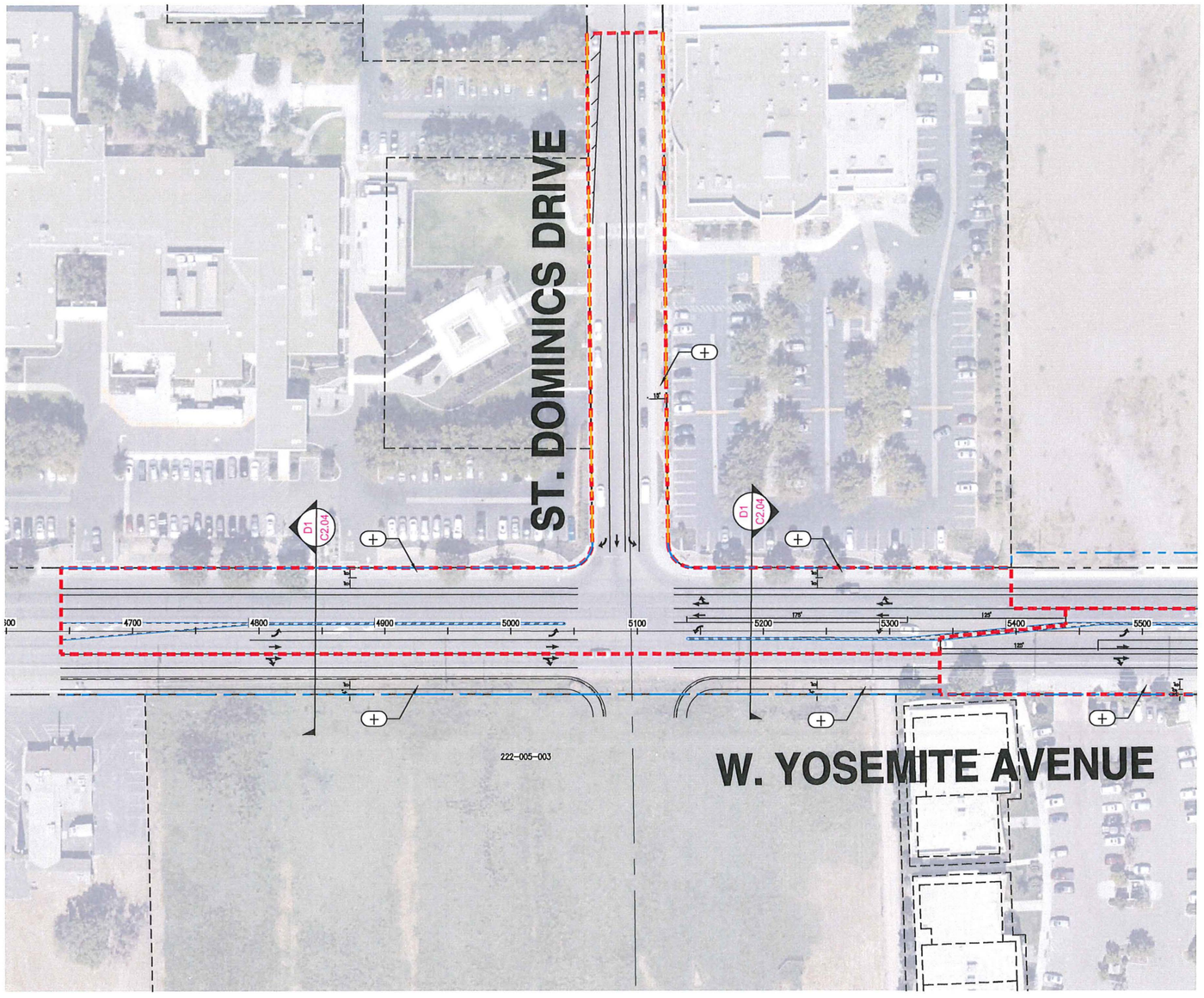
Appendix I – Yosemite Ave. & St. Dominics Dr. (Study Intersection 5) Signalization Conceptual Plan

DESCRIPTION OF WORK

-Construct W. Yosemite Avenue from to (4) lanes with a 14'0 wide landscaped median. Construct (1) dedicated left turn lane on both East-bound and West-bound approaches.
-Restripe St. Dominics Drive to allow for (1) dedicated left turn lane, (1) South-bound thru lane, (1) North-bound thru lane, and (1) dedicated right turn lane.
-Contractor shall protect existing Curb, Gutter, Sidewalk, and Landscaping along St. Dominics Drive and along the north side of W. Yosemite Avenue.
-Construct new traffic signal.
(+) -A portion of the required right-of-way and/or improvements are already in place as noted on the plan. No additional right-of-way and/or improvements are required in this area. Contractor shall conform proposed improvements to existing improvements and protect existing curb, gutter, sidewalk, and landscaping throughout the course of construction and repair/replace if damaged.

LEGEND

- CENTERLINE
- EXISTING PROPERTY LINES (PER GIS MAP)
- EXISTING RIGHT-OF-WAY (PER GIS MAP)
- PROPOSED RIGHT-OF-WAY – 2 LANE SEE SHEET C2.01 FOR TYPICAL SECTION
- PROPOSED RIGHT-OF-WAY – 4 LANE SEE SHEET C2.03 FOR TYPICAL SECTION
- PROPOSED RIGHT-OF-WAY – 6 LANE SEE SHEET C2.06 FOR TYPICAL SECTION
- PROPOSED CURB, GUTTER AND SIDEWALK
- PROPOSED MEDIAN CURB
- PROPOSED P.F.I.P. IMPROVEMENT LIMITS
- PROPOSED R/W ACQUISITION AREA



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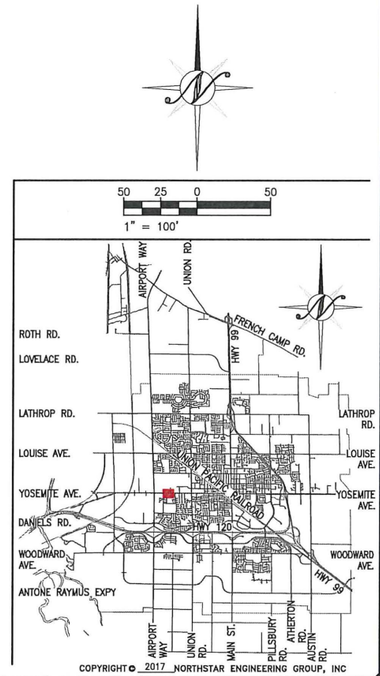

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REGISTERED PROFESSIONAL ENGINEER KEVIN MCCARTY No. 74134 CIVIL CALIFORNIA

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

NO.	DESCRIPTIONS	DATE	APPROVED

W. YOSEMITE AVE & ST. DOMINICS DR

PRELIMINARY OPINION OF PROBABLE COST

MANTECA, PFIP TRANSPORTATION CALIFORNIA

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DRAWN:	KM
DESIGN:	KM
CHK'D:	TD

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